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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 40-F

☐ REGISTRATION STATEMENT PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

OR

☒ ANNUAL REPORT PURSUANT TO SECTION 13(a) OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022 **Commission File Number 001-15144**

TELUS Corporation

(Exact Name of Registrant as specified in its charter)

British Columbia, Canada
(Province or other jurisdiction of incorporation or organization)

4812
(Primary Standard Industrial Classification Code Number (if applicable))

7th Floor – 510 West Georgia Street
Vancouver, British Columbia V6B 0M3, Canada
(604) 697-8044
(Address and telephone number of Registrant's principal executive offices)

CT Corporation System, 28 Liberty Street
New York, New York 10005
(212) 590-9200
(Name, address (including zip code) and telephone number (including area code) of agent for service in the United States)

Securities registered pursuant to section 12(b) of the Act.

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares	**TU**	**New York Stock Exchange**

Securities registered or to be registered pursuant to Section 12(g) of the Act.

None
(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.

None
(Title of Class)

For annual reports, indicate by check mark the information filed with this Form:
☒ Annual information form ☒ Audited annual financial statements

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of December 31, 2022:

1,430,590,439 Common Shares

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files).

Yes ☒ No ☐

Indicate by check mark whether the Registrant is an emerging growth company as defined in Rule 12b-2 of the Exchange Act.

Emerging Growth Company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the Registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards† provided pursuant to Section 13(a) of the Exchange Act.

☐

†The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the Registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

☐

This annual report on Form 40-F shall be incorporated by reference into or as an exhibit to, as applicable, each of the following of the Registrant's Registration Statements under the Securities Act of 1933, as amended: Form S-8s (File Nos. 333-125486, 333-181463 and 333-268186), Form F-3D (File No. 333-258770), and Form F-10 (File No. 333-266633).

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CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Based on the evaluation by TELUS Corporation ("TELUS" or the "Registrant") as of December 31, 2022 of the effectiveness of the design and operation of the Registrant's disclosure controls and procedures under the supervision of the Audit Committee, including the Registrant's Chief Executive Officer and Chief Financial Officer, the Chief Executive Officer and Chief Financial Officer have concluded that the Registrant's disclosure controls and procedures as defined in Rule 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act") are effective to a reasonable level of assurance to ensure that information required to be disclosed by the Registrant in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the United States Securities and Exchange Commission's (the "SEC") rules and forms, and to ensure that information required to be disclosed by the Registrant in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Registrant's management, including the Registrant's Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

It should be noted that while TELUS' Chief Executive Officer and Chief Financial Officer believe that TELUS' disclosure controls and procedures provide a reasonable level of assurance that they are effective, they do not expect that TELUS' disclosure controls and procedures or internal control over financial reporting will prevent all errors and fraud. A control system, no matter how well conceived or operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

Management's Annual Report on Internal Control Over Financial Reporting

The report of management on our internal control over financial reporting is located under the heading "Report of Management on Internal Control Over Financial Reporting" in our audited consolidated financial statements, which are filed as Exhibit 99.4 to this annual report on Form 40-F, and is incorporated by reference herein.

Attestation Report of Independent Registered Public Accounting Firm

The attestation report on our internal control over financial reporting is located under the heading "Report of Independent Registered Public Accounting Firm" in our audited consolidated financial statements, which are filed as Exhibit 99.4 to this annual report on Form 40-F, and is incorporated by reference herein.

Changes in Internal Controls Over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the above evaluation that occurred during the period covered by this annual report on Form 40-F that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

IDENTIFICATION OF THE AUDIT COMMITTEE

TELUS has a separately designated standing Audit Committee established in accordance with section 3(a)(58)(A) of the Exchange Act. The current members of the Audit Committee are David Mowat (Chair), Hazel Claxton, Thomas Flynn, Denise Pickett and Sean Willy. All members of the Audit Committee are "independent" as such term is defined under applicable securities laws and applicable New York Stock Exchange ("NYSE") rules.

AUDIT COMMITTEE FINANCIAL EXPERT

The Board of Directors (the "Board") of TELUS has determined that David Mowat, the Audit Committee Chair, is the "audit committee financial expert" as such term is defined by U.S. securities laws and "independent" as noted above. The information contained under the heading "Audit Committee" starting on page 36 of TELUS' year-end 2022 Annual Information Form, filed as Exhibit 99.3 to this annual report on Form 40-F, is incorporated by reference herein.

CODE OF ETHICS

The Registrant has adopted a Code of Ethics and Conduct (the "Code") that applies to all directors, officers, including the Chief Executive Officer and the Chief Financial Officer, and employees. The Code has been posted on the Registrant's Internet website at https://www.telus.com/en/about/policies-and-disclosures/code-of-ethics-and-conduct. The Code is also available to any person, upon request, without charge by contacting TELUS Investor Relations by telephone at 1-800-667-4871 or by mail at 510 W. Georgia Street, 8th Floor, Vancouver, B.C. V6B 0M3 . The Code was amended in November 2021 to make minor clarifications to existing provisions.

PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table is a summary of billing by Deloitte LLP (PCAOB ID No. 01208), as external auditor of TELUS (the "External Auditor"), during the period from January 1, 2022 to December 31, 2022 (all amounts are in Canadian dollars):

Type of work	$ (millions)	%
Audit fees (1)	3.125	27.4
Audit-related fees (2)	7.230	63.3
Tax fees (3)	870	7.6
All other fees (4)	192	1.7
Total	**11.417**	**100.0**

(1) Includes fees for services rendered by Deloitte in relation to the audit and review of our financial statements.
(2) Includes fees for audits in relation to our statutory and regulatory filings, audits and reviews of subsidiaries including TELUS International, pension-related audits, customer required reviews and translation services rendered by Deloitte in relation to the audit or review of our financial statements that were not part of audit fees.
(3) Relates to tax compliance, tax advice and tax planning.
(4) Includes fees for services rendered by Deloitte that were not in relation to the audit or review of our financial statements, such as proxy circular assurance work, Data Analytics Maturity Assessment and Benchmarking and other Specified Procedures.

The following table is a summary of billing by the External Auditor, during the period from January 1, 2021 to December 31, 2021 (all amounts are in Canadian dollars):

Type of work	$ (millions)	%
Audit fees (1)	2.810	25.8
Audit-related fees (2)	6.869	63.2
Tax fees (3)	0.834	7.7
All other fees (4)	0.359	3.3
Total	**10.871**	**100.0**

(1) Includes fees for services rendered by Deloitte in relation to the audit and review of our financial statements.
(2) Includes fees for audits in relation to our statutory and regulatory filings, audits and reviews of subsidiaries including TELUS International, pension-related audits, customer required reviews and translation services rendered by Deloitte in relation to the audit or review of our financial statements that were not part of audit fees.
(3) Relates to tax compliance, tax advice and tax planning.
(4) Includes fees for services rendered by Deloitte that were not in relation to the audit or review of our financial statements, such as Board Effectiveness Assessment, M&A Due Diligence, Advisory services for private investment fund establishment and other Specified Procedures.

All requests for non-prohibited audit, audit-related and non-audit services provided by the External Auditor and its affiliates to TELUS are required to be pre-approved by the Audit Committee of the Board. To enable this, TELUS has implemented a process by which all requests for services involving the External Auditor are routed for review by the VP Risk Management and Chief Internal Auditor to validate that the requested service is a non-prohibited service and to verify that there is a compelling business reason for the request. If the request passes this review, it is then forwarded to the Chief Financial Officer for further review. Pending the Chief Financial Officer's

affirmation, the request is then presented to the Audit Committee for its review, evaluation and pre-approval or denial at its next scheduled quarterly meeting. If the timing of the request is urgent, it is provided to the Audit Committee Chair for his review, evaluation and pre-approval or denial on behalf of the Audit Committee (with the Audit Committee's review at the next scheduled quarterly meeting). Throughout the year, the Audit Committee monitors the actual versus approved expenditure for each of the approved requests. During the fiscal year ended December 31, 2022, the Audit Committee did not approve any of the fees captioned in the table above subject to waiver of pre-approval provisions set forth in Rule 2-01(c)(7)(i)(C) of Regulation S-X.

OFF-BALANCE SHEET ARRANGEMENTS

The Registrant has no off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on the financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors.

TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS

The information provided under the heading "Commitments and contingent liabilities - Contractual obligations as at December 31, 2022" set forth on page 67 of the Management's Discussion and Analysis filed as Exhibit 99.4 to this annual report on Form 40-F, is incorporated by reference herein.

MINE SAFETY DISCLOSURE

Not applicable.

DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

SUMMARY OF SIGNIFICANT DIFFERENCES FROM NYSE CORPORATE GOVERNANCE RULES

A summary of significant ways in which corporate governance practices followed by TELUS differ from the corporate governance practices required to be followed by U.S. domestic companies under the New York Stock Exchange's Listing Standards (disclosure required by section 303A.11 of the NYSE Listed Company Manual) is available on the Registrant's corporate governance website at https://www.telus.com/en/about/investor-relations/corporate-governance/statement-of-our-governance-practices.

UNDERTAKING AND CONSENT TO SERVICE OF PROCESS

A. Undertaking

The Registrant undertakes to make available, in person or by telephone, representatives to respond to inquiries made by the SEC staff, and to furnish promptly, when requested to do so by the SEC staff, information relating to: the securities registered pursuant to Form 40-F; the securities in relation to which the obligation to file an annual report on Form 40-F arises; or transactions in said securities.

B. Consent to Service of Process

The Registrant has previously filed with the SEC a Form F-X in connection with the class of securities in relation to which the obligation to file this annual report on Form 40-F arises.

EXHIBIT INDEX

The following documents are filed as exhibits to this annual report on Form 40-F:

Exhibit Number	Document
99.1	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act
99.2	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act
99.3	Annual Information Form for the year ended December 31, 2022, dated February 9, 2023
99.4	Audited Consolidated Financial Statements as at and for the years ended December 31, 2022 and 2021 and Management's Discussion and Analysis
99.5	Consent of Independent Registered Public Accounting Firm
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Scheme Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Scheme Definition Linkbase
101.LAB	XBRL Taxonomy Extension Scheme Label Linkbase
101.PRE	XBRL Taxonomy Extension Scheme Presentation Linkbase
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

SIGNATURES

Pursuant to the requirements of the Exchange Act, the Registrant certifies that it meets all of the requirements for filing on Form 40-F and has duly caused this annual report to be signed on its behalf by the undersigned, thereto duly authorized.

Registrant: TELUS Corporation

By: */s/ Andrea Wood*
Andrea Wood
Chief Legal and Governance Officer

Date: February 9, 2023

Exhibit 99.1

Certification

I, Darren Entwistle, certify that:

1. I have reviewed this annual report on Form 40-F of TELUS Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;

4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and

5. The issuer's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: February 9, 2023

/s/ Darren Entwistle
Darren Entwistle
President and Chief Executive Officer

Certification

I, Doug French, certify that:

1. I have reviewed this annual report on Form 40-F of TELUS Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;

4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and

5. The issuer's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: February 9, 2023

/s/ Doug French
Doug French
Executive Vice President and Chief Financial Officer

Exhibit 99.2

Certifications

Pursuant to 18 U.S.C. §1350, each of the undersigned officers of TELUS Corporation ("TELUS") hereby certifies that to his knowledge, (a) the annual report for the period ended December 31, 2022 (the "Report") fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and (b) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of TELUS.

Date: February 9, 2023

/s/ Darren Entwistle
Darren Entwistle
President and Chief Executive Officer

Date: February 9, 2023

/s/ Doug French
Doug French
Executive Vice President and Chief Financial Officer

Exhibit 99.3

Annual Information Form for the year ended December 31, 2022, dated February 9, 2023

[previously filed on SEDAR]

TELUS Corporation
Annual Information Form for the year ended
December 31, 2022

February 9, 2023



1. CAUTION REGARDING FORWARD-LOOKING STATEMENTS

The terms *TELUS, the Company, we, us* and *our* refer to TELUS Corporation and, where the context of the narrative permits or requires, its subsidiaries.

This document contains forward-looking statements about expected events and our financial and operating performance. Forward-looking statements include any statements that do not refer to historical facts. They include, but are not limited to, statements relating to our objectives and our strategies to achieve those objectives, our plans and expectations regarding the impact of the COVID-19 pandemic and responses to it, our expectations regarding trends in the telecommunications industry including demand for mobile data and ongoing internet subscriber base growth, and our financing plans including our multi-year dividend growth program. Forward-looking statements are typically identified by the words assumption, goal, guidance, objective, outlook, strategy, target and other similar expressions, or future or conditional verbs such as *aim*, *anticipate*, *believe*, *could*, *expect*, *intend*, *may*, *plan*, *predict*, *seek*, *should*, *strive* and *will*. These statements are made pursuant to the "safe harbour" provisions of applicable securities laws in Canada and the United States *Private Securities Litigation Reform Act of 1995*.

By their nature, forward-looking statements are subject to inherent risks and uncertainties and are based on assumptions, including assumptions about future economic conditions and courses of action. These assumptions may ultimately prove to have been inaccurate and, as a result, our actual results or events may differ materially from expectations expressed in or implied by the forward-looking statements. Our general outlook and assumptions for 2022 are presented in *Section 9 General trends, outlook and assumptions, and regulatory developments and proceedings* in the 2022 annual Management's discussion and analysis (MD&A).

Risks and uncertainties that could cause actual performance or events to differ materially from the forward-looking statements made herein and in other TELUS filings include, but are not limited to, the following:

- The COVID-19 pandemic including its impacts on our customers, suppliers and vendors, our team members and our communities, as well as changes resulting from the pandemic to our business and operations.
- Regulatory matters including: changes to our regulatory regime (the timing of announcement or implementation of which are uncertain) or the outcomes of proceedings, cases or inquiries relating to its application, including but not limited to those set out in *Section 9.4 Communications industry regulatory developments and proceedings* in this MD&A, such as the potential for government to allow consolidation of competitors in our industry or conversely for government to intervene with the intent of further increasing competition, for example, through mandated wholesale access; the potential for additional government intervention on pricing; federal and provincial consumer protection legislation; a new policy direction to the CRTC; the introduction in Parliament of new federal privacy legislation that could materially expand or alter the scope of consumer privacy rights, include significant administrative monetary penalties and a privacy right of action, and implement a new regulatory regime for the use of artificial intelligence (AI) in the private sector, with significant enforcement powers; amendments to existing federal legislation; potential threats to unitary federal regulatory authority over communications in Canada; potential threats to the CRTC's ability to enforce competitive safeguards such as the Standstill Rule and the *Wholesale Code*, which aims to ensure the fair treatment by vertically integrated firms of rival competitors operating as both broadcasting distributors and programming services; regulatory action by the Competition Bureau or other regulatory agencies; spectrum allocation and compliance with licences, including our compliance with licence conditions, changes to spectrum licence fees, spectrum policy determinations such as restrictions on the purchase, sale, subordination, use and transfer of spectrum licences, the cost and availability of spectrum and timing of spectrum allocation, and ongoing and future consultations and decisions on spectrum licensing and policy frameworks, auctions and allocation; draft legislation permitting the government to restrict the use in telecommunications networks of equipment made by specified companies, potentially including Huawei and ZTE; draft legislation imposing new cybersecurity reporting requirements; the request by the Minister of Innovation, Science and Industry to telecommunications service providers, including TELUS, to improve network resiliency; restrictions on non-Canadian ownership and control of the common shares of TELUS Corporation (Common Shares) and the ongoing monitoring of, and compliance with, such restrictions; unanticipated changes to the current copyright regime, which could impact obligations for internet service providers or broadcasting undertakings; and our ability to comply with complex and changing regulation of the healthcare and medical devices industry in the jurisdictions in which we operate, including as an operator of health clinics. The jurisdictions in which we operate, as well as the contracts that we enter into (particularly contracts entered into by TELUS International (Cda) Inc. (TELUS International or TI)), require us to comply with, or facilitate our clients' compliance with, numerous, complex and sometimes conflicting legal regimes, both domestically and internationally. See *TELUS International's financial performance which impacts our financial performance* below.

- Competitive environment including: our ability to continue to retain customers through an enhanced customer service experience that is differentiated from our competitors, including through the deployment and operation of evolving network infrastructure; intense competition, including the ability of industry competitors to successfully combine a mix of new service offerings, in some cases under one bundled and/or discounted monthly rate, along with their existing services; the success of new products, services and supporting systems, such as home automation, security and Internet of Things (IoT) services for internet-connected devices; continued intense competition across all services among telecommunications companies, cable companies, other communications companies and over-the-top (OTT) services, which, among other things, places pressures on current and future average revenue per subscriber per month (ARPU), cost of acquisition, cost of retention and churn rates for all services, as do market conditions, government actions, customer usage patterns, increased data bucket sizes or flat-rate pricing trends for voice and data, inclusive rate plans for voice and data, and availability of Wi-Fi networks for data; consolidation, mergers and acquisitions of industry competitors; subscriber additions, losses and retention volumes; our ability to obtain and offer content on a timely basis across multiple devices on mobile and TV platforms at a reasonable cost as content costs per unit continue to grow; vertical integration in the broadcasting industry resulting in competitors owning broadcast content services, and timely and effective enforcement of related regulatory safeguards; TI's ability to compete with professional services companies that offer consulting services, information technology companies with digital capabilities, and traditional contact centre and business process outsourcing companies that are expanding their capabilities to offer higher-margin and higher-growth digital services; in our TELUS Health business, our ability to compete with other providers of employee and family assistance programs, benefits administration, electronic medical records and pharmacy management products, claims adjudicators, systems integrators and health service providers, including competitors with a vertically integrated mix of health services delivery, IT solutions and related services, global providers that could achieve expanded Canadian footprints, and providers of virtual healthcare services, preventative health services and personal emergency response services; and in our TELUS Agriculture & Consumer Goods business, our ability to compete with focused software and IoT competitors.
- Technology including: reduced utilization and increased commoditization of traditional fixed voice services (local and long distance) resulting from impacts of OTT applications and mobile substitution; a declining overall market for TV services, resulting in part from content piracy and signal theft, a rise in OTT direct-to-consumer video offerings and virtual multichannel video programming distribution platforms; the increasing number of households with only mobile and/or internet-based telephone services; potential decline in ARPU as a result of, among other factors, substitution by messaging and OTT applications; substitution by increasingly available Wi-Fi services; and disruptive technologies, such as OTT IP services, including software-defined networks in the business market that may displace or cause us to reprice our existing data services, and self-installed technology solutions.

  Challenges to our ability to deploy technology including : high subscriber demand for data that challenges wireless networks and spectrum capacity levels and may be accompanied by increases in delivery cost; our reliance on information technology and our ability to continually streamline our legacy systems; the roll-out, anticipated benefits and efficiencies, and ongoing evolution of wireless broadband technologies and systems, including video distribution platforms and telecommunications network technologies, broadband initiatives (such as fibre-to-the-premises (FTTP), wireless small-cell deployment and 5G wireless); availability of resources and our ability to build out adequate broadband capacity; our reliance on wireless network access agreements, which have facilitated our deployment of mobile technologies; our choice of suppliers and those suppliers' ability to maintain and service their product lines, which could affect the success of upgrades to, and evolution of, technology that we offer; supplier limitations and concentration and market power for products such as network equipment, TELUS TV® and mobile handsets; our expected long-term need to acquire additional spectrum capacity through future spectrum auctions and from third parties to address increasing demand for data, and our ability to utilize spectrum we acquire; deployment and operation of new fixed broadband network technologies at a reasonable cost and the availability and success of new products and services to be rolled out using such network technologies; network reliability and change management; and our deployment of self-learning tools and automation, which may change the way we interact with customers.

  Capital expenditure levels and potential outlays for spectrum licences in auctions or purchases from third parties affect and are affected by: our broadband initiatives, including connecting more homes and businesses directly to fibre; our ongoing deployment of newer mobile technologies, including wireless small cells that can improve coverage and capacity; investments in network technology required to comply with laws and regulations relating to the security of cyber systems, including bans on the products and services of certain vendors; investments in network resiliency and reliability, including measures to address changes in usage resulting from restrictions imposed in response to the COVID-19 pandemic; the allocation of resources to acquisitions and future spectrum auctions held by Innovation, Science and Economic Development Canada (ISED), including the announcement of a second consultation on the auctioning of the 3800 MHz spectrum, which the Minister of Innovation, Science and Industry stated is expected to take place in 2023, and the millimetre wave spectrum auction, which is expected to commence in 2024. Our capital expenditure levels could be impacted if we do not achieve our targeted operational and financial results or if there are changes to our regulatory environment.

- Operational performance and business combination risks including: our reliance on legacy systems and our ability to implement and support new products and services and business operations in a timely manner; our ability to manage the requirements of large enterprise deals; our ability to implement effective change management for system replacements and upgrades, process redesigns and business integrations (such as our ability in a timely manner to successfully complete and integrate acquisitions into our operations and culture, complete divestitures or establish partnerships and realize expected strategic benefits, including those following compliance with any regulatory orders); our ability to identify and manage new risks inherent in new service offerings that we may provide, including as a result of acquisitions, which could result in damage to our brand, our business in the relevant area or as a whole, and additional exposure to litigation or regulatory proceedings; our ability to effectively manage the growth of our infrastructure and integrate new team members; and our reliance on third-party cloud-based computing services to deliver our IT services.
- Security and data protection including risks that malfunctions or unlawful acts could result in unauthorized access or change to, or loss or distribution of, data that may compromise the privacy of individuals and could result in financial loss and harm to our reputation and brand.

  Security threats including intentional damage, unauthorized access or attempted access to our physical assets or our IT systems and network, or those of our customers or vendors, which could prevent us from providing reliable service or result in unauthorized access to our information or that of our customers.

  Business continuity events including: our ability to maintain customer service and operate our network in the event of human error or human-caused threats, such as cyberattacks and equipment failures that could cause various degrees of network outages; technical disruptions and infrastructure breakdowns; supply chain disruptions, delays and rising costs, including as a result of government restrictions or trade actions; natural disaster threats; extreme weather events; epidemics; pandemics (including the COVID-19 pandemic); political instability in certain international locations, including war and other geopolitical developments; information security and privacy breaches, including loss or theft of data; and the completeness and effectiveness of business continuity and disaster recovery plans and responses.
- Our team including: recruitment, retention and appropriate training in a highly competitive industry (including retention of team members leading recent acquisitions in emerging areas of our business), the level of our employee engagement and impact on engagement or other aspects of our business or any unresolved collective agreements including the future outcome of collective bargaining for an agreement with the Telecommunications Workers Union, United Steelworkers Local 1944, which expired at the end of 2021, our ability to maintain our unique culture as we grow, the risk that certain independent contractors in our business could be classified as employees, and the physical and mental health of our team, which are critical to engagement and productivity.
- Environment, health and safety including: loss of employee work time as a result of illness or injury; public concerns related to radio frequency emissions; environmental issues including climate-related risks (such as extreme weather events and other natural hazards), waste and waste recycling, risks relating to fuel systems on our properties, changing government and public expectations regarding environmental matters and our responses; and challenges associated with epidemics or pandemics, including the COVID-19 pandemic and our response to it, which may add to or accentuate these factors.

  Energy use including: our ability to identify, procure and implement solutions to reduce energy consumption and adopt cleaner sources of energy; our ability to identify and make suitable investments in renewable energy, including in the form of virtual power purchase agreements; our ability to continue to realize significant absolute reductions in energy use and the resulting greenhouse gas (GHG) emissions in our operations (in part as a result of programs and initiatives focused on our buildings and network); and other risks associated with achieving our goals to achieve carbon neutrality and reduce our GHG emissions by 2030.
- Real estate matters: including risks associated with our real estate investments, such as financing risks and uncertain future demand, occupancy and rental rates, especially during the COVID-19 pandemic.
- Financing, debt and dividend requirements including: our ability to carry out financing activities, refinance our maturing debt, lower our net debt to EBITDA ratio to our objective range given the cash demands of spectrum auctions, and/or our ability to maintain investment-grade credit ratings. Our business plans and growth could be negatively affected if existing financing is not sufficient to cover our funding requirements.

  Lower than planned free cash flow could constrain our ability to invest in operations, reduce leverage or return capital to shareholders, and could affect our ability to sustain our dividend growth program through 2025 and any further dividend growth programs. This program may be affected by factors such as the competitive environment, fluctuations in the Canadian economy or the global economy, our earnings and free cash flow, our levels of capital expenditures and spectrum licence purchases, acquisitions, the management of our capital structure, regulatory decisions and developments, and business continuity events. Quarterly dividend decisions are subject to assessment and determination by our Board of Directors based on our financial position and outlook. Common Shares may be purchased under our normal course issuer bid (NCIB) when and if we consider it opportunistic, based on our financial position and outlook, and the market price of our Common Shares. There can be no assurance that our dividend growth program or our NCIB will be maintained, unchanged and/or completed.

- Tax Matters including: interpretation of complex domestic and foreign tax laws by the relevant tax authorities that may differ from our interpretations; the timing and character of income and deductions, such as depreciation and operating expenses; tax credits or other attributes; changes in tax laws, including tax rates; tax expenses that are materially different than anticipated, including the taxability of income and deductibility of tax attributes or retroactive application of new legislation; elimination of income tax deferrals through the use of different tax year-ends for operating partnerships and corporate partners; and changes to the interpretation of tax laws, including those resulting from changes to applicable accounting standards or the adoption of more aggressive auditing practices by tax authorities, tax reassessments or adverse court decisions impacting the tax payable by us.
- The economy including: : the state of the economy in Canada, which may be influenced by economic and other developments outside of Canada, including potential outcomes of future policies and actions of foreign governments and the COVID-19 pandemic, as well as public and private sector responses to the pandemic; expectations regarding future interest rates; inflation; unemployment levels; effects of volatility in oil prices; effects of low business spending (such as reducing investments and cost structure); pension investment returns and factors affecting pension benefit obligations, funding and solvency discount rates; fluctuations in exchange rates of the currencies of various countries in which we operate; sovereign credit ratings and effects on the cost of borrowing; the impact of tariffs on trade between Canada and the United States; and global implications of the dynamics of trade relationships among major world economies.

  Ability to successfully implement cost reduction initiatives and realize planned savings, net of restructuring and other costs, without losing customer service focus or negatively affecting business operations. Examples of these initiatives are: our operating efficiency and effectiveness program to drive improvements in financial results; business integrations; business product simplification; business process automation and outsourcing; offshoring and reorganizations; procurement initiatives; and real estate rationalization.
- Litigation and legal matters including: our ability to successfully respond to investigations and regulatory proceedings; our ability to defend against existing and potential claims and lawsuits (including intellectual property infringement claims and class actions based on consumer claims, data, privacy or security breaches and secondary market liability), or to negotiate and exercise indemnity rights or other protections in respect of such claims and lawsuits; and the complexity of legal compliance in domestic and foreign jurisdictions, including compliance with competition, anti-bribery and foreign corrupt practices laws.
- Foreign operations and our ability to successfully manage operations in foreign jurisdictions, including managing risks such as currency fluctuations and exposure to various economic, international trade, political and other risks of doing business globally. See also Section *10.3 - Regulatory matters* of our 2022 annual MD&A and *TELUS International's financial performance which impacts our financial performance*.
- TELUS International's financial performance which impacts our financial performance . Factors that may affect TI 's financial performance are described in TI's public filings available on SEDAR and EDGAR and may include: intense competition from companies offering similar services; attracting and retaining qualified team members to support its operations; TI's ability to grow and maintain profitability if changes in technology or client expectations outpace service offerings and internal tools and processes; TI maintaining its culture as it grows; effects of economic and geopolitical conditions on its clients' businesses and demand for its services; the significant portion of TI's revenue that is dependent on a limited number of large clients; continued consolidation in many of the verticals in which TI offers services resulting in potential client loss; adverse impacts of the COVID-19 pandemic on TI's business and financial results; the adverse impact on TI 's business if certain independent contractors were classified as employees, and the costs associated with defending, settling or resolving any future lawsuits (including demands for arbitration) relating to the independent contractor classification; TI's ability to successfully identify, complete, integrate and realize the benefits of acquisitions and manage associated risks; cyberattacks or unauthorized disclosure resulting in access to sensitive or confidential information and data of its clients or their end customers, which could have a negative impact on its reputation and client confidence; TI's business not developing in ways it currently anticipates due to negative public reaction to offshore outsourcing, proposed legislation or otherwise; ability to meet client expectations regarding its content moderation services being adversely impacted due to factors beyond its control and its content moderation team members suffering adverse emotional or cognitive effects in the course of performing their work; and TI's short history operating as a separate, publicly traded company. TELUS International 's primary functional and reporting currency is the U.S. dollar and the contribution to our consolidated results of positive results in our digitally-led customer experiences – TELUS International (DLCX) segment may be offset by any strengthening of the Canadian dollar (our reporting currency) compared to the U.S. dollar, the European euro, the Philippine peso and the currencies of other countries in which TI operates. The trading price of the subordinate voting shares of TI (TI Subordinate Voting Shares) may be volatile and is likely to fluctuate due to a number of factors beyond its control, including actual or anticipated changes in profitability; general economic, social or political developments; changes in industry conditions; changes in governance regulation; inflation; low trading volume; the general state of the securities markets; and other material events. TI may choose to publicize targets or provide other guidance regarding its business and it may not achieve such targets. Failure to do so could also result in a decline in the trading price of the TI Subordinate Voting Shares. A decline in the trading price of the TI Subordinate Voting Shares due to these or other factors could result in a decrease in the fair value of TI multiple voting shares held by TELUS.

These risks are described in additional detail in *Section 9 General trends, outlook and assumptions, and regulatory developments and proceedings* and *Section 10 Risks and risk management* in the 2022 annual MD&A. Those descriptions are incorporated by reference in this cautionary statement but are not intended to be a complete list of the risks that could affect the Company.

Many of these factors are beyond our control or outside of our current expectations or knowledge. Additional risks and uncertainties that are not currently known to us or that we currently deem to be immaterial may also have a material adverse effect on our financial position, financial performance, cash flows, business or reputation. Except as otherwise indicated in this document, the forward-looking statements made herein do not reflect the potential impact of any non-recurring or special items or any mergers, acquisitions, dispositions or other business combinations or transactions that may be announced or that may occur after the date of this document.

Readers are cautioned not to place undue reliance on forward-looking statements. Forward-looking statements in this document describe our expectations, and are based on our assumptions, as at the date of this document and are subject to change after this date. Except as required by law, we disclaim any intention or obligation to update or revise any forward-looking statements.

This cautionary statement qualifies all of the forward-looking statements in this Annual Information Form.

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1 As filed on SEDAR on February 9, 2023

Each Section of the Management's Discussion and Analysis for the fiscal year ended December 31, 2022 (2022 annual MD&A), referred to in this Annual Information Form (AIF) is incorporated by reference and filed on SEDAR at sedar.com. For greater certainty, notwithstanding references to TELUS' information circular, consolidated financial statements, sustainability and ESG report and the telus.com website, these documents and website are not incorporated into this AIF. In this AIF, except where otherwise indicated, all references to dollars or $ are to Canadian dollars.

3. CORPORATE STRUCTURE

3.1 Name, address and incorporation

TELUS was incorporated under the *Company Act* (British Columbia) (the B.C. Company Act) on October 26, 1998, under the name BCT.TELUS Communications Inc. (BCT). On January 31, 1999, pursuant to a court-approved plan of arrangement under the *Canada Business Corporations Act* among BCT, BC TELECOM Inc. (BC TELECOM) and the former Alberta-based TELUS Corporation (TC), BCT acquired all of the shares of BC TELECOM and TC in exchange for common shares, and non-voting shares of BCT and BC TELECOM were dissolved. On May 3, 2000, BCT changed its name to TELUS Corporation and in February 2005, the Company transitioned under the *Business Corporations Act* (British Columbia), successor to the B.C. Company Act. On February 4, 2013, in accordance with the terms of a court approved plan of arrangement under the *Business Corporations Act* (British Columbia), TELUS exchanged all of its issued and outstanding Non-Voting Shares into Common Shares on a one-for-one basis. On April 16, 2013, TELUS subdivided its Common Shares on a two-for-one basis. On March 17, 2020, TELUS subdivided its issued and outstanding Common Shares on a two-for-one basis.

TELUS maintains its registered office at Floor 7, 510 West Georgia Street, Vancouver, British Columbia (B.C.) and its executive office at Floor 23, 510 West Georgia Street, Vancouver, B.C.

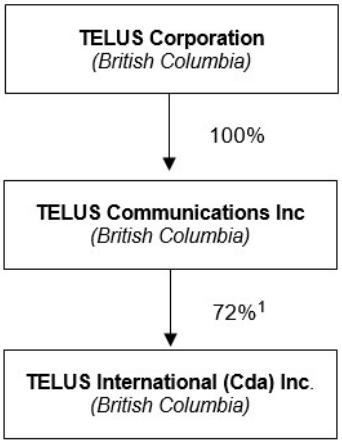
3.2 Intercorporate relationships and TELUS subsidiaries

TELUS' mobile and fixed telecommunications businesses are primarily operated through TELUS Communications Inc (TCI). TELUS International (Cda) Inc. (TELUS International or TI) is a digital customer experience innovator that designs, builds and delivers next-generation solutions, including artificial intelligence and content moderation, for global and disruptive brands, supporting their clients' digital transformation journeys and enabling clients to swiftly embrace next-generation digital technologies to deliver better business outcomes.

In February 2021, TELUS International made an initial public offering (IPO) of subordinate voting shares (TI Subordinate Voting Shares); both TELUS Corporation and a TELUS International non-controlling shareholder individually also offered TI Subordinate Voting Shares in conjunction with the IPO.

In the year ended December 31, 2022, TCI and TI were the only subsidiaries that owned assets constituting more than 10% of the consolidated assets of TELUS and that generated sales and operating revenues that exceeded 10% of the consolidated sales and operating revenues of TELUS. In addition, all of the assets, sales and operating revenues of TELUS' other subsidiaries (other than

TCI and TI), together did not exceed 20% of TELUS ' total consolidated assets or 20% of TELUS ' total consolidated sales and operating revenues as at December 31, 2022.



1 As of December 31, 2022, TELUS Communications Inc. retained, directly and indirectly, approximately 72% of the combined voting interest attached to all issued and outstanding shares in TI.

4. GENERAL DEVELOPMENT OF THE BUSINESS

4.1 Three-year history

During the three-year period ended on December 31, 2022, we continued to advance our national growth strategy, guided by our six strategic imperatives.

For a review of the events and conditions that influenced our general development during 2022, and how our business has continued to evolve, please see *Section 1.2 - The environment in which we operate*, *Section 2.2 - Strategic imperatives*, as well as progress on our corporate priorities in *Section 3 - Corporate priorities* and *Section 5 – Discussion of operations* of our 2022 annual MD&A which sections are hereby incorporated by reference. This AIF also incorporates by reference *Section 11 - Definitions and reconciliations* of our 2022 annual MD&A.

The following discussion relates to 2020 and 2021 events and conditions.

Strategic imperative: Building national capabilities across data, IP, voice and wireless

We were recognized with various accolades from independent global analytics company Opensignal throughout 2020.

- In the *Mobile Network Experience Canada* report released in February 2020, we were recognized as being number one for Video Experience, Download Speed Experience, Upload Speed Experience, Latency Experience and 4G Availability, and we tied for number one for Voice App Experience. Additionally, according to the *Mobile Experience during the COVID-19 pandemic: 4G Download Speed* report issued on April 8, 2020, Canada 's speeds held up extremely well under the demands of the COVID-19 pandemic.
- In the report entitled *The State of Mobile Network Experience 2020: One Year into the 5G Era* , released in May 2020, Canada tied with South Korea for the fastest Download Speed Experience in the world and Canada continued to have the fastest Download Speed Experience among the G7 countries.

- According to the report entitled *State of Rural Canada's Mobile Network Experience*, dated May 2020, we were recognized as having the fastest network in rural Canada. If Canada's rural networks were categorized as a stand-alone country, rural Canada would rank second only to Japan among the G7 countries, which is notable given Canada's vast geography and population dispersion.
- In the *Mobile Network Experience: Canada Report (August 2020)*, we won the top spot in four awards (Download Speed Experience, Upload Speed Experience, Video Experience and Voice App Experience), and tied for first in two awards (Games Experience and 4G Coverage Experience). Our speed in the Download Speed Experience category was 72.7 Mbps, which is 5.2 Mbps faster than the second place finisher. This Opensignal recognition for fastest download speed experience marked our seventh consecutive win in this category since January 2017.
- The Global Mobile Network Experience Awards 2020 (September 2020) report recognized us as having the world 's fastest network. We were the global winner for Download Speed Experience as our 4G LTE download speeds achieved a score of 75.8 Mbps and won the highest average overall download speeds in the world. The second fastest country in the world was South Korea's average of 59 Mbps on their 5G networks, which were launched nationally in 2019.

In February 2020, we were named the Best Gaming Internet Service Provider (ISP) for Canada 2020 according to the U.S.-based PCMag Gaming Quality Index. Additionally, in the PCMag report entitled *The Fastest ISPs of 2020: Canada* released in June 2020, we were ranked as the fastest ISP in Canada among major ISPs.

In 2020, we won two Speedtest Awards from U.S.-based Ookla for Canada 's Fastest Mobile Network and Canada 's Best Mobile Coverage.

In Canada-based Tutela's report entitled *Canada: State of Mobile Networks April 2020*, TELUS was awarded three of the national awards for Core Consistent Quality, Download Throughput and Latency, and tied for Excellent Consistent Quality, based on data from September 1, 2019 to February 29, 2020. Additionally, in Tutela's report *Canada: Mobile Experience Report June 2020*, based on data from March 1 to May 31, 2020, our wireless network was rated as best in consistent quality, lowest latency and fastest download speeds.

In February 2020, we announced that we had succeeded in bringing wireless connectivity to every community in B.C. with a population of 1,000 people or more. This significant milestone aligns with the federal government's rural connectivity goals.

In June 2020, we launched TELUS PureFibre 1.5 Gigabit Internet with up to 1,500 Mbps download and 940 Mbps upload speeds for homes and businesses in B.C. and Alberta.

Building on our November 2019 announcement that we had provided several communities in Quebec 's Lower North Shore region with access to high-speed internet and wireless phone services for the first time, we continued this deployment in June 2020 to the communities of Kegaska and La Romaine.

In September 2020, along with the Government of Canada, we announced a $15 million investment for the deployment of a submarine fibre-optic cable between Sept-Îles and the Gaspésie region, which will improve the reliability and security of telecommunications services in Quebec's North Shore region, ensuring we keep Canadians connected and reach as many rural Canadians as we can.

In September 2020, we announced that we were expanding our high-speed internet and wireless services to reach an additional 25,000 homes and businesses in 45 remote, low-density communities in the Quebec City region and in Eastern Quebec by early 2021, bridging the digital divide in remote communities.

Our 2020 Indigenous Connectivity Report, released in November 2020, highlighted the transformative benefits of connectivity that have resulted from partnerships between us and Indigenous communities throughout B.C. In partnership with Indigenous governments, we have brought high-speed internet to approximately 18,500 premises across 56 Indigenous communities (87 Indigenous Lands) across our footprint.

We were recognized with various accolades from Opensignal throughout 2021.

- In the *Mobile Network Experience Canada* report released in February 2021, we were recognized as being number one for Video Experience, Voice App Experience, Download Speed Experience and Upload Speed Experience, and we tied for number one in 4G Availability, 4G Coverage Experience and Games Experience. This achievement marked the ninth consecutive time an aspect of our mobile network, including download speed experience, has earned top spot from Opensignal.
- In the *Canada 5G User Experience Report* released in April 2021, we tied for first in 5G Download Speed, 5G Video Experience, 5G Upload Speed, 5G Availability, 5G Voice App Experience and 5G Reach.
- In *The State of Group Video Calling Experience – North and Latin America* report released in June 2021, we were the joint winner for Group Video Calling Experience in Canada. As well, Canada ranked third out of 19 countries and territories in North and Latin America.
- In the *Mobile Network Experience: Canada Report* (August 2021), we earned the top spot in six of seven categories, won top spot in four awards (Video Experience, Voice App Experience, Download Speed Experience and Upload Speed Experience), and tied for first in two awards (Games Experience and 4G Coverage Experience). Our speed in the Download Speed Experience category was 73.9 Mbps, which was 5.8% faster than the second place finisher and 28.6% faster than the third place finisher.
- In the *Canada 5G Experience Report* released in August 2021, we tied for first in 5G Video Experience, 5G Download Speed and 5G Upload Speed.

In 2021, we won two Speedtest Awards from U.S.-based Ookla for Canada 's Fastest Mobile Network and Canada 's Best Mobile Coverage.

In Canada-based Tutela's report entitled *Canada: State of Mobile Experience March 2021*, we were awarded two of the national awards for Excellent Consistent Quality and Core Consistent Quality, and tied for Download Throughput and Coverage, based on data from September 1, 2020 to February 28, 2021. Tutela also named us the best mobile experience provider in Canada.

In U.S.-based PCMag's report *The Fastest ISPs of 2021: Canada*, released in June 2021, we were ranked as the fastest ISP in Canada among major ISPs for the second consecutive year. The report also noted that we expanded the gap between our speeds and those of our peers by a wider margin.

In February 2021, we announced the completed deployment of TELUS 4G LTE technology in 14 isolated communities in Quebec's Lower North Shore region, nearly one year ahead of the targeted completion date. For the first time ever, the region 's 2,000 households have access to high-speed internet and mobile phone service, and can browse the internet at speeds similar to those living in urban areas.

In March 2021, we announced a five-year partnership with the University of Alberta (U of A) to establish a 5G Living Lab at the U of A campus to advance research and development of innovative technologies. The $15 million investment will enhance U of A's innovation and commercialization capacity in areas of strength, starting with precision agriculture and autonomous vehicle systems.

In June 2021, in partnership with the Kanata North Business Association and Canada 's Centre of Excellence in Next Generation Networks, we announced the launch of the 5G Innovation Zone in Ottawa's Hub350. This innovation hub is designed to leverage emerging technology advancements, including edge computing, network slicing and IoT commercialization, to tackle real-world challenges. These technologies are foundational to unleash the potential of 5G and the TELUS innovation zone is expected to help realize both economic and societal value from these capabilities.

In December 2021, we expanded our strategic relationship with IBM by deploying a Canada-wide 5G edge computing platform to enable enterprises across multiple industries to accelerate innovative solutions that deliver new value to their clients and operations.

Our investments to deploy our PureFibre technology have brought fibre-optic connectivity further into our infrastructure and directly to homes and businesses. At the end of 2021, over 2.7 million homes and businesses in communities across B.C., Alberta and Quebec had access to ultra-fast, symmetrical internet speeds of 150 Mbps up to 1 Gbps, and approximately 1.3 million premises in B.C. and Alberta had access to symmetrical internet speeds of up to 2.5 Gbps with TELUS PureFibre. Recognizing the need for highly

reliable connectivity with low latency throughput to support emerging services such as virtualized networks and IoT applications, we have also begun rolling out new equipment for enhanced speeds and services.

Strategic imperative: Providing integrated solutions that differentiate TELUS from our competitors

Throughout 2021, we continued to invest in our leading-edge broadband technology, which has enabled the success of our internet, Optik TV and Pik TV offerings and business services, as well as our mobility solutions, and helped allow us to deploy our 5G technology in 2020.

- Our 4G LTE infrastructure covered 99% of Canada ’s population at December 31, 2021 and December 31, 2020.
- Over 2.7 million households and businesses in B.C., Alberta and Eastern Quebec were connected with fibre-optic cable, which provided these premises with immediate access to our fibre-optic infrastructure. This was up from approximately 2.5 million households and businesses at December 31, 2020.
- Our 5G network, launched in the second quarter of 2020, connected over 26.2 million Canadians, representing 70% of the population at December 31, 2021.

In January 2020, we acquired a 28% basic equity interest in Miovision Technologies Incorporated (Miovision), with a view to advancing our Internet of Things (IoT) and smart cities strategy. Miovision is a developer of intelligent mobility systems and traffic management solutions for municipalities worldwide.

In September 2020, we officially unveiled GoCo, simplifying access to robust and flexible business communications technologies for Canadian businesses. Combining the collective strengths and expertise of bluArc, BroadConnect Canada, Infra-Solutions, Netrium, Radiant and Ubity (all previously acquired by TELUS), GoCo provides businesses with simple and scalable solutions for unified communications, managed connectivity and network security.

In February 2021, we launched TELUS Global Connect, enabling our customers to customize and manage IoT device connectivity on cellular networks around the globe. The launch of TELUS Global Connect is part of a growing relationship between TELUS and Eseye, a pioneer of IoT connectivity management solutions, providing businesses with seamless cellular IoT connectivity to 700 mobile networks across 190 countries.

In June 2021, we launched PureFibre X, with upload and download speeds of 2.5 Gbps. PureFibre X plans include the latest Wi-Fi 6, enabling better quality connectivity and connections throughout the home. By leveraging Wi-Fi 6 technology with our new PureFibre X, we can provide households with nearly limitless connectivity, enabling simultaneous 4K streaming, video conferencing, web surfing, gaming, smart home automation and smart home security.

In July 2021, we announced the launch of the TELUS Managed Cloud Security service, which supports an integrated cybersecurity strategy with unified controls and complete visibility across the customers’ infrastructure. Built in collaboration with cybersecurity leader Palo Alto Networks, TELUS Managed Cloud Security offers a comprehensive way to secure data wherever customers do business.

In September 2021, we announced a multi-year agreement with General Motors Canada (GM) that will connect GM ’s next-generation vehicles to our 5G network. We are collaborating with GM to enable high-performance wireless network capabilities that will meet the unique needs of an all-electric and autonomous vehicle future. The first GM vehicles with built-in connectivity to our 4G-LTE and 5G network are expected to be introduced with the 2025 model year.

Strategic imperative: Partnering, acquiring and divesting to accelerate the implementation of our strategy and focus our resources on core business

On January 31, 2020, TELUS International (Cda) Inc. completed the acquisition of 100% of TINE for approximately $1.3 billion (€915 million), less debt assumed. TINE is a provider of higher-value-added business services with a focus on customer relationship management and content moderation through 28 languages. TINE offers its services across 11 European countries at the time of the acquisition and partners with industry-leading global brands primarily from fast-growing technology, media and telecommunications, retail, and travel and hospitality sectors.

On July 1, 2020, we acquired 100% of Mobile Klinik, a storefront wireless device repair and sales business complementary to our existing wireless lines of business. The investment was made with a view to growing our wireless business.

On November 12, 2020, we announced TELUS Agriculture (now TELUS Agriculture & Consumer Goods), which is dedicated to providing innovative solutions to support the agriculture and related industry with connected technology. At launch, one of our acquired companies was AFS Technologies Inc. (AFS). The acquisition of AFS was completed in the third quarter of 2020. AFS provides trade promotion and supply chain software solutions to consumer packaged goods companies, food distributors and food manufacturers. Other companies acquired over the course of 2019 to 2020 prior to announcement include:

- AGIntegrated – Seamless API integration for agri-businesses (Pennsylvania, U.S.)
- Agrian – Unified management platform for precision, agronomy, sustainability, analytics, and compliance (California, U.S.)
- Decisive Farming – Precision agronomy and farm management expertise (Alberta)
- Farm At Hand – Simplified farm management software (B.C.)
- Feedlot Health Management Solutions – Critical insights and data-based knowledge (Alberta)
- Muddy Boots – Farm-to-food traceability and supply chain management (Ross-on-Wye, United Kingdom)
- TKXS – Custom data and program management (North Carolina, U.S.)

On November 24, 2020, we announced the launch of our TELUS Pollinator Fund for Good, a social impact investment fund created to power ideas in new responsible and sustainable start-up businesses. The fund will invest in early-stage (Seed and Series A) for-profit, purpose-driven companies with exceptional and diverse leadership. These companies' goals must align with our goals and should already have a product or service in market, and demonstrated an ability to grow their customer base and generate revenue.

On December 16, 2020, we acquired 100% of EQ Care, a national virtual healthcare provider offering convenient and confidential bilingual access to doctors and specialists via secure text and video chat from anywhere at any time. This acquisition strengthens our virtual care offerings in Canada.

On December 31, 2020, TI acquired Lionbridge AI, the data annotation business of Lionbridge Technologies, Inc. for approximately $1.2 billion (US$939 million). Lionbridge AI is a global provider of crowd-based training data and annotation platform solutions used in the development of AI algorithms to power machine learning. Lionbridge AI annotates data in text, images, videos and audio in more than 300 languages and dialects for some of the world's largest technology companies in social media, search, retail and mobile.

In the first quarter of 2021, we acquired a digitally enabled central dispensing pharmacy to make the pharmacy experience more personal, convenient and accessible, as well as easier for users to manage.

In July 2021, TELUS Agriculture & Consumer Goods, together with Rabobank, a global food and agriculture bank, acquired Conservis, a company that integrates disparate farm technologies into one streamlined interface to manage the business of farming. Improving on-farm profitability and enabling the efficient sharing of farm data with trusted partners are foundational ingredients to ensure the sustainability and security of our food system. With Rabobank and with the technology available in the Conservis platform, we will be able to make the financial management of farms a more efficient process and unlock new opportunities for our customers across the food value chain.

In July 2021, TI acquired Bangalore-based Playment, a leader in data annotation and computer vision tools and services specializing in 2D and 3D image, video and light detection and ranging (LiDAR). The acquisition followed TI's purchase of Lionbridge AI in December 2020 and further expanded the company's global leadership in scaled data annotation capabilities, enabling greater opportunities to enhance AI systems and provide more complex solutions to technology, large enterprise and existing hyperscaler clients. TI operates this division as TELUS International AI Data Solutions, with a global AI community of over one million annotators and linguists and one of the largest data annotation platforms of its kind globally.

In September 2021, we acquired the assets of Herdtrax Inc., a leading integrated online cattle record management software that allows users to capture data at birth and with every subsequent event through the animal's life. Herdtrax will continue to work to bridge information gaps through an animal's life, providing the ability to track and share attributes to help with management decisions made across the beef industry. Herdtrax was already integrated with Feedlot Health Management Services by TELUS Agriculture, allowing farmers to share information with buyers, helping optimize production efficiency and overall animal health by supporting data-based decision-making for feedlot and calf grower clients.

On September 22, 2021, we acquired 100% ownership of Blacksmith Applications Holdings Inc., a provider of management, optimization and analytics to food, beverage and consumer goods providers. The acquisition was complementary to, and was made with a view to growing, our existing smart data solutions business.

On December 6, 2021, we announced the disposition of our financial solutions business for $500 million. Net proceeds from the transaction were used to support strategic growth investments, including connecting more homes and businesses to our TELUS PureFibre network and advancing our 5G network build and investments to support enhancing new areas of growth, including our offerings to small and medium-sized businesses, as well as in TELUS Health and TELUS Agriculture & Consumer Goods. Proceeds were also used to support debt retirement.

Strategic imperative: Focusing relentlessly on the growth markets of data, IP and wireless

TELUS technology solutions (TTech) service revenues increased by $685 million or 5.9% in 2021. Our main drivers of growth include: (i) increased internet and data service revenues, as well as smart food-chain technology and other fixed data services revenues, driven by higher revenue per customer resulting from internet speed upgrades, subscriber base growth, business acquisitions and expanded services; (ii) growth in our mobile and connected devices subscriber bases; and (iii) growth in health services revenues, as further described below.

TTech fixed data services revenues increased by $482 million or 12.2% in 2021. The increase was driven by: (i) increased internet and data service revenues, reflecting higher revenue per customer resulting from internet speed upgrades, larger allotted data internet rate plans and rate changes, in addition to a 6.2% increase in our internet subscriber base over the 12 months of 2021; (ii) increased revenues from smart food-chain technology, driven by business acquisitions; (iii) higher TV revenues, reflecting subscriber growth of 4.1% over the 12 months of 2021; and (iv) increased revenues from home and business security driven by expanded services and customer growth of 13.7% over the 12 months of 2021. This growth was partly offset by the ongoing decline in legacy data service revenues.

TTech mobile network revenue increased by $178 million or 3.0% in 2021, generated from increases in our mobile subscriber base, including growth of Internet of Things (IoT) connections, in addition to growth in monthly recurring charges reflecting a greater mix of high-value customer additions and selection of higher-tier plans. These impacts were partly offset by lower chargeable data usage revenue as customer continue to adopt larger data allotments in their rate plans, the impact of the competitive environment putting pressure on base rate plan prices, and lower roaming revenues as declines in the first quarter of 2021 exceeded modest roaming recoveries in the latter portion of 2021.

TTech health service revenues increased by $73 million or 16.3% in 2021, driven by: (i) business acquisitions; (ii) increased in-clinic services in our reopened TELUS Health Care Centres, whereas clinics were impacted by mandated lockdowns last year; (iii) higher revenues from the continued adoption of our virtual care solutions; and (iv) growth in health benefits management services with plan members resuming the use of elective health services.

Our digital and customer experience (DLCX) solutions operating revenues increased by $573 million or 33.0% in 2021, attributable in part to growth generated from our acquisitions, particularly within our tech and games clients. The remainder of the growth was organic, coming from growth in services provided to existing clients, as well as new clients added since the prior year.

TELUS Consolidated service revenues increased by $1,258 million or 9.5% in 2021, which exemplified our commitment to a highly differentiated and potent asset mix geared towards high-growth, technology-oriented verticals. In addition, as announced on March 25, 2021, our advanced capital investments in our fibre build and 5G coverage, as well as other capital investments which enable us to support continuing subscriber growth, deliver on our digitization strategy and drive product enhancements, will bolster top-line revenue growth and enhance our strong competitive positioning.

Strategic imperative: Going to market as one team under a common brand, executing a single strategy

Our team works together to implement our top corporate priority: putting customers first, as we strive to consistently deliver exceptional client experiences and become the most recommended company in the markets we serve. The Commission for Complaints for Telecom-television Services (CCTS) annual reports have indicated the successful results of this strategy.

In November 2020, the CCTS issued its annual report for the 12-month period ended July 31, 2020, which determined that TELUS was again the subject of the fewest customer complaints among national carriers and Koodo was again the subject of the fewest complaints among the national flanker brands. TELUS, Koodo and Public Mobile each saw year-over-year reductions in the total customer complaints accepted by the CCTS with improvements of (27.6)%, (9.0)% and (41.4)%, respectively. Total industry complaints decreased year-over-year by 18.8%.

In December 2021, the CCTS issued its annual report for the 12-month period ended July 31, 2021, and TELUS again received the fewest customer complaints among national carriers, while Koodo again received the fewest complaints among national flanker brands. Although total industry complaints accepted by the CCTS increased by 8.6% year-over-year, complaints involving TELUS increased at a lesser rate of 4.7%.

Throughout 2020, we continued to leverage our Connecting for Good programs to support marginalized Canadians through the global pandemic and also expanded program eligibility to support those who need it most.

- We expedited access to our Internet for Good program to kindergarten to grade 12 students in need through partnerships with school boards and principals and expanded the program to include low-income people with disabilities. Over 400,000 vulnerable Canadians were eligible to receive low cost, high-speed internet in B.C., Alberta and Quebec. During 2020, we supported nearly 33,000 Canadians, bringing the number of Canadians benefiting from our Internet for Good program since its launch to close to 72,000 at December 31, 2020.
- In partnership with the Children's Aid Foundation of Canada, we expanded our Mobility for Good program nationally to all youth aging out of foster care. In December 2020, we expanded the program to include low-income seniors across Canada who are receiving the guaranteed income supplement (GIS), providing access to the technology they need to stay connected to loved ones and address feelings of isolation, enjoy their favourite online games and books, and obtain important healthcare resources and information. Including both youth and seniors, we added close to 2,500 Canadians to the program in 2020, providing them with a free smartphone and a free or subsidized wireless plan. Since its inception, more than 6,300 marginalized Canadians have benefited from our Mobility for Good program.
- Through our Mobility for Good COVID-19 Emergency Response program, we distributed 14,200 devices and rate plans to more than 340 organizations. This enabled at-risk individuals to keep in contact with health practitioners and social workers, while helping hospitalized patients and vulnerable seniors stay connected with family. The free rate plans were supported until June 30, 2021.
- We expanded our Health for Good program and launched seven new mobile health clinics in 2020. In 2020, our 11 mobile clinics offered health services to homeless and other marginalized Canadians from coast to coast and supported more than 28,000 patient visits, including assisting in the pandemic response by supporting 12,700 COVID-19 assessments and tests. Since inception in 2014, our Health for Good program has supported over 50,000 patient visits up to December 31, 2020.

We continued to evolve our TELUS Wise program during 2020 to build digital literacy and safety in our connected world.

- More than 90,000 Canadians participated in our online TELUS Wise workshops. These workshops are free of charge and help foster the safe and responsible use of technology in our digital world. Approximately 85% of participants felt more empowered to stay safe online as a result of attending a workshop.
- In line with our commitment to keep Canadians safe online, we launched two new online TELUS Wise workshops, *Empowering you to stay safe in our digital world for adults and Supporting youth in our digital world* for parents. Available at https://telus.com/Wiseworkshops, the first workshop offers important tips about protecting one's online safety and privacy, while the second workshop shares tips and guidance on navigating screen time, gaming, sexting, cyberbullying and helping youth stay safe in our digital world.

In March 2020, the arm's-length TELUS Friendly Future Foundation, together with the TELUS Community Boards, announced a commitment to help build public healthcare capacity throughout the COVID-19 pandemic and beyond, including funding for new technology and equipment, such as ventilators, as well as increased support for food banks, elderly Canadians and mental health programs.

In 2020, we donated $500,000 to a research team from the Vancouver General Hospital and University of British Columbia Hospital Foundation to assist in the search for therapeutic antiviral treatments for COVID-19.

In the first quarter of 2020, we launched our #StayStrongStayConnected video in English and French on our social media handles, intended to help share positive messages and keep citizens connected during the COVID-19 pandemic.

In March 2020, we introduced our TELUS Talks podcast. We produced 49 podcast episodes throughout 2020, including episodes with guests Dr. Bonnie Henry, Dr. Michael Osterholm, Dr. Gabor Maté and Carol Todd. We garnered more than 118,000 listens, helping to support Canadians with information and insights to manage through a most unprecedented year.

For the first time, our annual TELUS Days of Giving became a year-long virtual event in 2020, with TELUS team members, retirees and fellow Canadians volunteering – safely and virtually – to support our local communities. As of December 31, 2020, our TELUS family had participated in 1.2 million safe acts of giving, including more than 1.25 million volunteer hours of service, sewing 150,000 masks and donating 210,000 TELUS-branded masks.

Commencing in the second quarter of 2020, TELUS-branded, non-medical masks were made available in adult and youth sizes to help keep Canadians safe, with all proceeds going to the TELUS Friendly Future Foundation to support COVID-19 pandemic relief efforts. As of December 31, 2020, we had sold 79,000 masks, raising more than $535,000 to support the work of our Foundation.

In 2011, we initiated our first set of long-term energy and greenhouse gas emission reduction goals and surpassed them in early 2019, ahead of our 2020 target. As such, in our 2019 sustainability report issued during the second quarter of 2020, we released our new transformational climate action targets, including having our operations become net carbon neutral by 2030.

In May 2020, we launched our #StandWithOwners program in support of Canadian small businesses through the pandemic, committing in direct revenue, marketing and expert advice to support, promote and celebrate small business owners.

As part of our annual 2020 Kits for Kids program, in 2020 we donated 13,000 backpacks filled with essential school supplies and reusable youth-sized face masks to support a successful return to learning.

On World Mental Health Day in October, 2020, we premiered our latest TELUS Originals documentary, Dark Cloud, which spotlights the stories and life-altering impacts of cyberbullying in Canada. As of the 2020 year-end, we achieved 709,000 documentary views across Optik TV and YouTube. With Canadians spending more time than ever online during the COVID-19 pandemic, from socializing to schooling, this film is relevant for parents, youth and all Canadians, as it shares insights into what causes cyberbullying and how we can stop it.

Throughout 2021, we continued to leverage our Connecting for Good programs to support marginalized Canadians through the global pandemic and also expanded program eligibility to support those who need it most.

- We welcomed close to 12,000 new households to our Internet for Good program in 2021, resulting in 106,000 low income family members, persons with disabilities and youth leaving foster care all benefiting from low-cost internet since the launch of the program in 2016.
- Our Mobility for Good program offers free or subsidized mobile phone rate plans and devices to all youth aging out of foster care and to low-income seniors across Canada receiving the guaranteed income supplement. We added 7,000 youth, seniors and other marginalized Canadians in 2021. Since we launched the program in 2017, more than 28,000 individuals have benefited.
    - In the fourth quarter of 2021, we launched Mobility for Good for Indigenous Women at Risk, a new program that provides free smartphones and data plans to Indigenous women who are at risk of or surviving violence, in partnership with Indigenous organizations in Alberta and B.C.
- We expanded our Tech for Good program nationally, in partnership with March of Dimes Canada, and continued to provide people with disabilities access to personalized one-on-one assessments, customized recommendations, training and support on mobile devices. Up to December 31, 2021, we have supported more than 4,600 Canadians with disabilities who require professional assistance to independently use or control their mobile device through the program and the TELUS Wireless Accessibility Discount.
- Our mobile health clinics, served 14 communities across Canada, supported 35,000 patient visits in 2021, resulting in close to 95,000 cumulative primary care visits since the inception of our Health for Good program in 2019. Most mobile clinics had also directly supported the COVID-19 crisis response, providing COVID-19 assessments since the start of the pandemic, and vaccines in 2021. Up to December 31, 2021, our mobile health clinics have administered more than 9,000 vaccinations.

- We continued to expand our Health for Good program presence with the launch of new clinics throughout the year:
    - In January 2021, we launched a new mobile clinic in Toronto with the Parkdale Queen West Community Health Centre. This clinic provides primary healthcare services for marginalized populations in Toronto's midwest neighbourhoods.
    - In January 2021, we also announced a new partnership and mobile clinic with Kilala Lelum Health Centre. This specially equipped mobile van provides primary healthcare and Indigenous Elder-led cultural care to residents of Vancouver's Downtown Eastside.
    - In May 2021, we enhanced our presence in Victoria, B.C. with the signing of a new partnership agreement with Cool Aid Society, a well-established and highly regarded charity organization that provides primary and mental healthcare, affordable housing and other supports for the homeless in Victoria, Saanich and Langford.
    - In October 2021, we expanded further with the launch of a new mobile clinic in the Niagara Region of Ontario. In collaboration with our partner, REACH Niagara, we are bringing primary care to marginalized and underserved people in the area, including migrant agricultural workers, new immigrants and refugees, while supporting the training of the next generation of healthcare workers.

We continued to help Canadians stay safe in our digital world through our TELUS Wise program in 2021. Over 105,000 Canadians participated in virtual TELUS Wise workshops and events in 2021, bringing our cumulative participation to over 450,000 Canadians since the program launched in 2013.

- Approximately 47,000 youth attendees at our TELUS Be Brave #EndBullying online event. This event was held in support of Pink Shirt Day on February 24, 2021, a day in which citizens were encouraged to wear pink to take a stand against bullying, in partnership with the Calgary Hitmen.
- In the third quarter of 2021, we hosted a Facebook Live streaming event on digital citizenship, with close to 20,000 Canadians participating in the event.
- The launch of TELUS Wise online basics helped those who were new to using technology learn basic, everyday digital literacy skills.

The TELUS Friendly Future Foundation and TELUS Community Boards directed support in 2021 to charitable initiatives helping at-risk youth and other marginalized populations. The Foundation marked its third year in 2021, committing more than $8.7 million in cash donations to 500 charitable organizations. The Foundation has contributed over $25 million in cash donations to our communities since its inception to the end of 2021, supported by the work of our TELUS Community Boards. Since 2005 to 2021, the TELUS Community Boards had invested $91 million in cash donations to 7,800 initiatives, providing resources and support for underserved citizens, especially young people, around the world.

Throughout 2021, the TELUS Pollinator Fund for Good invested nearly $20 million in debt and equity securities of 10 socially responsible and innovative startups, of which 40% were women-led and 50% were led by Indigenous or racialized founders. The Fund was recognized as a Clean50 Top Project for its contributions to clean capitalism in Canada. Canada's Clean50 offers recognition to Canada's leaders in sustainability for their contributions over the prior two years. The Fund was also confirmed as a global finalist for the social impact award in Reuters Events Responsible Business Awards.

In February 2021, we introduced our newest TELUS Resource Group, Reach, to advance diverse representation in decision making and to shine light on systemic issues that disproportionately and uniquely affect the Black community. Together with Reach, we will continue to amplify the voices of marginalized communities by providing resources, offering education, driving action, increasing communication and celebrating the heritage of Black team members, as we reach every team member, ensuring dialogue, partnership and growth.

In April 2021, we became the first national telecommunications company in Canada to set science-based greenhouse gas (GHG) emissions reduction targets approved by the Science Based Targets initiative (SBTi). The SBTi is a partnership between CDP, the United Nations Global Compact, the World Resources Institute and the World Wide Fund for Nature to mobilize companies to set science-based targets and boost their competitive advantage in the transition to a low-carbon economy.

Throughout May 2021, we evolved our 16-year legacy global volunteer movement, TELUS Days of Giving, to TELUS #FriendlyFuture Days. More than 55,000 TELUS employees, retirees, family and friends participated, helping to volunteer 1.3 million hours of giving by our TELUS team during the year.

In May 2021, we invested in the Black Innovation Fund, an early-stage venture fund focused on supporting Black-founded technology and technology-enabled businesses based in Canada. Building on our support of the Ryerson DMZ Black Innovation Program, the Black Innovation Fund will help raise the profile of minority entrepreneurs.

On June 14, 2021, we released our sustainability-linked bond framework, the first of its kind in Canada, that aligns our financing strategy with our ambitious goal of achieving operational net carbon neutrality across all of our global operations by 2030. The framework was developed in accordance with the International Capital Market Association's Sustainability-Linked Bond Principles 2020 (SLBP). Sustainalytics, a leading independent environmental, social and governance (ESG) research, ratings and analytics firm, reviewed the framework and is of the opinion that it aligns with the SLBP. Our 2.85% Sustainability-Linked Notes, Series CAF, which closed on June 28, 2021, were the first series of bonds in Canada offered under the framework.

In June 2021, we renewed our commitment to champion Canadian small businesses through our #StandWithOwners initiative, recognizing that small business owners have needed to pivot and innovate throughout the COVID-19 pandemic. In this second year, we doubled our commitment by investing $1 million to support small businesses with funding, localized advertising and mentorship as they move forward.

In July 2021, we invested in Radicle, a Calgary-based company that has developed a carbon credit platform for buyers and sellers of carbon credits.

In the fall of 2021, we donated 14,000 backpacks that were filled with essential school supplies to local schools across Canada to support students in need. Since 2006 to 2021, our annual Kits for Kids program donated 180,000 backpacks, creating a friendlier future as kids head back to school.

In September 2021, we launched our Reconciliation Commitment, which was developed in partnership with and in support of Indigenous Peoples across the country. Central to our Reconciliation Commitment is the desire to support the diverse needs of Indigenous Peoples in ways they want to be supported by TELUS. In this regard, we are proud to stand in solidarity with residential school survivors and their families through our $8 million commitment toward reconciliation in 2021. This included a $1 million gift to digitize, promote and distribute the Witness Blanket, as well as investments from the TELUS Pollinator Fund for Good, TELUS Community Boards and TELUS Friendly Future Foundation.

In November 2021, we released our 2021 Indigenous Reconciliation and Connectivity Report, an evolution from the annual connectivity report that shares inspiring stories of the transformative benefits that connectivity brings to newly connected Indigenous communities. The 2021 report also included our first-ever Indigenous reconciliation action plan, making us the first technology company in Canada to publicly commit to an Indigenous reconciliation action plan.

In November 2021, we committed $1 million (including $500,000 of in-kind support in health, network and community services) to support British Columbia following the unprecedented weather events and flooding that sent the province into a state of emergency.

Our renewable energy virtual power purchase agreement (VPPA) with the Brooks I Solar facility in Alberta saw production of over 20.5 GWh in 2021.

Strategic imperative: Investing in internal capabilities to build a high-performance culture and efficient operation

Each year, we conduct a Pulsecheck engagement survey to gather confidential team member feedback about TELUS as a place to work in order to measure our progress in creating a high-performance culture. Following each survey, leaders share results with team members and use fair process to build and refine action plans focused on high-priority areas where improvement is required based on Pulsecheck results. In 2020, we achieved an engagement score of 87% (a 3 percentage point increase over 2019) – our highest engagement score achieved to date (tied with 2015) amidst a year like no other given the numerous COVID-19 pandemic impacts. This 2020 result continued to place TELUS within the top 10% of employers worldwide according to our survey provider, Kincentric. In 2021, we achieved an engagement score of 84%, which is an encouraging accomplishment against the backdrop of the highly competitive and dynamic environment in which we work and reinforces the strength of the culture our team members have built together. In 2021, TELUS was the most engaged organization globally compared to organizations of our size and composition according to our survey provider, Kincentric.

5. DESCRIPTION OF BUSINESS

5.1 Who we are

TELUS is a dynamic, world-leading communications technology company, providing a wide range of products and services spanning wireless, data, IP, voice, television, entertainment, video, and security over our award-winning networks. Our social purpose is to leverage our global-leading technology and compassion to drive social change and enable remarkable human outcomes. Our long-standing commitment to putting customers first fuels every aspect of our business, making us a distinct leader in customer service excellence and loyalty.

TELUS Health is a global healthcare leader, which provides employee and family preventative healthcare and wellness solutions. Our TELUS team, along with our 100,000 health professionals, are leveraging the combination of TELUS' strong digital and data analytics capabilities with our unsurpassed client service to dramatically improve remedial, preventative and mental health outcomes for 68 million lives covered, and growing, around the world.

As the largest provider of digital solutions and digital insights of its kind, TELUS Agriculture & Consumer Goods enables efficient and sustainable production from seed to store, helping improve the safety and quality of food and other goods in a way that is traceable to end consumers.

TELUS International is a leading digital customer experience innovator that designs, builds and delivers next-generation solutions, including artificial intelligence and content moderation, for global and disruptive brands across high-growth industry verticals, including tech and games, communications and media and eCommerce and fintech.

In 2022, we generated $18.4 billion in operating revenue and other income and had approximately 18.0 million subscriber connections. This included approximately 9.7 million mobile phone subscribers, 2.5 million connected device subscribers, 2.4 million internet subscribers, 1.3 million TV subscribers, 1.1 million residential voice subscribers, and 1.0 million security subscribers.

(a) Organization

Please see *Section 5 - Discussion of Operations* of our 2022 annual MD&A which is hereby incorporated by reference and describes our reporting segments: TTech; and Digitally-led customer experiences – TELUS International (DLCX).

(b) Our strategy

Please see *Section 2 - Core business and strategy* of our 2022 annual MD&A which is hereby incorporated by reference.

(c) Business overview

Please see *Section 4 - Capabilities* of our 2022 annual MD&A which is hereby incorporated by reference and which describes our principal markets, products and services and our distribution channels.

Our assets and resources, including employees, brand and distribution methods, tangible properties (such as our telecommunications networks and network facilities), intangible properties (such as brand and wireless spectrum licences) and an overview of foreign operations are discussed in *Section 4.2 - Operational resources* in the 2022 annual MD&A.

For revenue and other financial information on the two most recently completed financial years with respect to our mobile and fixed businesses, see *Section 5.4 TELUS technology solutions segment* and for DLCX please see *Section 5.5 Digitally-led customer experiences – TELUS International segment* in the 2022 annual MD&A.

An overview of the Canadian economic environment and the telecommunications industry can be found in Section 1.2 *The environment in which we operate* and Section 9 *General trends, outlook and assumptions, and regulatory developments and proceedings* in the 2022 annual MD&A. Seasonal trends that have impacted us are described in *Section 5.2 Summary of consolidated quarterly results, trends and fourth quarter recap* and in Section 5.4 *TELUS technology solutions segment* in the 2022 annual MD&A.

(d) Competitive environment

Please see *Sections 4.1 - Principal markets addressed and competition* and *10.4 - Competitive environment* of our 2022 annual MD&A which is hereby incorporated by reference.

(e) Corporate social responsibility and environment

We are committed to following sustainable and responsible business practices and to making decisions that balance economic growth with enabling positive social and environmental outcomes. More information about our approach to sustainability and our social purpose can be found in our annual Sustainability and ESG Report at https://www.telus.com/en/social-impact.

(f) Employee relations

Please see *Section 4.2 - Operational resources* of our 2022 annual MD&A which is hereby incorporated by reference.

5.2 Task Force on Climate-related Financial Disclosures: report on climate-related risks and opportunities

We understand there can be direct or indirect financial impacts on our operations from climate-related risks and opportunities and we aim to provide transparency on how these risks and opportunities affect our strategy and operations. We support the Task Force on Climate-related Financial Disclosures (TCFD) and disclose below relevant climate-related information in accordance with the TCFD recommendations published in June 2017. This disclosure is structured into four sections as per TCFD guidance: Governance; Strategy; Risk management; and Metrics and Targets. The disclosure provides a comprehensive view into how we understand and manage the risks and opportunities associated with climate change at TELUS.

(a) Governance

We have a long-standing foundation of sustainability governance which supports our commitment to environmental stewardship and responsible corporate citizenship.

Board oversight of climate-related risks and opportunities

Our Board of Directors (Board) is responsible for the stewardship of the Company, which includes oversight of enterprise risk management. At our quarterly board meetings, our Board reviews reports and engages in discussions on corporate strategies, progress and targets, in addition to emerging risks and opportunities for innovation such as how technology can assist in responding to climate-related extreme weather events.

The Corporate Governance Committee (CGC) of our Board reviews and monitors, on behalf of the Board, the Company 's approach, planning and reporting on sustainability and environmental, social and governance (ESG) matters; and reviews and recommends to the Board for approval the Company's annual sustainability and ESG report and other related disclosures. Our Sustainability and Environment and Enterprise Risk Management teams provide quarterly reports to the CGC. These reports contain pertinent information regarding our environmental and climate-related risks and related compliance activities. The CGC also oversees climate-related opportunities as they arise or are otherwise identified and discussed during quarterly CGC meetings.

Our Board succession planning process involves an ongoing assessment of Board member skills which helps the CGC and the Board identify any gaps in the skills and competencies considered most relevant for the Company. As part of this process, Board members are asked to identify their experience or education as it relates to sustainability, environment and climate risk management.

Management oversight of climate-related risks and opportunities

Our Chief Executive Officer and Executive Team are responsible for the execution of the strategic direction of our sustainability programs, which includes assessing and managing climate-related risk and mitigation as well as identifying climate-related opportunities.

Our Sustainability and Environment Team reports to our Senior Vice President & Treasurer, who is responsible for the development and governance of our sustainability strategy.

The Sustainability and Environment Team seeks to assess climate-related risks and opportunities by integrating sustainability considerations and implementing projects across the business, delivering in-house training and awareness on sustainability, and managing our EMS, which is ISO 14001:2015 certified in Canada. This process includes benchmarking through formal and informal materiality assessments, data and scenario analysis, considering internal and external stakeholder input and reviewing the regulatory environment in which we operate.

As we work to mitigate the climate impacts of our own operations, we also integrate climate considerations throughout our product development and innovation processes across our business including in emerging areas such as TELUS Health and TELUS Agriculture & Consumer Goods. As we enhance our current products and develop new ones, we work to consider relevant climate risks and opportunities to align with our low-carbon future.

Additionally, we link our sustainability performance to compensation through our corporate scorecard, which affects the company-wide performance bonus structure. The social capitalism index within the scorecard contains metrics which measure our performance in reducing greenhouse gas (GHG) emissions as well as social impact metrics. In addition, our Sustainability and Environment team's performance bonus structure is linked more broadly to our 2025 and 2030 environmental goals.

(b) Strategy

Climate-related risks identified over the short, medium, and long-term.

Each year, we identify, and are exposed to, both climate-related physical risks as well as risks associated with transitioning to a low-carbon future. Climate-related physical risks are those resulting from the increasing severity and frequency of extreme weather events, rising global temperatures, and other chronic climate changes, in our operations, our supply chain, and in our communities. We identify transition risks as those related to climate change, including the impact of changes in policy or implementation of lower-emission technology.

Some of the physical and transitional climate risks we have identified that may impact us in the short-term (one to five years), include, but are not limited to: carbon regulation including carbon pricing impacting our operations and value chain; increased energy demand and its environmental and financial impacts; and growing customer and other stakeholder demand for low-carbon solutions.

Some of the physical and transitional climate risks we have identified that may impact us in the medium to long-term (more than five years), include, but are not limited to: direct and indirect supply chain disruptions, including price increases; reliability and resiliency of critical infrastructure; and financial impacts resulting from not achieving climate-related goals such as those included in our Sustainability-Linked Bonds.

Climate-related opportunities identified over the short, medium, and long term.

With world-class networks, a customers first approach and shareholder-friendly initiatives, we aim to improve the lives of Canadians and our communities while providing robust shareholder returns. Our corporate strategy enables us to respond nimbly to opportunities, including those consistent with adapting to rising climate risks and transitioning to a low-carbon economy. Furthermore, our Sustainability and Environment team regularly seeks opportunities to invest in climate technologies, implement trials and seek out new, financially sound opportunities to reduce our GHG impact.

Our business investments connect our country's dispersed population digitally, and as a result, attract customers who are looking to reduce their carbon footprint. In addition, we continue to focus on investments in network optimization, infrastructure upgrades, real estate space reduction and lighting retrofits to drive future savings and absolute energy reductions.

The following are examples of climate-related opportunities that we are currently pursuing:

- We have a corporate-wide goal to effectively procure 100% of our electricity requirements from renewable or low-emitting sources by 2025 and, in an effort to reach that goal, we have signed four VPPAs with wind and solar energy developers in Alberta for over 167 MW of renewable energy capacity.

- We have built a broadband network that enables our customers to live and work in locations of their choosing while minimizing their travel-related environmental footprint and optimizing productivity.
- For over a decade, TELUS Health has been working with health authorities, community partners and stakeholders to build a more sustainable healthcare system leveraging the power of technology. TELUS Health offers healthcare products that allow customers to connect virtually with healthcare practitioners, which improves efficiency of services offered, limits physical travel-related climate impacts, and increases accessibility to prevention and wellness services for those who seek it.
- TELUS Agriculture & Consumer Goods provides innovative solutions to empower a sustainable agriculture industry through technology, securely linking together the food value chain and leveraging data to increase efficiencies, production and yields.
- TELUS continues to develop new LEED certified buildings that incorporate world-leading technology, energy efficient and sustainable solutions and contemporary workstyles. We recently opened the doors to TELUS Sky, our latest LEED platinum building in downtown Calgary.
- We continue to expand our Work Styles program that allows over 90% of our domestic team members to work from home, reducing the emissions associated with commuting.

In addition to enhancing the opportunities stated above, we will continue to develop low-carbon and climate friendly solutions for our customers and communities, enabled by our networks, in the medium to long term (over five years). For example, through our TELUS Ventures and Pollinator for Good funds, we are investing in responsible startups driving social and environmental change to make the world a better place.

Scenario Analysis

We conduct scenario analyses to better understand the resilience of our corporate strategy in different climate scenarios. Performing and disclosing the outcome of the various scenarios help us determine how our operations can prepare and help mitigate changes in climate, as new climate regulations, technologies and other impacts emerge and evolve. At the same time, these analyses also help us identify new opportunities for our business and help us inform our stakeholders about how our organization is positioning itself in light of these risks and opportunities.

In 2022, we undertook a comprehensive qualitative scenario analysis assessment of our direct operations (excludes our upstream and downstream activities) with an independent third party to better align with TCFD recommendations. We broke down the assessment between transitional climate risks and opportunities assessment and physical climate risks assessment.

1) *Transitional climate risks and opportunities assessment*
The following steps were taken to short-list, prioritize and assess the transition risks and opportunities to which we may be susceptible in different warming scenarios in the future:

1) Longlist identification – First, we collated a comprehensive list of risks and opportunities based on our business operations, peer analysis, internal knowledge capacity and emerging trends. This resulted in a long-list of 21 transition risks and opportunities which were assessed to delineate potential impacts (financial, reputational and market) on our business.

2) Prioritization – Those 21 transition risks and opportunities were assessed against three parameters:

   (i) Likelihood – the probability of each risk or opportunity occurring
   - Occurring now or is almost certain to occur
     - Risk is inherent to the industry due to external influences
     - Precise understanding of where and when event would occur
   - Likely to occur in the next 18 months
     - High level understanding of where and when event would occur
   - Unlikely to occur within the next 18 months
     - High level understanding of where and when event would occur

   (ii) Consequences – the magnitude of the impact if the event were to happen
   - High financial impact
     - Risk: potential regulatory fines or prolonged provincial media coverage affecting brand/reputation
     - Opportunity: high positive impact on brand/reputation

- Medium financial impact
  - Risk: potential external reporting requirements, breach of contract or regional media coverage affecting brand/reputation
  - Opportunity: medium positive impact on brand/reputation
- Low financial impact
  - Risk: potential internal reporting requirements, breach of company policy or local media coverage affecting brand/reputation
  - Opportunity: low positive impact on brand/reputation

(iii) Velocity – the speed of the impact.

This resulted in an overall risk rating for each of the 21 transition risks and opportunities that was broadly classified into low, medium and high to indicate materiality. These estimates are adjusted for inflation throughout.

3) Initial quantitative assessment – Next, we evaluated the quantitative impact of one of the identified risks noted above, which was carbon pricing, since data was readily available for this risk. This was assessed in the two climate scenarios and time horizons and fed into the qualitative assessment. The climate scenarios chosen for this step were the Bank of Canada scenarios which outline the risk outcomes that would impact the Canadian economy and financial system and were most applicable to us given that our operations are mostly in Canada. The Bank of Canada derived their country-level scenarios from the Network for Greening the Financial System (NGFS) models, and ensured they are well-aligned with NGFS scenarios. The Bank of Canada's 2019 Policies and Net Zero 2050 (1.5 ° Celsius) were considered to provide the widest range of possible climate outcomes. We then updated the 2019 Policies scenario to include carbon pricing data from the Pan Canadian Approach to Carbon Pollution Pricing, giving us the business as usual (BAU) policies scenario.

   These are the parameters that were used to conduct the quantitative assessment.

Select credible transition pathways	Climate model	Transition pathways	Description	Rationale
	Bank of Canada	2019 Policies	A scenario consistent with 2019 climate policies which are already in place or announced.	Establish the baseline to quantify transition risks from the changing carbon in dollar amount.
		Net-zero 2050 (1.5° Celsius)	An ambitious immediate policy action scenario to limit average global warming to 1.5° Celsius that includes current net-zero commitments by some countries.	Enable the exploration of an ambitious transition scenario piloted by the Bank of Canada and Office of the Superintendent of Financial Institutions to assess climate transition risk.

The financial impact of carbon pricing risk was estimated by multiplying the projected carbon price with projected amount of emissions for the two scenarios. Carbon price in the Net Zero scenario is projected to be much higher than the current policies scenario. By meeting our emission reduction targets, we may be able to reduce our carbon price risk significantly in both the short and long term. The results of this analysis allowed us to determine the likelihood and consequence ratings in the qualitative assessment.

4) Qualitative assessment: The short-listed risks and opportunities (from step 2 above) were assessed against the two climate scenarios to evaluate their overall impact on our operations in the medium-term (2030) and long-term (2050). The Bank of Canada climate scenarios BAU policies; Net Zero 1.5° Celsius were used for the qualitative assessment.
    - The two climate scenarios were chosen to provide appropriate diversity to future outcomes.
    - Key parameters such as policy changes, technology developments and availability, energy mix, commodity market dynamics, etc. were discerned to help define development pathways and trends over the assessed timeframe.
    - The trends were studied against the shortlist to evaluate how they are likely to evolve in the future and the implications for us.

Please note that these scenarios are a tool to envision a future of two divergent climate scenarios, so that we can outline plausible risks and opportunities, and plan for resilience. They are not future predictions.

2030 Risks					
Sub-Category	Description	Scenario	Likelihood	Consequence	Risk Rating
Policy and legal	Increased and/or uncertain carbon prices, including the indirect impact of carbon costs	BAU policies	This scenario includes the Pan Canadian Approach to Carbon Pollution Pricing, therefore the likelihood is high.	The price used in the Pan-Canadian Approach to Carbon Pollution Pricing for 2030 is $170 per tonne. If our emissions stay constant, a medium financial impact could be expected. However, the financial impact of the carbon price would be indirect through increased costs of goods and services as we are not directly regulated by the pricing mechanism.	Medium
		Net Zero	This scenario shows that the likelihood of a carbon price being implemented is high.	The estimated carbon price from the net zero scenario is higher than in the BAU policies scenario, however our analysis showed that this could still result in a medium financial impact. As noted earlier, the financial impact of the carbon price would be indirect as we are not directly regulated by the pricing mechanism.	Medium
Markets	Price and supply shocks in the energy and commodities markets	BAU policies	There is a high likelihood of oil, gas and electricity increasing in price due to the continued demand for conventional fuels and commodities influenced by limited-supply-growing-demand dynamics and limited incentives to more sustainable alternatives.	A medium financial impact could be expected as fuel prices are expected to increase, however, this price rise is mitigated by the VPPAs secured and efficiency measures implemented by us.	Medium
		Net Zero	There is a high likelihood of the energy and commodities market being affected by economic headwinds from	A medium financial impact could be expected (greater than in the BAU policies scenario), which could be a result of fuel	Medium

			addressing carbon emissions (carbon tax). Market prices may also evolve on the back of policies and growing investments in low carbon technology.	supply volatility or high carbon tax outlay, increasing fuel prices. However, this price rise is mitigated by our VPPAs and efficiency measures.	
Reputation	Diminished reputation with investors as a result of lower ESG ratings	BAU policies	Likelihood is medium as rating frameworks exist in the market which intend to highlight and acknowledge best ESG management practices and are unlikely to significantly increase in the short-term.	Although we already have good reporting practices, the increase in expectations could result in a low level of additional costs and impact to reputation.	Low
		Net Zero			Low

2030 Opportunities					
Markets	Investment in renewable energy	BAU policies	Significant market drivers, such as policies and regulations emerge to support renewable adoption. Meanwhile electricity prices are expected to increase moderately, therefore the likelihood of having positive impacts from entering our VPPAs at a low initial price is considered medium.	By entering into the market at an early stage, we have been able to enter into VPPAs at a low price. As electricity prices are projected to continue increasing moderately over the short-term, we may be able to maintain positive cash flow from the VPPA price change, potentially resulting in a medium financial impact. However, further modelling would be required to fully understand the extent of this opportunity.	Medium
		Net Zero	Policies are expected to support renewable energy uptake. There is a high likelihood that the cost of renewable power could increase mildly in the short term as supply starts to catch up with demand and electricity prices are expected to increase more than the BAU scenario as more demand is expected.	By entering into the market at an early stage, we have been able to enter into VPPAs at a low price. As electricity prices are projected to continue increasing moderately over the short term, we may be able to maintain positive cash flow from the VPPA price delta, potentially resulting in a medium financial impact. In this scenario, demand for VPPAs is likely to be higher, and therefore the price delta would be lower. However, further modelling would be required to fully understand the extent of this opportunity.	Medium
Markets	Shifting consumer preferences for our services as a result of our good reputation in climate performance	BAU policies	Consumer ESG awareness is expected to increase, as governments and markets continue to push for climate action. However, in the short term it is likely that consumer preferences would be more	We have the opportunity to meet customers' demand, which could positively impact market share, bottom-line, and market perception. However, this may result in a low increase in consumer base,	Low
		Net Zero			Low

			focused on receiving low cost, high value services and products, therefore the likelihood of this opportunity occurring is medium.	revenues and market share in the short term.	

2050 Risks					
Sub-Category	Description	Scenario	Likelihood	Consequence	Risk Rating
Policy and legal	Increased and/or uncertain carbon prices, including the indirect impact of carbon costs	BAU policies	The BAU policies scenario includes the Pan Canadian Approach to Carbon Pollution Pricing. Although it has not been specified whether there will be a carbon price after 2030, we assume that there will be and the impact will be high.	The price used ($170 per tonne) is the one included in the Pan-Canadian Approach to Carbon Pollution Pricing for 2030 and in our analysis we have kept this value consistent until 2050. If our emissions stay constant, a medium financial impact could be expected. However, the financial impact of the carbon price would be indirect through increased costs of goods and services as we are not directly regulated by the pricing mechanism.	Medium
		Net Zero	The likelihood of there being a carbon price in Canada under the net zero scenario is still high in 2050 as a price is still included in the model.	Between 2030 and 2050, carbon prices are estimated to double, which would have a high magnitude financial impact. As noted earlier, the financial impact of the carbon price would be indirect as we are not directly regulated by the pricing mechanism.	High

Markets	Price and supply shocks in the energy and commodities markets	BAU policies	There is a high likelihood of the energy and commodities market (particularly oil and gas) increasing in price. However, the cost of electricity is likely to decrease from 2030 and going forward, according to the model in both scenarios.	An overall lower financial impact could be expected as a result of the projected decrease in electricity costs in this scenario, given our consumption. This decrease is slightly offset by the projected increase in the cost of oil and gas in 2050.	Low
		Net Zero	There is a medium likelihood of the energy and commodities market being affected by decreased demand for fuels, resulting in lower fuel prices for us, as well as decreased cost for electricity.	A low financial impact could be expected driven by the projected decrease in electricity costs, given our consumption.	Low
Reputation	Diminished reputation with investors as a result of lower ESG ratings	BAU policies	Likelihood is medium given rating frameworks exist in the market which intend to highlight and acknowledge best ESG management practices and are unlikely to significantly increase in the long-term.	Although we already have good reporting practices, the increase in expectations from investors and stakeholders could result in additional costs and a medium impact to reputation.	Medium
		Net Zero	Investors are highly likely to put more weight on these ratings in the future to evaluate their portfolio risk and opportunities. Additionally, other stakeholders can utilize them to analyze engagement opportunities.	Although we already have good reporting practices, the expectations of investors and stakeholders could increase in this scenario, resulting in a medium financial and reputational impact.	Medium
2050 Opportunities					
Markets	Investment in renewable energy	BAU policies	The rising costs of renewable power are expected to slow down due to more market and policy support for renewable energy uptake. Therefore, the likelihood of having a positive return from entering VPPAs early is considered high.	As electricity prices are expected to decrease in the long term, the delta between newly signed VPPAs and market electricity prices may decline over time, therefore the positive financial impact is expected to decrease accordingly, but likely having low impact.	Low
		Net Zero	Rapid electrification of industries coupled with the federal net zero commitments results in renewable energy or low carbon power as the market norm by 2050. This means electricity prices will come down lower than the BAU scenario towards 2050 with medium likelihood.	As electricity prices are projected to come down in the long term in this scenario, we may experience lower positive cash flow as the change in the retail price of energy and price within the VPPA may reduce. New VPPA contracts signed near 2050 may lead to higher positive cash flow due to stabilized/decreased technology costs with cumulative impact likely low.	Low

Markets	Shifting consumer preferences for our services as a result of our good reputation in climate performance	BAU policies	With medium likelihood, consumer awareness and business scrutiny is likely to evolve in the long-term. However, this scrutiny would primarily be addressed by delivering consistent business performance and quality in addition to maintaining a focus on climate performance.	We have the opportunity to meet customers' demand, which could positively impact market share, bottom-line, and market perception, likely resulting in medium impact.	Medium
		Net Zero	It is highly likely that stakeholder expectations and awareness will be centered around achieving 2050 net zero commitments and therefore consumer preferences are likely to align significantly towards sustainability, better management and accountability, and transparent business practices.	A positive impact on our reputation and brand would occur as a result of good company sustainability and climate performance. An increase in consumer base and revenues is also possible, which could result in a moderate increase in revenues.	Medium

2) *Physical climate risk assessment*

The scenario analysis also involved a physical climate risk assessment which was focused on our assets. The scope of this assessment involved the determination of what to include as our key assets. The starting point was an assessment of over 21,000 assets, along with information on whether that asset was leased or owned, its location (address and coordinates), property usage code and square footage. Then the list was reduced by asset category and certain assets were assessed for criticality by considering a number of different factors, e.g. whether it's a 5G wireless core site. Next, we assessed asset value, such as the value of the building/asset, the value of the contents and the potential business interruption value. As a result of this scoping, 149 assets were included in the physical climate risk assessment, which included all of our critical sites.

Our approach to the quantitative assessment can be broken down into our considering the likelihood of the risk occurring, the consequence of the impact, and using the results from these two assessments to qualitatively assess the relative impact magnitude:

Likelihood: The likelihood of a risk occurring was assessed using the S&P TruCost Physical Risk data. This data provides a physical risk point-in-time exposure score to climate hazards relative to global conditions, independent of the characteristics of the asset present at a given location. This data was developed in order to provide companies with a data set to help understand physical risk exposure at the portfolio level, and to prioritize the assets within the portfolio.

- Inputs:
  - Asset location data
  - Climate scenario data which provides an exposure score

Consequence: relates back to the importance of the asset and the level of impact that would be felt if the asset was put out of commission.

- Inputs:
  - Asset value and cost of business interruption
  - Hazard type

Resulting risk rating: comprised of the likelihood of the risks occurring and the resulting consequences of the event

- Output: A qualitative risk score for each asset for each hazard (very low, low, medium, high or very high)

S&P TruCost Physical Risk Data has four built-in scenarios, aligning with different levels of warming. These scenarios are built using the combined Shared Socio-economic Pathways (SSPs) and Representative Concentration Pathways (RCPs) pathways that the Intergovernmental Panel on Climate Change (IPCC) used in the latest Sixth Assessment Report (AR6). For this assessment we used SSP1 - 2.6 and SSP5 - 8.5 to provide us with a low and high climate change scenario.

- Low Climate Change Scenario (SSP1 - 2.6): Aggressive mitigation scenario in which total greenhouse gas emission reduce to net zero by 2050, resulting in global average temperatures rising by 1.3 to 2.4 ° Celsius by 2100, consistent with the goals of the Paris Agreement.
- High Climate Change Scenario (SSP5 - 8.5): Low mitigation scenario in which total greenhouse gas emissions triple by 2075 and global average temperatures rise by 3.3 to 5.7 ° Celsius by 2100.

The following table shows the results of our physical climate risk assessment and indicates that flooding and extreme heat are high priority hazards for us. In addition, wildfires are also a higher risk category as it rated with a higher “low” score than the other hazards that rated low.

	Likelihood					Overall Risk Rating			
Hazard	Low Climate Change Scenario		High Climate Change Scenario		Consequence Rating	Low Climate Change Scenario		High Climate Change Scenario	
	2030	2050	2030	2050		2030	2050	2030	2050
Extreme Cold	Medium	Medium	Medium	Medium	Very Low	Very Low	Very Low	Very Low	Very Low
Flood	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Extreme Heat	Medium	Medium	Medium	High	Medium	Medium	Medium	Medium	Medium
Sea Level Rise	Very Low	Very Low	Very Low	Very Low	Medium	Very Low	Very Low	Very Low	Very Low
Water Stress	Low	Low	Low	Low	Very Low	Very Low	Very Low	Very Low	Very Low
Wildfire	Very Low	Low	Very Low	Low	Medium	Very Low	Low	Very Low	Low
Tropical Cyclone	Very Low	Very Low	Very Low	Very Low	Medium	Very Low	Very Low	Very Low	Very Low

(c) Risk management

Process for identifying climate-related risk

Effective risk management supports our foundation for sustainability leadership. We define business risk as the degree of exposure associated with the achievement of key strategic objectives in relation to the effectiveness and efficiency of operations; reliability and integrity of financial reporting; compliance with laws and regulations, policies, procedures and contracts; and, safeguarding of assets within an ethical organizational culture.

We assess and manage climate risks as part of a broader enterprise risk management program. Climate-related physical risks as well as risks associated with transitioning to a low-carbon environment are integrated within our Enterprise Risk Management (ERM) framework, which solicits and incorporates the expertise and insight of team members from all areas and levels of the organization, including our Board. Our enterprise risks arise primarily from our business environment and risk identification, and assessment drives our strategies and business objectives. Climate risks, as well as all other risks in our ERM Risk Register, are reviewed each quarter and are assessed for their perceived impacts in the short, medium and long-term.

We also maintain an enterprise-wide, award-winning business continuity management program that is aligned with our corporate priorities, including prioritizing the safety of our team members, minimizing the impacts of threats to our facilities, business operations and supply chain, maintaining service to our customers and keeping our communities connected. Ongoing risk-based optimization of our disaster recovery capabilities for our IT and telecommunication network assets is a key focus for preventing outages and limiting their impact on our operations and customers.

Process for managing climate-related risk

We mitigate all risk types, including climate, through contract terms, contingency planning and other risk response strategies, as appropriate. We strive to avoid taking on undue risk whenever possible and work to align risks with business strategies, objectives, values and risk tolerances. Residual exposure for certain risks are mitigated through insurance coverage, where we judge this to be efficient and commercially viable. Our specific strategy for managing climate-related risks includes three key components:

- Mitigation: focusing on reducing energy use and carbon dioxide equivalent (CO_2e) emissions
- Adaptation: focusing on business continuity planning and readiness for the potential physical risks of a changing climate on our operations
- Innovation: helping customers realize their climate change goals through product and service solutions such as video-conferencing.

Severe weather risk is a primary aspect of our climate-related risk management framework and is categorized as either having team member impacts, facility impacts or service delivery impacts. These risks are categorized and reported to the Audit Committee of the Board on a quarterly basis where such risks may impact regions in which we operate.

Mitigation initiatives to address severe weather threats have been an increasing focus and we have operationalized enhanced processes with respect to severe weather monitoring, notification of key stakeholders, and incident management, in addition to updating climate incident playbooks that leverage learnings from prior events. These measures occur in both short-term and long-term planning.

Short-term climate risk mitigation

On a weekly basis, our Corporate Business Continuity Office (CBCO) publishes a severe weather outlook for all operating jurisdictions to highlight severe weather events which could pose a threat to our operations, complemented by daily severe weather threat monitoring and notifications for key internal stakeholders.

The CBCO also hosts biannual seasonal preparedness workshops to create awareness and enhance our preparedness for anticipated seasonal threats. The workshops focus on upcoming seasonal trends, potential threats, and reviewing lessons learned from past incidents.

We maintain a property risk governance program that systematically identifies, evaluates, manages and monitors property related risks at critical network facilities. This program also assists in the identification of natural catastrophic hazards.

Long-term climate risk mitigation

We conduct flood and seismic studies every five to seven years to identify the most vulnerable sites and assist in possible future mitigation strategies. We also support various municipalities on climate change adaptation initiatives by representing the telecommunications industry in advising how the changing risk landscape, as a result of climate change, could affect the delivery of our services to citizens, businesses and communities.

Our ISO 14001:2015 certified EMS, used to identify and control the environmental impacts associated with our operations, is audited annually to assess compliance with standard applicable regulatory requirements.

(d) Metrics and Targets

Metrics used to identify climate-related risks and opportunities

We assess climate-related risks and opportunities by tracking and disclosing our GHG emissions and energy consumption. Our most significant sources of GHG emissions and energy consumption consist of direct energy and indirect energy for owned and leased real estate properties in Canada, cell tower sites, vehicle fleet, and remote generator fuel that are within our operational control. Annual disclosure of our Scope 1, Scope 2 and Scope 3 GHG emissions, as well as data and performance details, can be found in our annual Sustainability and ESG Report.

Climate-related targets

We established the following targets in 2020:

- Effectively procure 100% of our electricity requirements from renewable or low-emitting sources by 2025
- Achieve operational net carbon neutrality by 2030
- Reduce our energy intensity by 50% from 2019 levels by 2030
- Commit to set Science-based Targets in 2021.

In 2021, the Science-based Target initiative (SBTi) approved our Science-based Targets, which include the following:

- Reduce absolute Scope 1 and 2 GHG emissions by 46% from 2019 levels by 2030
- Reduce absolute Scope 3 GHG emissions from business travel and employee commuting by 46% from 2019 levels by 2030
- Reduce Scope 3 GHG emissions from purchased goods, capital goods and the use of sold products by 75% per million dollars of revenue from 2019 levels by 2030.

We report our performance against these targets in our annual Sustainability and ESG Report. Furthermore, the TELUS Environmental Policy keeps us focused on building an environmentally friendly future by collaborating across the Company to:

- Monitor, measure and reduce our overall GHG emissions
- Improve our energy intensity as we grow our business
- Minimize spills and halocarbon releases
- Enhance our Environmental Management System
- Align with green building certifications, such as LEED, within our real estate development projects.

5.3 Risk factors

Please see *Section 10 - Risks and risk management* of our 2022 annual MD&A which is hereby incorporated by reference.

5.4 Regulation

Please see *Sections 9.4 - Communications industry regulatory developments and proceedings and 10.3 - Regulatory matters* of our 2022 annual MD&A which is hereby incorporated by reference.

6. DIVIDENDS AND DISTRIBUTIONS

The dividends per Common Share declared with respect to each quarter by TELUS, during the three-year period ended December 31, 2022, are shown below:

Quarter ended [1]	**2022**	**2021**	**2020**
March 31	$0.3274	$ 0.3112	$0.29125
June 30	$0.3386	$ 0.3162	$0.29125
September 30	$0.3386	$ 0.3162	$0.29125
December 31	$0.3511	$ 0.3274	$0.31120
Total	**$1.3557**	**$ 1.2710**	**$1.18495**

1 Paid on or about the first business day of the next month.

Our shareholders received a total of $1.3557 per share in declared dividends in 2022, an increase of 6.7% from 2021. Our Board reviews the dividend rate quarterly. Our quarterly dividend rate will depend on an ongoing assessment of free cash flow generation and financial indicators including leverage, dividend yield and payout ratio. On February 8, 2023, a first quarter dividend of $0.3511 per share was declared, payable on April 3, 2023, to shareholders of record at the close of business on March 10, 2023. The first quarter dividend for 2023 reflects a cumulative increase of $0.0237 per share from the $0.3274 per share dividend paid in April 2022, consistent with our multi-year dividend growth program.

We first announced our dividend growth program in May 2011. In May 2022, we announced our intention to target ongoing semi-annual dividend increases, with the annual increase in the range of 7 to 10% from 2023 through to the end of 2025, thereby extending the policy first announced in May 2011. Notwithstanding this target, dividend decisions will continue to be subject to our Board's assessment and the determination of our financial position and outlook on a quarterly basis. Effective January 1, 2020, our long-term dividend payout ratio target guideline is calculated as 60% to 75% of prospective free cash flow. See *Section 7.5 - Liquidity and capital resource measures* of our 2022 annual MD&A which is hereby incorporated by reference. Based on dividends announced as of February 9, 2023, and 1.43 billion TELUS Corporation Common Shares outstanding at December 31, 2022, dividend declarations would total approximately $2.0 billion in 2023, before taking into account any Common Shares purchased and cancelled under any normal course issuer bid that we may implement. There can be no assurance that we will maintain a dividend growth program through 2025.

7. DESCRIPTION OF CAPITAL STRUCTURE

7.1 General description of capital structure

The authorized capital of TELUS consists of 6,000,000,000 shares, divided into: (1) 4,000,000,000 Common Shares without par value; (2) 1,000,000,000 First Preferred shares without par value, issuable in series and; (3) 1,000,000,000 Second Preferred shares without par value, issuable in series. The Common Shares are listed for trading on the Toronto Stock Exchange (TSX) and the New York Stock Exchange (NYSE).

Common Shares

Subject to the prior rights of the holders of First Preferred shares and Second Preferred shares, the Common Shares are entitled to participate with respect to the payment of dividends as declared by the Board and the distribution of assets of TELUS on the liquidation, dissolution or winding up of TELUS.

The holders of the Common Shares are entitled to receive notice of, attend, be heard and vote at any general meeting of the shareholders of TELUS on the basis of one vote per Common Share held. Holders of Common Shares are entitled to vote by a separate resolution for each director rather than a slate.

The Common Shares are subject to constraints on transfer to ensure our ongoing compliance with the Canadian ownership and control requirements of the Telecommunications Act and the Direction to the CRTC *(Ineligibility of Non-Canadians)* under the Broadcasting Act as noted in *Constraints – Canadian ownership and control requirements* .

Please see *Sections 9.4 - Communications industry regulatory developments and proceedings* and *10.3 - Regulatory matters* of our 2022 annual MD&A which is hereby incorporated by reference.

First Preferred shares

The First Preferred shares may be issued from time to time in one or more series, each series comprising the number of shares, and having attached thereto the designation, rights, privileges, restrictions and conditions which the Board determines by resolution and subject to filing an amendment to the Notice of Articles and Articles of TELUS. No series of First Preferred shares may have attached thereto the right to vote at any general meeting of TELUS or the right to be convertible into or exchangeable for Common Shares. Except as required by law, the holders of the First Preferred shares as a class are not entitled to receive notice of, attend or vote at any meeting of the shareholders of TELUS. The First Preferred shares rank prior to the Second Preferred shares and Common Shares with respect to priority in payment of dividends and in the distribution of assets in the event of liquidation, dissolution or winding up of TELUS.

As of February 9, 2023, there are no First Preferred shares outstanding.

Second Preferred shares

The Second Preferred shares may be issued from time to time in one or more series, each series comprising the number of shares, and having attached thereto the designation, rights, privileges, restrictions and conditions, which the Board determines by resolution and subject to filing an amendment to the Notice of Articles and Articles of TELUS. No series of Second Preferred shares may have attached thereto the right to vote at any general meeting of TELUS or the right to be convertible into or exchangeable for Common Shares. Except as required by law, the holders of the Second Preferred shares as a class are not entitled to receive notice of, attend or vote at any meeting of the shareholders of TELUS. The Second Preferred shares rank, subject to the prior rights of the holders of the First Preferred shares, prior to the Common Shares with respect to priority in payment of dividends and in the distribution of assets in the event of liquidation, dissolution or winding up of TELUS.

As of February 9, 2023, there are no Second Preferred shares outstanding.

Shareholder rights plan

TELUS has had a shareholder rights plan (Rights Plan) in place since March 2000. Our current Rights Plan was adopted by the Board on March 13, 2019 (Effective Date) and ratified and confirmed by the shareholders at our annual meeting on May 9, 2019, and reconfirmed by the shareholders at our annual meeting on May 6, 2022.

Under the current Rights Plan, TELUS issued one right (Right) in respect of each Common Share outstanding as at the Effective Date. The Rights Plan has a term of just over nine years, subject to shareholder confirmation every three years (in 2022 and 2025). Each Right, other than those held by an Acquiring Person (as defined in the Rights Plan) and certain of its related parties, entitles the holder in certain circumstances following the acquisition by an Acquiring Person of 20% or more of the Common Shares of TELUS (otherwise than through the "Permitted Bid" requirements of the Rights Plan) to purchase from TELUS $320 worth of Common Shares for $160 (i.e. at a 50% discount) respectively. For further details, please refer to the Rights Plan, a copy of which is available on SEDAR at sedar.com on EDGAR at www.sec.gov as an exhibit to TELUS' registration statement on Form 8-A filed with the U.S. Securities and Exchange Commission on May 10, 2019 (Commission File No. 001-15144) or available from TELUS' Corporate Governance office, 7th Floor, 510 West Georgia Street, Vancouver, British Columbia, V6B 0M3.

Normal course issuer bid and shelf prospectus

Please see *Section 4.3 - Liquidity and capital resources* of our 2022 annual MD&A which is hereby incorporated by reference.

7.2 Constraints

Canadian ownership and control requirements

Certain subsidiaries of TELUS Corporation are Canadian carriers, holders of radio authorizations and holders of broadcasting licences, and are required by the *Telecommunications Act* (Canada) (Telecommunications Act) and the *Direction to the CRTC (Ineligibility of Non-Canadians)* issued pursuant to the *Broadcasting Act* (Canada) (Broadcasting Act) to be Canadian-owned and controlled. Under the Telecommunications Act, a Canadian carrier, such as TCI is considered to be Canadian-owned and controlled if:

(i) not less than 80% of the members of its board of directors are individual Canadians;
(ii) Canadians beneficially own not less than 80% of its voting interests; and
(iii) it is not otherwise controlled in fact by persons who are not Canadians.

Substantially the same rules apply in relation to broadcasting undertakings but an additional requirement set out in the *Direction to the CRTC (Ineligibility of Non-Canadians)* is that the chief executive officer of a company that is a licensed broadcasting undertaking must be a Canadian citizen or a permanent resident of Canada. When levels of non-Canadian ownership exceed 20 per cent, an independent programming committee must be appointed to make all programming decisions relating to the licensed broadcasting undertaking.

TELUS Corporation has filed with the CRTC the requisite documentation affirming TCI 's status as a Canadian carrier. We further intend that TCI will remain controlled by TELUS Corporation and that it will remain "Canadian" for the purposes of Canadian ownership requirements.

The *Canadian Telecommunications Common Carrier Ownership and Control Regulations* (Ownership and Control Regulations), made pursuant to the Telecommunications Act, further provide that in order for a company that holds shares in a carrier (carrier holding corporation) to be considered Canadian, not less than 66-2/3% of the issued and outstanding voting shares of that company must be beneficially owned by Canadians and that such company must not otherwise be controlled in fact by non-Canadians. To the best of our knowledge, Canadians beneficially own and control in the aggregate not less than 66-2/3% of the issued and outstanding Common Shares of TELUS Corporation and TELUS Corporation is not otherwise controlled in fact by non-Canadians. For the purposes of these regulations, "Canadian" means among other things:

(i) a Canadian citizen who is ordinarily resident in Canada;
(ii) a permanent resident of Canada who is ordinarily resident in Canada and has been so for not more than one year after the date he or she was eligible to apply for Canadian citizenship;
(iii) a corporation with not less than 66-2/3% of the issued and outstanding voting shares of which are beneficially owned and controlled by Canadians and which is not otherwise controlled in fact by non-Canadians; or
(iv) a pension fund society the majority of whose members of its board of directors are individual Canadians, and that is established under applicable federal legislation or any provincial legislation relating to the establishment of pension fund societies.

The *Direction to the CRTC (Ineligibility of Non-Canadians)* provides a similar definition of "Canadian" but also includes a "qualified corporation" which can be a subsidiary corporation whose parent corporation or its directors do not exercise control or influence over any programming decisions of the subsidiary corporation where

(a) Canadians beneficially own and control less than 80% of the issued and outstanding voting shares of the parent corporation and less than 80% of the votes,
(b) the chief executive officer is a non-Canadian, or
(c) less than 80% of the directors of the parent corporation are Canadian.

On August 10, 2017, in response to levels of foreign ownership of shares exceeding 20% and in order to meet the requirements of a "qualified corporation" in accordance with the *Direction to the CRTC (Ineligibility of Non-Canadians)*, the Board appointed an independent programming committee to make all programming decisions relating to its licensed broadcasting undertakings.

The Ownership and Control Regulations provide Canadian carriers and carrier holding corporations, such as TELUS Corporation, with the time and ability to rectify ineligibility resulting from insufficient Canadian ownership of voting interests. Under the Ownership and Control Regulations, such corporations may refuse the subscription, issuance, transfer or purchase of voting interests, if necessary, to ensure that they and their subsidiaries remain eligible under such legislation. For such purposes, in particular but without limitation, a company may, in accordance with the provisions contained in the Ownership and Control Regulations:

(i) refuse to accept any subscription for voting shares;
(ii) refuse to allow any transfer of voting shares to be recorded in its share register;
(iii) suspend the rights of a holder of voting shares to vote at a meeting of its shareholders; and
(iv) sell, repurchase or redeem excess voting shares.

To ensure that TELUS Corporation remains Canadian and that any subsidiary of TELUS Corporation, including TCI, is and continues to be eligible to operate as a Canadian carrier under the Telecommunications Act, to be issued radio authorizations under the *Radiocommunication Act* (Canada) (Radiocommunication Act), or to be issued broadcasting licences under the Broadcasting Act, provisions substantially similar to the foregoing have been incorporated into the Articles of TELUS Corporation permitting its directors to make determinations to effect any of the foregoing actions.

In addition, TELUS has systems in place to monitor the level of Canadian ownership of its Common Shares. For registered shareholders and shares trading on the TSX, a reservation and declaration system requires non-Canadian purchasers of Common Shares to obtain a reservation number from our transfer agent and registrar, Computershare Trust Company and to declare whether or not the purchaser is a Canadian or non-Canadian. For Common Shares trading on the NYSE, non-Canadian ownership is monitored by utilizing the Depository Trust & Clearing Corporation's SEG-100 Account program. All TELUS Common Shares held by non-Canadians must be transferred to this account (no reservation application is required).

The *Telecommunications Act* was amended in June 2012 to remove foreign ownership restrictions for telecommunications common carriers that hold less than a 10% share of the total Canadian telecommunications services revenues. This change was made to enable non-Canadian owned entities to start up or acquire Canadian carriers that hold less than a 10% share of total Canadian telecommunications services revenues. However, given that TELUS and its affiliates exceed this 10% threshold, we remain subject to the pre-existing Canadian ownership and control restrictions outlined above. Canadian ownership requirements for licensees under the Broadcasting Act remain unchanged.

7.3 Ratings

The following information relating to our credit ratings is provided as it relates to our financing costs, liquidity and operations. Additional information relating to credit ratings is contained in *Section 7.5 - Liquidity and capital resource measures* to *Section 7.8 - Credit ratings* in the 2022 annual MD&A.

Credit ratings are important to our borrowing costs and ability to obtain short-term and long-term financing and the cost of such financing. Credit ratings are intended to provide investors with an independent measure of the credit quality of an issue of securities and are indicators of the likelihood of payment and of the capacity of a company to meet its financial commitment on the rated obligation in accordance with the terms of the rated obligation. A reduction in the current rating on our debt by rating agencies, particularly a downgrade below investment grade ratings or a negative change in ratings outlook which could result in a rating below investment grade could adversely affect our cost of financing and our access to sources of liquidity and capital. We believe our investment grade credit ratings, coupled with our efforts to maintain constructive relationships with banks, investors and credit rating agencies, continue to provide TELUS with reasonable access to capital markets. In addition, credit ratings may be important to customers or counterparties when we compete in certain markets and when we seek to engage in certain transactions including transactions involving over-the-counter derivatives. As at December 31, 2022, TCI is a party to an agreement expiring in December 2024, with an arm's-length securitization trust associated with a major Schedule I bank, under which TCI is able to sell an interest in certain trade receivables up to a maximum of $600 million. TCI is required to maintain at least a BB credit rating by DBRS Ltd. (DBRS) or the securitization trust may require the sale program to be wound down.

The rating agencies regularly evaluate TELUS and TCI, and their ratings of our long-term and short-term debt are based on a number of factors, including our financial strength as well as factors not entirely within our control, including conditions affecting the telecommunications industry generally, and the wider state of the economy. The Company's credit ratings are outlined in the chart below. Credit ratings are not recommendations to purchase, hold or sell securities and do not address the market price or suitability of a specific security for a particular investor. In addition, real or anticipated changes in the rating assigned to a security will generally affect the market value of that security. There can be no assurance that a rating will remain in effect for any given period of time or that a rating will not be revised or withdrawn entirely by a rating agency in the future.

Credit rating summary	DBRS Ltd.	Standard & Poor's Rating Services	Moody's Investor Services	Fitch Ratings
TELUS Corporation				
Notes	BBB	BBB	Baa1	BBB
Commercial paper	R-2 (mid)	A-2	P-2	—
TELUS Communications Inc.				
Debentures	BBB	BBB	—	BBB

Institution	Rating
DBRS	The DBRS long-term rating scale provides an opinion on the risk of default. That is, the risk that an issuer will fail to satisfy its financial obligations in accordance with the terms under which an obligation has been issued. Ratings are based on quantitative and qualitative considerations relevant to the issuer, and the relative ranking of claims. All rating categories, other than "AAA" and "D", also contain subcategories "(high)" and "(low)". The absence of either a "(high)" or "(low)" designation indicates the rating is in the middle of the category. A "BBB" rating denotes adequate credit quality. The capacity for the payment of financial obligations is considered acceptable. May be vulnerable to future events. A DBRS rating trend provides guidance with respect to an opinion regarding the outlook for a rating. The rating trend indicates the direction a rating may move if present circumstances continue unless addressed. A positive or negative trend represents an indication that there is a greater likelihood that the rating could change in the future than is the case if a stable trend was assigned. Assignment of a positive or negative trend are resolved typically within a twelve-month period.
S&P	A S&P issue credit rating is a forward-looking opinion about the creditworthiness of an obligor with respect to a specific financial obligation, a specific class of financial obligations, or a specific financial program (including ratings on medium-term note programs and commercial paper programs). It takes into consideration the creditworthiness of guarantors, insurers, or other forms of credit enhancement on the obligation and takes into account the currency in which the obligation is denominated. The opinion reflects S&P's view of the obligor's capacity and willingness to meet its financial commitments as they come due, and may assess terms, such as collateral security and subordination, which could affect ultimate payment in the event of default. An obligation rated "BBB" exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation. The ratings from "AA" to "CCC" may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories. A S&P rating outlook indicates an opinion regarding the potential direction of a long-term credit rating over the intermediate term (ranging six months to two years). A positive outlook indicates a rating may be raised, and a negative outlook indicates a rating may be lowered. A stable outlook is assigned when the ratings are not likely to be changed, and a developing outlook is assigned when rating may be raised or lowered.
Moody's	Moody's long-term ratings are assigned to issuers or obligations with an original maturity of one year or more and reflect both on the likelihood of a default on contractually promised payments and the expected financial loss suffered in the event of default. Obligations rated "Baa" are judged to be medium-grade and subject to moderate credit risk and as such may possess certain speculative characteristics. Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from "Aa" through "Caa". The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category. A Moody's rating outlook is an opinion regarding the likely rating direction over the medium term. A stable outlook indicates a low likelihood of a rating change over the medium term. A negative, positive or developing outlook indicates a higher likelihood of a rating change over the medium term.

Institution	Rating
Fitch	Rated entities in a number of sectors, including financial and non-financial corporations, sovereigns and insurance companies are generally assigned issuer default ratings (IDRs). IDRs opine on an entity's relative vulnerability to default on financial obligations. The "threshold" default risk addressed by the IDR is generally that of the financial obligations whose non-payment would best reflect the uncured failure of that entity. As such, IDRs also address relative vulnerability to bankruptcy, administrative receivership or similar concepts, although the agency recognizes that issuers may also make pre-emptive and therefore voluntary use of such mechanisms. In aggregate, IDRs provide an ordinal ranking of issuers based on the agency's view of their relative vulnerability to default, rather than a prediction of a specific percentage likelihood of default. "BBB" ratings indicate that expectations of default risk are currently low. The capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity. The modifiers "+" or "-" may be appended to a rating to denote relative status within major rating categories. Such suffixes are not added to the "AAA" Long-Term IDR category, or to Long-Term IDR categories below "B". Ratings may also have a directional Watch or Outlook assigned, which can signify the trajectory of the credit profile. A Fitch rating outlook is an opinion on the direction a rating is likely to move over a one- to two-year period. A positive rating outlook indicates an upward trend on the rating scale, and a negative rating outlook signals a negative trend on the rating scale. Ratings with stable outlooks can be raised or lowered without a prior revision to the outlook. Evolving outlooks may be described when there is conflicting elements of both positive and negative trends.

As of February 9, 2023, DBRS, S&P and Fitch rate TELUS as BBB (or equivalent) with a stable outlook, while Moody 's rates TELUS as Baa1 with a negative outlook. As is common practice, during the last two years, each of the mentioned credit rating agencies charged TELUS for their rating services which include annual surveillance fees covering our outstanding long-term and short-term debt securities, in addition to one-time rating fees for certain agencies when debt is initially issued. We reasonably expect that such payments will continue to be made for rating services in the future.

8. MARKET FOR SECURITIES

8.1 Trading Price and Volume

Our Common Shares are listed on the TSX under the symbol "T" and on the NYSE under the symbol "TU". Monthly share prices and volumes for 2022 are listed below:

	TSX – Common Shares			NYSE – Common Shares		
Month	**High ($)**	**Low ($)**	**Volume**	**High ($U.S.)**	**Low ($U.S.)**	**Volume**
January	30.06	28.80	54,708,316	24.00	22.74	23,417,260
February	32.57	29.69	68,094,941	25.55	23.38	38,917,092
March	33.81	31.91	81,455,044	26.48	25.08	40,836,711
April	34.65	32.10	51,056,785	27.50	24.96	36,250,396
May	32.48	30.51	53,481,311	25.29	23.52	43,502,557
June	32.03	27.59	73,791,515	25.50	21.34	35,726,457
July	29.69	28.29	51,002,853	23.18	21.66	22,149,793
August	30.77	28.57	47,184,496	23.68	22.08	23,448,249
September	30.03	27.26	56,658,915	22.94	19.84	29,705,073
October	28.81	26.30	36,527,982	21.29	18.85	30,140,457
November	29.43	27.76	59,293,195	22.08	20.11	29,030,320
December	29.08	25.94	54,333,700	21.53	19.12	34,823,900

8.2 Prior Sales

In 2022, we undertook debt offerings consisting of a US$900 million Sustainability-Linked Bond and a CAD$2 billion, three-tranche bond offering. These offerings increased our weighted average cost of long-term debt from 3.72% to 4.03% and brought our average term to maturity from 12.5 years to 12.1 years.

Please refer to TELUS Corporation ’s 2022 year-end audited consolidated financial statements – *Note 26(b)* TELUS Corporation senior notes for details on our past debt offerings.

In addition, in the ordinary course of business, the Company has the capability to issue commercial paper with maturities of less than 12 months. As at December 31, 2022, the Company had $1.5 billion of commercial paper outstanding, all of which was denominated in U.S. dollars (US$1.1 billion).

9. DIRECTORS AND OFFICERS

9.1 Name, occupation and security holding

Directors

The names, municipalities of residence and principal occupations of the directors of TELUS as at February 9, 2023, as well as the date each such person became a director of TELUS and committee membership are as set out below. Currently, there are 15 directors on the Board. Each was elected at TELUS’ annual general meeting (AGM) on May 6, 2022. Each director ’s term of office will expire

immediately before the election of directors at the upcoming AGM on May 4, 2023. Nominees for re-election will be included in the Information Circular for the 2023 AGM.

Directors of TELUS Name and municipality of residence)	Director since	Principal occupation
R.H. (Dick) Auchinleck Victoria, B.C.	2003	Chair, TELUS Corporation
Raymond T. Chan [2, 4 – Chair] Vancouver, B.C.	2013	Corporate Director
Hazel Claxton [1, 2] Toronto, Ontario	2021	Corporate Director
Lisa de Wilde [3 - Chair, 4] Toronto, Ontario	2015	Bell Media Professor of Media Management, Schulich School of Business, York University
Victor Dodig Toronto, Ontario	2022	President and Chief Executive Officer, CIBC group of companies
Darren Entwistle Vancouver, B.C.	2000	President and Chief Executive Officer, TELUS Corporation
Thomas E. Flynn [1, 4] Toronto, Ontario	2020	Corporate Director
Mary Jo Haddad [2 – Chair, 3] Niagara-on-the-Lake, Ontario	2014	Founder and President, MJH & Associates (strategic leadership and healthcare advisory services)
Kathy Kinloch [2, 3] Vancouver, B.C.	2017	Corporate Director
Christine Magee [2, 4] Toronto, Ontario	2018	Co-Founder and Chair, Sleep Country Canada
John Manley [2, 3] Ottawa, Ontario	2012	Senior Business Advisor, Bennett Jones LLP
David Mowat [1 – Chair] Vancouver, B.C.	2016	Corporate Director
Marc Parent [2, 4] Montreal, Quebec	2017	President and Chief Executive Officer, CAE Inc.
Denise Pickett [1, 3] Toronto, Ontario	2018	President, Global Services Group, American Express
W. Sean Willy [1, 3] Saskatoon, Saskatchewan	2021	President and Chief Executive Officer of Des Nedhe Development, the economic development entity for English River First Nation

1 Member of Audit Committee
2 Member of People. Culture and Compensation Committee
3 Member of Corporate Governance Committee
4 Member of Pension Committee

All of the directors of TELUS have held the principal occupations set forth above or executive positions with the same companies or firms referred to, or with affiliates or predecessors thereof, for the past five years except as follows: David Mowat was President and CEO of ATB Financial from June 2007 to June 2018; Ray Chan was Chair of Baytex Energy Corp. from 2014 to 2018 and Lead Independent Director from 2018 to 2019; John Manley was President and Chief Executive Officer of the Business Council of Canada from 2010 to 2018; Lisa de Wilde was CEO of the Ontario Educational Communications Authority (TVO) from 2005 to 2019; Thomas Flynn was CFO of BMO Financial Group from March 2011 to December 2020. Hazel Claxton was Executive Vice-President and Chief Human Resources Officer of Morneau Shepell Inc. (renamed LifeWorks Inc.) from 2013 to 2018.

Executive officers

The name, municipality of residence and principal occupations of each of the executive officers of TELUS, as of February 9, 2023, are as follows:

Executive Officers of TELUS (Name and municipality of residence)	**Position held with TELUS**
Darren Entwistle Vancouver, B.C.	President and Chief Executive Officer
Doug French Whitby, Ontario	Executive Vice President and Chief Financial Officer
Navin Arora Calgary, Alberta	Executive Vice President and President, Business Solutions
Tony Geheran Vancouver, B.C.	Executive Vice President and Chief Operations Officer
Gopi Chande West Vancouver, B.C.	Senior Vice President and Treasurer
Zainul Mawji Edmonton, Alberta	Executive Vice President and President, Consumer Solutions
Sandy McIntosh Toronto, Ontario	Executive Vice President, People and Culture and Chief Human Resources Officer
Jim Senko Toronto, Ontario	Executive Vice President and Chief Product Officer, Consumer Solutions
Andrea Wood Toronto, Ontario	Chief Legal and Governance Officer

All of the executive officers of TELUS have held their present positions or other positions with the Company during the past five years or more.

TELUS shares held by directors and executive officers

As at February 7, 2023, the directors and executive officers of TELUS, as a group, beneficially owned, directly or indirectly, or exercised control or direction over 1,359,479 Common Shares, which represented approximately 0.09% of the outstanding Common Shares.

9.2 Cease trade orders, bankruptcies, penalties or sanctions

For the 10 years ended February 9, 2023, other than as disclosed below we are not aware that any current director or executive officer of TELUS had been a director or executive officer of any issuer which, while that person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt or made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets. On December 1, 2022, the Court of King's Bench for Saskatchewan issued an Order approving a Proposal filed with the Office of the Superintendent of Bankruptcy on October 21, 2022 and as accepted by requisite majorities of the creditors of Tron Construction & Mining Inc. (TCMI) and Tron Construction & Mining Limited Partnership (TCMLP), a 100% First Nation owned business. W. Sean Willy is the President and CEO of Des Nedhe Development Corporation, which, among other portfolio investments, owns TCMLP. In connection with such ownership, Mr. Willy is the Chair of TCMI.

For the 10 years ended February 9, 2023, we are not aware that any current director or executive officer of TELUS had been a director, chief executive officer or chief financial officer of any issuer which was the subject of a cease trade order, an order similar to a cease trade order or an order that denied such issuer access to any exemption under securities legislation, and that was in effect for a period of more than 30 consecutive days, (in each such case, an "Order") while that person was acting in that capacity, or was subject to such an Order issued after the director or executive officer ceased to be a director, chief executive officer or chief financial officer and resulted from an event that occurred while that person was acting in that capacity.

10. LEGAL PROCEEDINGS AND REGULATORY ACTIONS

Legal proceedings are described in *Section 10.17 - Litigation and legal matters* in the 2022 annual MD&A and in the Company 's December 31, 2022, consolidated financial statements *Note 29(a) Claims and lawsuits*.

From time to time, in the ordinary course of business, the Company and its subsidiaries are assessed fees or fines by securities regulatory authorities in relation to administrative matters, including late filing or reporting fees, which may be considered penalties or sanctions pursuant to Canadian securities regulations but which are not, individually or in the aggregate, material to the Company. In addition, the Company and its subsidiaries are subject to numerous regulatory authorities around the world, and fees, administrative penalties, settlement agreements and sanctions may be categorized differently by each regulator. However, during the most recently completed financial year, the Company is not aware of any material (i) penalties or sanctions imposed against us by a court relating to securities legislation or by a securities regulatory authority; (ii) penalties or sanctions imposed by a court or regulatory body against us that would likely be considered important to a reasonable investor in making an investment decision; or (iii) settlement agreements entered into by us before a court relating to securities legislation or with a securities regulatory authority.

11. INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

To the best of our knowledge, there were no directors or executive officers, or any associate or affiliate of a director or executive officer with a material interest in any transaction within the three most recently completed financial years or during the current financial year that has materially affected or is reasonably expected to materially affect us.

12. TRANSFER AGENT AND REGISTRAR

Our transfer agent and registrar is Computershare Trust Company of Canada. Computershare maintains the Company 's registers at 800, 324 - 8th Avenue SW, Calgary, Alberta T2P 2Z3.

13. MATERIAL CONTRACTS

TCI is a party to a three-year agreement (expiry December 31, 2024) with an arm's-length securitization trust associated with a major Schedule I bank, under which TCI is able to sell an interest in certain of its trade receivables up to a maximum of $600 million. TCI is required to maintain at least a BB credit rating by DBRS Ltd. or the securitization trust may require the sale program to be wound down. The necessary credit rating was exceeded throughout its term.

TELUS holds a five-year unsecured credit facility (2018 Credit Facility) with a syndicate of financial institutions. On April 1, 2021, a second amendment agreement was entered into which extended the maturity date from May 2023 to April 2026 and increased the facility from $2.25 billion to $2.75 billion. The 2018 Credit Facility may be used for general corporate purposes including the backstop of commercial paper.

On July 12, 2022, TELUS entered into an unsecured non-revolving $1.9 billion bank credit facility, maturing July 9, 2024, with a syndicate of financial institutions, which is to be used for general corporate purposes. Subsequently, the size of the facility, upon our request, was reduced to $1.6 billion.

TELUS has also entered into material contracts in connection with the following financings in 2022:

- On February 28, 2022, TELUS issued US$900 million aggregate principal amount of 3.400% Sustainability-Linked Notes due May 13, 2032.
- On September 13, 2022, TELUS issued $1.1 billion aggregate principal amount of 5.25% Sustainability-Linked Notes, Series CAG, due November 15, 2032; $550 million aggregate principal amount of 5.65% Notes, Series CAH, due September 13, 2052; and $350 million aggregate principal amount of 5.00% Notes, Series CAI, due September 13, 2029.

The applicable trust indenture and supplemental indenture documents in relation to these notes have been filed on SEDAR at www.sedar.com and on EDGAR at www.sec.gov. The terms of the indenture are fully described in our final short form base shelf prospectus dated August 8, 2022 filed on SEDAR. The terms of the various notes issued in 2022 and the applicable supplemental indentures are as set forth in the shelf prospectus supplements dated February 23, 2022 and September 8, 2022, filed on SEDAR. The base shelf prospectus dated August 8, 2022 has been filed as part of a registration statement on Form F-10 filed with the U.S. Securities and Exchange Commission (Commission File No. 333-266633).

14. INTERESTS OF EXPERT

Deloitte LLP, Chartered Professional Accountants, is the auditor of the Company and is independent of the Company within the meaning of the Rules of Professional Conduct of the Chartered Professional Accountants of British Columbia and within the meaning of the Securities Act of 1933, as amend and the applicable rules and regulations thereunder adopted by the Securities and Exchange Commission and the Public Company Accounting Oversight Board (United States).

15. AUDIT COMMITTEE

The Audit Committee of the Company supports the Board in fulfilling its oversight responsibilities regarding the integrity of our accounting and financial reporting, internal controls and disclosure controls, legal and regulatory compliance, ethics policy and timeliness of filings with regulatory authorities, the independence and performance of our external and internal auditors, the management of our risk, credit worthiness, treasury plans and financial policy and whistleblower and complaint procedures. A copy of the Audit Committee's Terms of Reference is attached as Appendix A to this AIF.

The current members of the Audit Committee are David Mowat (Chair), Hazel Claxton, Tom Flynn, Denise Pickett and W. Sean Willy. Each member of the Audit Committee is independent and financially literate within the meaning of Multilateral Instrument 52-110 "Audit Committees" and the Board has determined that David Mowat is the audit committee financial expert and has the required accounting or related financial management expertise. The following lists the relevant education and experience of the members of TELUS' Audit Committee that is relevant to their role on the committee.

David Mowat is the Chair of the Audit Committee. He is the former President and CEO of ATB Financial, a position he held from June 2007 to June 2018. Prior to that, he was the CEO of Vancouver City Savings Credit Union from 2000 until 2007. In 2015, he was named chair of the Alberta Royalty Review panel. He is currently a director of the Laurentian Bank Group. David holds a Bachelor of Commerce from the University of British Columbia and the ICD.D designation from the Institute of Corporate Directors. In 2015, he received an Honorary Bachelor of Business Administration from the Southern Alberta Institute of Technology and in 2017 he received an honorary doctorate of laws from the University of Alberta.

Hazel Claxton is the former Executive Vice-President and Chief Human Resources Officer of Morneau Shepell Inc. (renamed LifeWorks Inc.); a position she held from 2013 to 2018. Prior to that, Hazel spent 29 years at PwC Canada where she held several leadership roles including Canadian Leadership Group member, Human Capital leader, and Partner within the Corporate Advisory and Restructuring Group, an area she practiced in for 20 years. Hazel currently sits on the boards of Allied Properties REIT, University Pension Plan Ontario, and Unity Health Toronto. Previously, she was on the boards of Queen's University, St. Michael's Hospital, and the Shaw Festival Theatre. Hazel holds a Bachelor of Commerce (Honours) from Queen's University and the ICD.D designation from the Institute of Corporate Directors. She is a Chartered Professional Accountant.

Tom Flynn is the former Vice-Chair of BMO Financial Group. Prior to 2021 he was an executive officer and served as Bank of Montreal's Chief Financial Officer from 2011 to 2020 and Chief Risk Officer from 2008 to 2011. Previously, Tom held other leadership positions, including Executive Vice-President Finance and Treasurer, and Head of the Financial Services Corporate and Investment Banking Group in BMO Capital Markets. Tom is Chair of the Board of Sunnybrook Health Sciences Centre and was previously Chair of the Board of Holland Bloorview Kids Rehabilitation Hospital and Symcor Inc. He obtained his MBA and his Bachelor of Arts (Honours) in Business Administration from the Ivey School of Business at Western University, is a Chartered Professional Accountant and a Fellow of CPA Ontario, and holds the ICD.D designation from the Institute of Corporate Directors.

Denise Pickett is the President, Global Services Group of American Express, a position she has held since September 2019. From 1992 to the present, Denise has held a series of progressively senior roles throughout American Express. She was Country Manager for American Express Canada and President and CEO of Amex Bank of Canada. Denise subsequently relocated to the United States where most recently she served as the President of American Express OPEN, the small business division, followed by the President of U.S. Consumer Services and most recently as American Express' Chief Risk Officer. Denise holds an MBA in marketing from the Schulich School of Business at York University and a Bachelor of Science (Honours) from the University of Toronto.

W. Sean Willy is President and Chief Executive Officer of Des Nedhe Development, the economic development entity for English River First Nation, which includes a broad portfolio of businesses and investments that range from construction and mining to retail and communications, a role he has held since August 2017, and prior thereto he was a Vice-President of Des Nedhe Development since June 2016. From 2010 to 2016, Sean was the Director of Corporate Responsibility for Cameco Corporation, a publicly traded uranium producer. Sean is an experienced business executive, with a 25-year history of creating, developing and leading inclusive practices in the resource sector and building opportunities with Indigenous communities. In his career, Sean has developed and implemented progressive and innovative Indigenous inclusion and value-added corporate social responsibility strategies for two leading resource companies, Rio Tinto and Cameco Corporation. Sean has always worked to ensure Indigenous Peoples are seen as full partners in long-term relationships, and this has led to Sean building partnerships in Australia, the United States and throughout Canada. Sean is currently a member of the Canadian Government's Indigenous Innovation Housing Committee. In the past, he has served as Chair of the Mining Association of Canada's Indigenous Affairs Committee, Co-Chair of the Canadian Council for Aboriginal Business, Chair of the successful Northern Career Quest and a board member of Indigenous Works. Sean holds a Bachelor of Commerce from the Edwards School of Business of the University of Saskatchewan.

Audit, audit-related and non-audit services

All requests for non-prohibited audit, audit-related and non-audit services provided by our external auditor and its affiliates to us are required to be pre-approved by our Audit Committee. To enable this, we have implemented a process by which all requests for services involving the external auditor are routed for review by the VP Risk Management and Chief Internal Auditor to validate that the requested service is a non-prohibited service and to verify that there is a compelling business reason for the request. If the request passes this review, it is then forwarded to the Chief Financial Officer for further review. Pending the Chief Financial Officer's affirmation, the request is then presented to the Audit Committee for its review, evaluation and pre-approval or denial at its next scheduled quarterly meeting. If the timing of the request is urgent, it is provided to the Audit Committee Chair for his or her review, evaluation and pre-approval or denial on behalf of the Audit Committee (with the full committee's review at the next scheduled

quarterly meeting). Throughout the year, the Audit Committee monitors the actual versus approved expenditure for each of the approved requests.

The following table is a summary of billings by Deloitte LLP (Deloitte), as external auditor of TELUS, during each of the years ended December 31, 2022 and 2021.

	Year ended December 31, 2022		Year ended December 31, 2021	
Type of work	**$ millions**	**%**	**$ millions**	**%**
Audit fees [1]	3.125	27.4	2.810	25.8
Audit-related fees [2]	7.230	63.3	6.869	63.2
Tax fees [3]	870	7.6	0.834	7.7
All other fees [4]	192	1.7	0.359	3.3
Total	**11.417**	**100.0**	**10.871**	**100.0**

1 Includes fees for services rendered by Deloitte in relation to the audit and review of our financial statements.
2 Includes fees for audits in relation to our statutory and regulatory filings, audits and reviews of subsidiaries including TELUS International, pension-related audits, customer required reviews and translation services rendered by Deloitte in relation to the audit or review of our financial statements that were not part of audit fees.
3 Relates to tax compliance, tax advice and tax planning.
4 Includes fees for services rendered by Deloitte that were not in relation to the audit or review of our financial statements, such as Board Effectiveness Assessment (2021), M&A Due Diligence (2021), Advisory services for private investment fund establishment (2021), proxy circular assurance work (2022), Data Analytics Maturity Assessment and Benchmarking (2022) and other Specified Procedures (2021/2022).

16. ADDITIONAL INFORMATION

Additional information relating to TELUS may be found on SEDAR at sedar.com and EDGAR at sec.gov. Additional information regarding directors' and officers' remuneration, and securities authorized for issuance under equity compensation plans, will be contained in TELUS' information circular for the annual meeting to be held on May 4, 2023. Additional financial information is provided in the Company's consolidated financial statements and MD&A for the year ended December 31, 2022. All of the above information can also be found at telus.com. Additional information about our TELUS International (Cda) Inc. subsidiary, including discussion of its business and results, can be found in its public filings available on SEDAR at sedar.com and EDGAR at sec.gov.

APPENDIX A: TERMS OF REFERENCE FOR THE AUDIT COMMITTEE

The Board has established an Audit Committee (the "Committee") to assist the Board in fulfilling its oversight responsibilities regarding the integrity of the Company's accounting and financial reporting, the Company 's internal controls and disclosure controls, the Company's legal and regulatory compliance, the Company 's Code of Ethics and Conduct and timeliness of filings with regulatory authorities, the independence and performance of the Company's external and internal auditors, the identification and management of the Company's risks, the Company 's credit worthiness, treasury plans and financial policy and the Company's whistleblower and complaint procedures.

1. MEMBERSHIP

1.1 The Committee will have a minimum of three members, including the chair of the Committee. The Board, upon the recommendation of the Corporate Governance Committee, will appoint and remove the members of the Committee by a majority vote. The members will sit on the Committee at the pleasure of the Board.
1.2 The Board, upon the recommendation of the Corporate Governance Committee, will appoint the chair of the Committee from the Committee's members by a majority vote. The chair of the Committee will hold such position at the pleasure of the Board.
1.3 All members of the Committee will be Independent Directors.
1.4 All members of the Committee will be financially literate, as defined in accordance with applicable securities laws and standards of the stock exchanges on which the Company's securities are listed.
1.5 At least one member of the Committee will be an audit committee financial expert, as defined in accordance with applicable securities laws, and at least one member of the Committee will have accounting or related financial management expertise, as defined in accordance with applicable securities laws.

2. MEETINGS

2.1 The Committee will meet at least once each quarter and otherwise as necessary. Any member of the Committee may call meetings of the Committee.
2.2 All directors of the Company, including management directors, may attend meetings of the Committee provided, however, that no director is entitled to vote at such meetings and is not counted as part of the quorum for the Committee if they are not a member of the Committee.
2.3 Notwithstanding section 2.2 above, the Committee will, as a regular feature of each regularly scheduled meeting, hold an in-camera session with the external auditors and separately with the internal auditors, and an in-camera session without management or management directors present. The Committee may, however, hold other in-camera sessions with such members of management present as the Committee deems appropriate.
2.4 The Chief Legal and Governance Officer or their nominee will act as secretary to the Committee.
2.5 The Committee will report to the Board on its meetings and each member of the Board will have access to the minutes of the Committee's meetings and meeting materials, regardless of whether the director is a member of the Committee.
2.6 The external auditors of the Company will receive notice of every meeting of the Committee and may request a meeting of the Committee be called by notifying the chair of the Committee of such request.

3. QUORUM

The quorum necessary for the transaction of business at Committee meetings will be a majority of the members of the Committee. A quorum once established is maintained even if members of the Committee leave the meeting prior to conclusion.

4. DUTIES

The Board hereby delegates to the Committee the following duties to be performed by the Committee on behalf of and for the Board:

4.1 Financial Reporting

Prior to public disclosure, the Committee will review and recommend to the Board, and where applicable, to the boards of the Company's subsidiaries which are reporting issuers, for approval:

(a) the annual audited consolidated financial statements and interim unaudited consolidated financial statements of the Company and those of its subsidiaries that are reporting issuers, as defined in accordance with applicable securities laws;
(b) the interim and annual management 's discussion and analysis of financial condition and results of operations ("MD&A") of the Company and those of its subsidiaries that are reporting issuers, as defined in accordance with applicable securities laws;
(c) earnings press releases and earnings guidance, if any; and
(d) all other material financial public disclosure documents of the Company and those of its subsidiaries that are reporting issuers, including prospectuses, press releases with financial results, annual information form and any metrics regarding climate related risks, sustainability, and environmental disclosure in financial reporting, including but not limited to, disclosure made under the Task Force on Climate-related Financial Disclosures framework established by the Financial Stability Board.

4.2 External Auditors

The external auditors will report directly to the Committee and the Committee will:

(a) appoint the external auditors, subject to the approval of the shareholders, and determine the compensation of the external auditors;
(b) conduct an annual review of the external auditors;
(c) oversee the work of the external auditors and review and approve the annual audit plan of the external auditors, including the scope of the audit to be performed and the degree of coordination between the plans of the external and internal auditors;
(d) discuss with the internal auditors, the external auditors and management, the adequacy and effectiveness of the disclosure controls and internal controls over financial reporting of the Company and elicit recommendations for the improvement of such controls or particular areas where new or more detailed controls or procedures are desirable. Particular emphasis will be given to the adequacy of internal controls to prevent, identify or detect fraud, or any payments, transactions or procedures that might be deemed illegal or otherwise improper;
(e) meet regularly with the external auditors without management present and ask the external auditors to report any significant disagreements with management regarding financial reporting, the resolution of such disagreements and any restrictions imposed by management on the scope and extent of the audit examinations conducted by the external auditors;
(f) pre-approve all audit, audit-related and non-audit services to be provided to the Company or any of its subsidiaries, by the external auditors (and its affiliates), in accordance with applicable securities laws. The Committee may also delegate the pre-approval of audit, audit-related and non-audit services to any one member of the Committee, provided, however, a report is made to the Committee on any pre-approval of such services at the Committee's first scheduled meeting following the pre-approval;
(g) annually review the qualifications, expertise and resources and the overall performance of the external audit team and, if necessary, recommend to the Board the termination of the external auditors or the rotation of the audit partner in charge;
(h) at least annually, obtain and review a report by the external auditors describing: the firm's internal quality-control procedures; any material issues raised by the most recent internal quality control review, or peer review of the firm, or by any inquiry or investigation by governmental or professional authorities, within the preceding five years, respecting one or more independent audits carried out by the firm, and any steps taken to deal with such issues; and all relationships between the external auditors and the Company;
(i) annually, or more frequently as appropriate, assess and confirm the independence, objectivity and professional skepticism of the external auditors and require the external auditors to deliver an annual report to the Committee regarding its independence, such report to include disclosure regarding all engagements (and fees related thereto) by the Company and relationships which may impact the objectivity and independence of the external auditors;
(j) require the external auditors to deliver an annual engagement letter to the Committee;
(k) review post-audit or management letters, containing recommendations of the external auditors and management 's response;
(l) review reports of the external auditors; and
(m) pre-approve the hiring of employees and former employees of current and former auditors in accordance with applicable securities laws and the Company's policies.

4.3 Internal Auditors

The internal auditors will report functionally to the Committee, and administratively to the Company 's Chief Financial Officer ("CFO"), and the Committee will:

(a) review and approve management 's appointment, termination or replacement of the Chief Internal Auditor;
(b) review and consider the annual performance objectives, performance evaluation and compensation treatment of the Chief Internal Auditor;
(c) oversee the work of the internal auditors including reviewing and approving the annual internal audit plan and updates thereto;
(d) review the report of the internal auditors on the status of significant internal audit findings, recommendations and management's responses and review any other reports of the internal auditors;
(e) annually review the scope of responsibilities and effectiveness of the internal audit team, its reporting relationships, activities, organizational structure and resources, its independence from management, its credentials and its working relationship with the external auditors; and
(f) review and approve the internal audit charter and updates thereto at a minimum of every five years (or sooner if required).

The internal auditors will report quarterly to the Committee on the results of internal audit activities and will also have direct access to the chair of the Committee when the internal auditors determine it is necessary.

4.4 Whistleblower, Ethics and Internal Controls Processes

The Committee will ensure that the Company has in place adequate procedures for:

(a) the receipt, retention and treatment of complaints received by the Company regarding accounting, internal controls or auditing matters; and
(b) the confidential, anonymous submission by employees of the Company of concerns regarding questionable accounting or auditing matters.

The CEO, CFO, or the Chief Internal Auditor will report to the Committee, and the Committee will review such reports, on any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal controls. Where the CEO, CFO and/or the Chief Internal Auditor are named in a complaint, the Director of Ethics will speak directly with the chair of the Committee.

The Committee will review:

(c) at least once every two years, and recommend to the Board for approval, together with the People, Culture and Compensation Committee, the Code of Ethics and Conduct and material changes thereto; and
(d) quarterly reports on ethics breaches including any pertaining to internal controls over financial reporting or fraud involving management or other employees who have a role in the Company's internal controls over financial reporting.

The Chief Internal Auditor will report to the Committee, and the Committee will consider such reports, on the results of the investigation of whistleblower, ethics and internal controls complaints.

4.5 Accounting and Financial Management

The Committee will review:

(a) with management and the external auditors, the Company 's major accounting policies, including the impact of alternative accounting policies and key management estimates, risks and judgments that could materially affect the financial results and whether they should be disclosed in the MD&A;
(b) emerging accounting issues and their potential impact on the Company 's financial reporting;
(c) significant judgments, assumptions and estimates made by management in preparing financial statements;
(d) the evaluation by either the internal or external auditors of management 's internal control systems, and management 's responses to any identified weaknesses;

(e) the evaluation by management of the adequacy and effectiveness in the design and operation of the Company ’s disclosure controls and internal controls for financial reporting;
(f) audits designed to report on management ’s representations on the effectiveness and efficiency of selected projects, processes, programs or departments;
(g) management’s approach for safeguarding corporate assets, data and information systems, the adequacy of staffing of key financial functions and their plans for improvements; and
(h) internal interim and post implementation reviews of major capital projects.

4.6 Credit Worthiness, Treasury Plans and Financial Policy

The Committee will review with management:

(a) the Company’s financial policies and compliance with such policies;
(b) the credit worthiness of the Company;
(c) the liquidity of the Company; and
(d) important treasury matters including financing plans.

4.7 Legal/Regulatory Matters

The Committee will review:

(a) with management, the external auditors and legal counsel, any litigation, claim or other contingency, including any tax assessment, that could have a material effect upon the financial position or operating results of the Company;
(b) annually, management’s relationships with regulators, and the accuracy and timeliness of filings with regulatory authorities;
(c) quarterly reports from the Chief Legal and Governance Officer on compliance with laws and regulations;
(d) quarterly reports from the Vice-President, Chief Data and Trust Officer (“Chief Compliance Officer”) on legal, privacy and regulatory compliance activities; and
(e) the anti-bribery and corruption policy and recommend to the Board for approval any material changes thereto.

4.8 Risk Management

The Committee will:

(a) consider reports on the annual enterprise risk assessment and updates thereto;
(b) except to the extent that responsibility is reserved to the Board or delegated to another Board committee, review management’s implementation of risk policies and procedures, and assess the appropriateness and comprehensiveness of those policies and procedures;
(c) consider reports on security (including cybersecurity);
(d) consider reports on financial risk management including derivative exposure and policies;
(e) consider reports on tax risk management and governance;
(f) consider reports on business continuity, disaster recovery planning and external threat/hazard monitoring for the Company, including climate-related physical and transitional risks; and
(g) review other risk management matters from time to time as the Committee may consider suitable or the Board may specifically direct.

4.9 Other

The Committee will review:

(a) compliance with the Executive Expense Policy of the expenses of the Board and the CEO;
(b) significant related party transactions and actual and potential conflicts of interest relating thereto to verify their propriety and that disclosure is appropriate;
(c) the disclosure policy of the Company and recommend any material changes thereto to the Board for approval; and
(d) evaluate, at least once annually, the adequacy of these terms of reference and the Committee ’s performance, and report its evaluation and any recommendations for change to the Corporate Governance Committee.

The Committee will also have such other duties and responsibilities as are delegated to it and review such other matters as, from time to time, are referred to it by the Board.

5. AUTHORITY

The Committee, in fulfilling its mandate, will have the authority to:

(a) engage and set compensation for independent counsel and other advisors;
(b) communicate directly with the CFO, internal and external auditors, Chief Compliance Officer, Chief Legal and Governance Officer and any other member of management the Committee deems appropriate;
(c) delegate tasks to Committee members or subcommittees of the Committee; and
(d) access appropriate funding as determined by the Committee to carry out its duties.

Exhibit 99.4

Audited Consolidated Financial Statements as at and for the years ended December 31, 2022 and 2021 and Management's Discussion and Analysis

[previously filed on SEDAR]

TELUS CORPORATION

CONSOLIDATED FINANCIAL STATEMENTS

DECEMBER 31, 2022

report of management on internal control over financial reporting

Management of TELUS Corporation (TELUS, or the Company) is responsible for establishing and maintaining adequate internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting.

TELUS' President and Chief Executive Officer and Executive Vice-president and Chief Financial Officer have assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2022, in accordance with the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Internal control over financial reporting is a process designed by, or under the supervision of, the President and Chief Executive Officer and the Executive Vice-president and Chief Financial Officer and effected by the Board of Directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Due to its inherent limitations, internal control over financial reporting may not prevent or detect misstatements on a timely basis. Also, projections of any evaluation of the effectiveness of internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Based on the assessment referenced in the preceding paragraph, management has determined that the Company's internal control over financial reporting is effective as of December 31, 2022. In connection with this assessment, no material weaknesses in the Company's internal control over financial reporting were identified by management as of December 31, 2022.

The Company acquired LifeWorks Inc. on September 1, 2022, as set out in *Note 18(b)* of the consolidated financial statements, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2022, LifeWorks Inc.'s internal control over financial reporting associated with 5%, 11%, 7% and 6% of the Company's consolidated current assets, consolidated current liabilities, consolidated non-current assets and consolidated non-current liabilities, respectively, and total revenue of $350 million and net loss of $5 million included in the Consolidated financial statements of the Company as of and for the year ended December 31, 2022.

Deloitte LLP, an Independent Registered Public Accounting Firm, audited the Company's Consolidated financial statements for the year ended December 31, 2022, and as stated in the Report of Independent Registered Public Accounting Firm, they have expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2022.

/s/ "Doug French"	/s/ "Darren Entwistle"
Doug French Executive Vice-president and Chief Financial Officer February 9, 2023	Darren Entwistle President and Chief Executive Officer February 9, 2023

report of independent registered public accounting firm

To the Shareholders and the Board of Directors of TELUS Corporation

Opinion on the Financial Statements
We have audited the accompanying consolidated statements of financial position of TELUS Corporation and subsidiaries (the Company) as at December 31, 2022 and 2021, the related consolidated statements of income and other comprehensive income, changes in owners' equity, and cash flows, for each of the two years in the period ended December 31, 2022, and the related notes (collectively referred to as the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as at December 31, 2022 and 2021, and its financial performance and its cash flows for each of the two years in the period ended December 31, 2022, in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 9, 2023, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion
These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter
The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation of Intangible Assets Acquired in Business Acquisitions – Refer to Note 1(b) and 18(b) to the financial statements

Critical Audit Matter Description
The Company acquired 100% of the equity of LifeWorks Inc. and recognized the assets acquired and the liabilities assumed at fair value including intangible assets for customer relationships (customer relationships). In determining the fair value of the customer relationships, management was required to make estimates and assumptions in forecasting future cash flows and determining customer attrition rates.

While there are many estimates and assumptions that management makes to determine the fair value of customer relationships, the estimates and assumptions with the highest degree of subjectivity are forecasts of future revenue and customer attrition rates. Performing audit procedures to evaluate these estimates and assumptions required a high degree of auditor judgment and an increased extent of audit effort, including the involvement of fair value specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to forecasts of future revenue, and customer attrition rates used to determine the fair value of customer relationships included the following, among others:

- Evaluated the effectiveness of controls over the valuation of customer relationships at the acquisition date, including management's controls over forecasts of future revenue and customer attrition rates.
- Evaluated the reasonableness of management 's forecasts of future revenue by comparing the forecasts to historical results, third-party industry forecasts, internal communications to management as well as performing inquiries with certain members of management.
- With the assistance of fair value specialists:
  - Tested the source information underlying the determination of the customer attrition rates and developed a range of independent estimates for the customer attrition rates and compared those to the rates selected by management.
  - Assessed the valuation determined by management for customer relationships by considering publicly available market data for comparable transactions.

/s/ "Deloitte LLP"

Chartered Professional Accountants
Vancouver, Canada
February 9, 2023

We have served as the Company's auditor since 2002.



report of independent registered public accounting firm

To the Shareholders and the Board of Directors of TELUS Corporation

Opinion on Internal Control over Financial Reporting
We have audited the internal control over financial reporting of TELUS Corporation and subsidiaries (the Company) as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as at and for the year ended December 31, 2022, of the Company and our report dated February 9, 2023, expressed an unqualified opinion on those financial statements.

As described in the report of management on internal control over financial reporting, management excluded from its assessment the internal control over financial reporting at LifeWorks Inc., which was acquired on September 1, 2022, and whose financial statements constitute 5%, 11%, 7% and 6% of the Company's consolidated current assets, consolidated current liabilities, consolidated non-current assets and consolidated non-current liabilities, respectively, and total revenue of $350 million and net loss of $5 million included in the consolidated financial statements of the Company as at and for the year ended December 31, 2022. Accordingly, our audit did not include the internal control over financial reporting at LifeWorks Inc.

Basis for Opinion
The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying report of management on internal control over financial reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting
A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ "Deloitte LLP"

Chartered Professional Accountants
Vancouver, Canada
February 9, 2023

consolidated statements of income and other comprehensive income

Years ended December 31 (millions except per share amounts)	*Note*	**2022**	2021
OPERATING REVENUES			
Service		**$ 15,956**	$ 14,535
Equipment		**2,336**	2,303
Operating revenues (arising from contracts with customers)	*6*	**18,292**	16,838
Other income	*7*	**120**	420
Operating revenues and other income		**18,412**	17,258
OPERATING EXPENSES			
Goods and services purchased		**7,107**	6,699
Employee benefits expense	*8*	**4,899**	4,269
Depreciation	*17*	**2,226**	2,126
Amortization of intangible assets	*18*	**1,226**	1,090
		15,458	14,184
OPERATING INCOME		**2,954**	3,074
Financing costs	*9*	**632**	796
INCOME BEFORE INCOME TAXES		**2,322**	2,278
Income taxes	*10*	**604**	580
NET INCOME		**1,718**	1,698
OTHER COMPREHENSIVE INCOME (LOSS)	*11*		
Items that may subsequently be reclassified to income			
Change in unrealized fair value of derivatives designated as cash flow hedges		**(101)**	124
Foreign currency translation adjustment arising from translating financial statements of foreign operations		**41**	(130)
		(60)	(6)
Items never subsequently reclassified to income			
Change in measurement of investment financial assets		**7**	57
Employee defined benefit plan re-measurements		**132**	600
		139	657
		79	651
COMPREHENSIVE INCOME		**$ 1,797**	$ 2,349
NET INCOME ATTRIBUTABLE TO:			
Common Shares		**$ 1,615**	$ 1,655
Non-controlling interests		**103**	43
		$ 1,718	$ 1,698
COMPREHENSIVE INCOME ATTRIBUTABLE TO:			
Common Shares		**$ 1,654**	$ 2,341
Non-controlling interests		**143**	8
		$ 1,797	$ 2,349
NET INCOME PER COMMON SHARE	*12*		
Basic		**$ 1.16**	$ 1.23
Diluted		**$ 1.15**	$ 1.22
TOTAL WEIGHTED AVERAGE COMMON SHARES OUTSTANDING			
Basic		**1,396**	1,346
Diluted		**1,403**	1,351

The accompanying notes are an integral part of these consolidated financial statements.

consolidated statements of financial position

As at December 31 (millions)	Note	2022	2021
ASSETS			
Current assets			
Cash and temporary investments, net		**$ 974**	$ 723
Accounts receivable	*6(b)*	**3,297**	2,671
Income and other taxes receivable		**143**	206
Inventories	*1(l)*	**537**	448
Contract assets	*6(c)*	**441**	450
Prepaid expenses	*20*	**617**	521
Current derivative assets	*4(h)*	**83**	13
		6,092	5,032
Non-current assets			
Property, plant and equipment, net	*17*	**17,084**	15,926
Intangible assets, net	*18*	**19,178**	17,485
Goodwill, net	*18*	**9,169**	7,270
Contract assets	*6(c)*	**320**	299
Other long-term assets	*20*	**2,203**	1,971
		47,954	42,951
		$ 54,046	$ 47,983
LIABILITIES AND OWNERS' EQUITY			
Current liabilities			
Short-term borrowings	*22*	**$ 104**	$ 114
Accounts payable and accrued liabilities	*23*	**3,947**	3,705
Income and other taxes payable		**112**	104
Dividends payable	*13*	**502**	449
Advance billings and customer deposits	*24*	**891**	854
Provisions	*25*	**166**	96
Current maturities of long-term debt	*26*	**2,541**	2,927
Current derivative liabilities	*4(h)*	**18**	24
		8,281	8,273
Non-current liabilities			
Provisions	*25*	**538**	774
Long-term debt	*26*	**22,496**	17,925
Other long-term liabilities	*27*	**636**	907
Deferred income taxes	*10*	**4,437**	4,045
		28,107	23,651
Liabilities		**36,388**	31,924
Owners' equity			
Common equity	*28*	**16,569**	15,116
Non-controlling interests		**1,089**	943
		17,658	16,059
		$ 54,046	$ 47,983
Contingent liabilities	*29*		

The accompanying notes are an integral part of these consolidated financial statements.

Approved by the Directors:

/s/ "David L. Mowat"

David L. Mowat
Director

/s/ "R. H. Auchinleck"

R.H. Auchinleck
Director

consolidated statements of changes in owners' equity

(millions)	Note	Common equity						Non-controlling interests	Total
		Equity contributed				Accumulated other comprehensive income			
		Common Shares *(Note 28)*							
		Number of shares	Share capital	Contributed surplus	Retained earnings		Total		
Balance as at January 1, 2021		1,291	$ 7,677	$ 534	$ 3,712	$ 117	$12,040	$ 528	$12,568
Net income		—	—	—	1,655	—	1,655	43	1,698
Other comprehensive income (loss)	*11*	—	—	—	600	86	686	(35)	651
Dividends	*13*	—	—	—	(1,711)	—	(1,711)	—	(1,711)
Dividends reinvested and optional cash payments	*13(b), 14(c)*	24	621	—	—	—	621	—	621
Equity accounted share-based compensation		4	79	49	—	—	128	13	141
Common Shares issued		51	1,267	—	—	—	1,267	—	1,267
Change in ownership interests of subsidiaries	*28(c)*	—	—	430	—	—	430	394	824
Balance as at December 31, 2021		1,370	9,644	1,013	4,256	203	15,116	943	16,059
Net income		**—**	**—**	**—**	**1,615**	**—**	**1,615**	**103**	**1,718**
Other comprehensive income (loss)	*11*	**—**	**—**	**—**	**132**	**(93)**	**39**	**40**	**79**
Dividends	*13*	**—**	**—**	**—**	**(1,899)**	**—**	**(1,899)**	**—**	**(1,899)**
Dividends reinvested and optional cash payments	*13(b), 14(c)*	**23**	**660**	**—**	**—**	**—**	**660**	**—**	**660**
Equity accounted share-based compensation	*14(b)*	**4**	**103**	**18**	**—**	**—**	**121**	**12**	**133**
Issue of Common Shares in business combination	*18(b)*	**34**	**992**	**—**	**—**	**—**	**992**	**—**	**992**
Change in ownership interests of subsidiaries	*28(c)*	**—**	**—**	**(75)**	**—**	**—**	**(75)**	**(9)**	**(84)**
Balance as at December 31, 2022		**1,431**	**$ 11,399**	**$ 956**	**$ 4,104**	**$ 110**	**$16,569**	**$ 1,089**	**$17,658**

The accompanying notes are an integral part of these consolidated financial statements.

consolidated statements of cash flows

Years ended December 31 (millions)	*Note*	**2022**	2021
OPERATING ACTIVITIES			
Net income		**$ 1,718**	$ 1,698
Adjustments to reconcile net income to cash provided by operating activities:			
Depreciation and amortization		**3,452**	3,216
Deferred income taxes	*10*	**31**	47
Share-based compensation expense, net	*14(a)*	**122**	139
Net employee defined benefit plans expense	*15(a)*	**101**	113
Employer contributions to employee defined benefit plans	*15(a)*	**(44)**	(53)
Non-current contract assets		**(21)**	(6)
Non-current unbilled customer finance receivables	*20*	**(26)**	(184)
Unrealized change in forward element of virtual power purchase agreements	*9*	**(193)**	—
Gain on disposition of financial solutions business	*7*	**—**	(410)
Loss from equity accounted investments	*7, 21*	**7**	10
Other		**(143)**	(100)
Net change in non-cash operating working capital	*31(a)*	**(193)**	(82)
Cash provided by operating activities		**4,811**	4,388
INVESTING ACTIVITIES			
Cash payments for capital assets, excluding spectrum licences	*31(a)*	**(3,647)**	(3,097)
Cash payments for spectrum licences	*18(a)*	**—**	(2,219)
Cash payments for acquisitions, net	*18(b)*	**(1,547)**	(468)
Advances to, and investment in, real estate joint ventures and associates	*21*	**(21)**	(46)
Real estate joint venture receipts	*21*	**5**	4
Proceeds on disposition		**16**	508
Investment in portfolio investments and other		**(214)**	(148)
Cash used by investing activities		**(5,408)**	(5,466)
FINANCING ACTIVITIES	*31(a)*		
Common Shares issued	*28(a)*	**—**	1,300
Dividends paid to holders of Common Shares	*13(a)*	**(1,188)**	(1,045)
Issue (repayment) of short-term borrowings, net		**(17)**	10
Long-term debt issued	*26*	**10,271**	4,891
Redemptions and repayment of long-term debt	*26*	**(8,049)**	(4,972)
Shares of subsidiary issued and sold to (purchased from) non-controlling interests, net	*28(c)*	**(123)**	827
Other		**(46)**	(58)
Cash provided by financing activities		**848**	953
CASH POSITION			
Increase (decrease) in cash and temporary investments, net		**251**	(125)
Cash and temporary investments, net, beginning of period		**723**	848
Cash and temporary investments, net, end of period		**$ 974**	$ 723
SUPPLEMENTAL DISCLOSURE OF OPERATING CASH FLOWS			
Interest paid		**$ (816)**	$ (744)
Interest received		**$ 17**	$ 17
Income taxes paid, net			
In respect of comprehensive income		**$ (514)**	$ (563)
In respect of business acquisitions		**(5)**	(38)
		$ (519)	$ (601)

The accompanying notes are an integral part of these consolidated financial statements.

DECEMBER 31, 2022

TELUS Corporation is one of Canada's largest telecommunications companies, providing a wide range of technology solutions, which include mobile and fixed voice and data telecommunications services and products, healthcare software and technology solutions (including employee and family assistance programs and benefits administration), agriculture and consumer goods services (software, data management and data analytics-driven smart-food chain and consumer goods technologies), and digitally-led customer experiences. Data services include: internet protocol; television; hosting, managed information technology and cloud-based services; and home and business security.

TELUS Corporation was incorporated under the *Company Act* (British Columbia) on October 26, 1998, under the name BCT.TELUS Communications Inc. (BCT). On January 31, 1999, pursuant to a court-approved plan of arrangement under the *Canada Business Corporations Act* among BCT, BC TELECOM Inc. and the former Alberta-based TELUS Corporation (TC), BCT acquired all of the shares of BC TELECOM Inc. and TC in exchange for Common Shares and Non-Voting Shares of BCT, and BC TELECOM Inc. was dissolved. On May 3, 2000, BCT changed its name to TELUS Corporation and in February 2005, TELUS Corporation transitioned under the *Business Corporations Act* (British Columbia), successor to the *Company Act* (British Columbia). TELUS Corporation maintains its registered office at Floor 7, 510 West Georgia Street, Vancouver, British Columbia, V6B 0M3.

The terms "TELUS", "we", "us", "our" or "ourselves" refer to TELUS Corporation and, where the context of the narrative permits or requires, its subsidiaries. Our principal subsidiaries are: TELUS Communications Inc., in which, as at December 31, 2022, we have a 100% equity interest; and TELUS International (Cda) Inc., in which, as at December 31, 2022, we have a 56.6% equity interest, as discussed further in *Note 28(c)*, and which completed its initial public offering in February 2021. Although they have not had any effect on our current determination of which are our principal subsidiaries, we made material business acquisitions during the year ended December 31, 2022, as set out in *Note 18(b)*.

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1 summary of significant accounting policies

Our consolidated financial statements are expressed in Canadian dollars. The generally accepted accounting principles that we apply are International Financial Reporting Standards as issued by the International Accounting Standards Board (IFRS-IASB), and Canadian generally accepted accounting principles.

Generally accepted accounting principles require that we disclose the accounting policies we have selected in those instances in which we have been obligated to choose from among various accounting policies that comply with generally accepted accounting principles. In certain other instances, including those in which no selection among policies is allowed, we are also required to disclose how we have applied certain accounting policies. In the selection and application of accounting policies, we consider, among other factors, the fundamental qualitative characteristics of useful financial information, namely relevance and faithful representation. In our assessment, the accounting policy disclosures we are required to make are not all equally significant for us, as set out in the accompanying table; their relative significance for us will evolve over time, as we do.

These consolidated financial statements for each of the years ended December 31, 2022 and 2021, were authorized by our Board of Directors for issue on February 9, 2023.

	Accounting policy requiring a more significant choice among policies and/or a more significant application of judgment	
Accounting policy	Yes	No
General application		
(a) Consolidation		X
(b) Use of estimates and judgments	X	
(c) Financial instruments – recognition and measurement		X
(d) Hedge accounting		X
Results of operations focused		
(e) Revenue recognition	X	
(f) Depreciation, amortization and impairment	X	
(g) Translation of foreign currencies		X
(h) Income and other taxes	X	
(i) Share-based compensation		X
(j) Employee future benefit plans	X	
Financial position focused		
(k) Cash and temporary investments, net		X
(l) Inventories		X
(m) Property, plant and equipment; intangible assets	X	
(n) Investments		X

(a) Consolidation

Our consolidated financial statements include our accounts and the accounts of all of our subsidiaries, of which the principal ones are: TELUS Communications Inc. and TELUS International (Cda) Inc. TELUS Communications Inc. includes substantially all of our mobile and fixed operations, excluding the customer experience and digital enablement transformation provided through the customer care and business services business of TELUS International (Cda) Inc.

Our financing arrangements and those of our wholly owned subsidiaries do not impose restrictions on inter-corporate dividends.

On a continuing basis, we review our corporate organization and effect changes as appropriate so as to enhance the value of TELUS Corporation. This process can, and does, affect which of our subsidiaries are considered principal subsidiaries at any particular point in time.

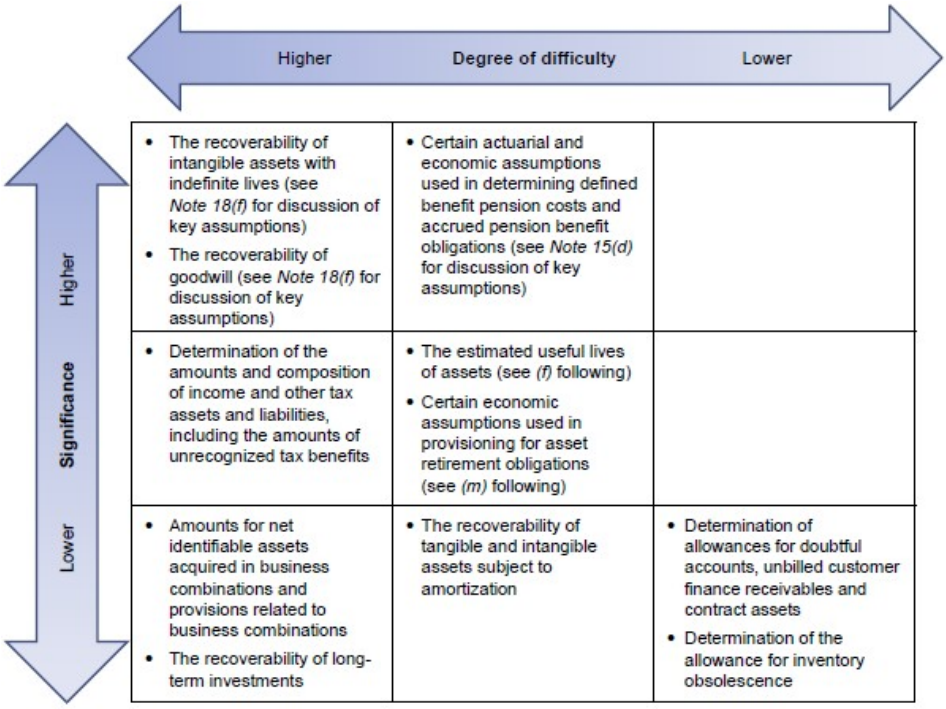
(b) Use of estimates and judgments

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates, assumptions and judgments that affect: the reported amounts of assets and liabilities at the date of the financial statements; the disclosure of contingent assets and liabilities at the date of the financial statements; and the reported amounts and classification of revenue and expense during the reporting period. Actual results could differ from those estimates.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

Estimates

Examples of the significant estimates and assumptions that we make, and their relative significance and degree of difficulty, are set out in the graphic at right.



Judgments

Examples of our significant judgments, apart from those involving estimation, include the following:

- Assessments about whether line items are sufficiently material to warrant separate presentation in the primary financial statements and, if not, whether they are sufficiently material to warrant separate presentation in the notes to the financial statements. In the normal course, we make changes to our assessments regarding materiality for presentation so that they reflect current economic conditions. Due consideration is given to the view that it is reasonable to expect differing opinions of what is, and is not, material.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

- In respect of revenue-generating transactions, we must make judgments that affect the timing of the recognition of revenue, as set out following:
  - We have millions of multi-year contracts with our customers and we must make judgments about when we have satisfied our performance obligations to our customers, either over a period of time or at a point in time. Service revenues are recognized based on customers' access to, or usage of, our telecommunications infrastructure; we believe that this method faithfully depicts the transfer of the services, and thus the revenues are recognized as the services are made available and/or rendered. We consider our performance obligations arising from the sale of equipment to have been satisfied when the equipment has been delivered to, and accepted by, the end-user customers (see *(e)* following).
  - Principally in the context of revenue-generating transactions involving mobile handsets, we must make judgments as to whether third-party re-sellers that deliver equipment to our customers are acting in the transactions as principals or as our agents. Upon due consideration of the relevant indicators, we believe that the decision to consider the re-sellers to be acting, solely for accounting purposes, as our agents is more representative of the economic substance of the transactions, as we are the primary obligor to the end-user customers. The effect of this judgment is that no equipment revenue is recognized upon the transfer of inventory to third-party re-sellers.
  - We compensate third-party re-sellers and our employees for generating revenues, and we must make judgments as to whether such sales-based compensation amounts are costs incurred to obtain contracts with customers that should be capitalized (see *Note 20*). We believe that compensation amounts tangentially attributable to obtaining a contract with a customer, because the amount of such compensation could be affected in ways other than by simply obtaining that contract, should be expensed as incurred; compensation amounts directly attributable to obtaining a contract with a customer should be capitalized and subsequently amortized on a systematic basis, consistent with the satisfaction of our associated performance obligations.

    Judgment must also be exercised in the capitalization of costs incurred to fulfill revenue-generating contracts with customers. Such fulfilment costs are those incurred to set up, activate or otherwise implement services involving access to, or usage of, our telecommunications infrastructure that would not otherwise be capitalized as property, plant, equipment and/or intangible assets (see *Note 20*).

- The decision to depreciate and amortize any property, plant, equipment (including right-of-use lease assets) and intangible assets that are subject to amortization on a straight-line basis, as we believe that this method reflects the consumption of resources related to the economic lifespan of those assets better than an accelerated method and is more representative of the economic substance of the underlying use of those assets.
- The preparation of financial statements in accordance with generally accepted accounting principles requires management to make judgments which affect the financial statement disclosure of information regularly reviewed by our chief operating decision-maker that is used to make resource allocation decisions and to assess performance (segment information, *Note 5*).

  A significant judgment we have historically made is the distinction between the operations and cash flows of our business units (which extends to allocations of both direct and indirect expenses and capital expenditures). It is often difficult and impractical to objectively and clearly distinguish between the operations and cash flows of our business units, and the assets from which those cash flows arise. This impracticality is evidence of the interdependence of our business units. As our business continues to evolve, new cash-generating units may also develop.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

- The view that our spectrum licences granted by Innovation, Science and Economic Development Canada (including spectrum licences that have been subordinated to us) will likely be renewed; that we intend to renew them; that we believe we have the financial and operational ability to renew them; and thus, that they have indefinite lives, as discussed further in *Note 18(e)*.
- In connection with the annual impairment testing of intangible assets with indefinite lives and goodwill, there may be instances in which we must exercise judgment in allocating our net assets (including shared corporate and administrative assets) to our cash-generating units when determining their carrying amounts.
- In respect of claims and lawsuits, as discussed further in *Note 29(a)*, the determination of whether an item is a contingent liability or whether an outflow of resources is probable and thus is to be accounted for as a provision.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

(c) Financial instruments – recognition and measurement

In respect of the recognition and measurement of financial instruments, we have adopted the following policies:

- Regular-way purchases or sales of financial assets or financial liabilities (purchases or sales that require actual delivery of financial assets or financial liabilities) are recognized on the settlement date. We have selected this method, as the benefits of using the trade date method were not expected to exceed the costs of selecting and implementing that method.
- Transaction costs, other than in respect of items held for trading, are added to the initial fair value of the acquired financial asset or financial liability. We have selected this method, as we believe that it results in a better matching of the transaction costs with the periods in which we benefit from those costs.
- A contract to receive renewable energy credits and the associated virtual power purchase agreement are distinct units of account. We have selected this method as we believe the receipt of the renewable energy credits is an executory contract and the virtual power purchase agreement meets the definition of a derivative.

(d) Hedge accounting

General

We apply hedge accounting to the financial instruments used to establish designated currency hedging relationships for certain U.S. dollar-denominated future purchase commitments and debt repayments, as set out in *Note 4(a)* and *(d)*.

Hedge accounting

The purpose of hedge accounting, in respect of our designated hedging relationships, is to ensure that counterbalancing gains and losses are recognized in the same periods. We have chosen to apply hedge accounting, as we believe that it is more representative of the economic substance of the underlying transactions.

In order to apply hedge accounting, a high correlation (which indicates effectiveness) is required in the offsetting changes in the risk-associated values of the financial instruments (the hedging items) used to establish the designated hedging relationships and all, or a part, of the asset, liability or transaction having an identified risk exposure that we have taken steps to modify (the hedged items). We assess the anticipated effectiveness of designated hedging relationships at inception and their actual effectiveness for each reporting period thereafter. We consider a designated hedging relationship to be effective if the following critical terms match between the hedging item and the hedged item: the notional amount of the hedging item and the principal amount of the hedged item; maturity dates; payment dates; and interest rate index (if, and as, applicable). As set out in *Note 4(i)*, any ineffectiveness, such as would result from a difference between the notional amount of the hedging item and the principal amount of the hedged item, or from a previously effective designated hedging relationship becoming ineffective, is reflected in the Consolidated statements of income and other comprehensive income as Financing costs if in respect of long-term debt and as Goods and services purchased if in respect of U.S. dollar-denominated future purchase commitments.

Hedging assets and liabilities

In the application of hedge accounting, an amount (the hedge value) is recorded in the Consolidated statements of financial position in respect of the fair value of the hedging items. The net difference, if any, between the amounts recognized in the determination of net income and the amounts necessary to reflect the fair value of the designated cash flow hedging items recorded in the Consolidated statements of financial position is recognized as a component of Other comprehensive income, as set out in *Note 11*.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

(e) Revenue recognition

General

We earn the majority of our TELUS technology solutions service revenues from access to, and usage of, our telecommunications infrastructure, including:

- Mobile network (voice and data);
- Fixed data services (which include: internet protocol; television; hosting, managed information technology and cloud-based services; and home and business security);
- Fixed voice services; and
- Health services.

The majority of the balance of our TELUS technology solutions revenues (mobile equipment and other service; fixed equipment and other service; agriculture and consumer goods services (which include: software, data management and data analytics-driven smart-food chain and consumer goods technologies)) arises from providing services and products facilitating access to, and usage of, telecommunications infrastructure. Service revenues from our digitally-led customer experiences – TELUS International segment arise from the provision of digital customer experience solutions, including artificial intelligence and content management solutions.

We offer complete and integrated solutions to meet our customers' needs. These solutions may involve deliveries of multiple services and products (our performance obligations) that occur at different points in time and/or over different periods of time; as referred to in *(b)*, this is a significant judgment for us. As required, the performance obligations of these multiple-element arrangements are identified and the transaction price for the entire multiple-element arrangement is determined and allocated among the performance obligations based upon our relative stand-alone selling prices for each of them; our relevant revenue recognition policies are then applied, so that revenue is recognized when, or as, we satisfy the performance obligations. To the extent that variable consideration is included in determining the minimum transaction price, it is constrained to the "minimum spend" amount required in a contract with a customer. Service revenues arising from contracts with customers typically have variable consideration, because customers have the ongoing ability to both add and remove features and services, and because customer usage of our telecommunications infrastructure may exceed the base amounts provided for in their contracts.

For the purposes of IFRS 15, *Revenue from Contracts with Customers*, our contracts with customers are not considered to have a significant financing component. With the exception of both equipment-related upfront payments that may be required under the terms of contracts with customers and in-store "cash and carry" sales of equipment and accessories, payments are typically due 30 days from the billing date. Billings are typically rendered on a monthly basis.

Multiple contracts with a single customer are normally accounted for as separate arrangements. In instances where multiple contracts are entered into with a customer in a short period of time, the contracts are reviewed as a group to ensure that, as with multiple-element arrangements, their relative transaction prices are appropriate.

Lease accounting is applied to an accounting unit if it conveys to a customer the right to use a specific asset but does not convey the risks and/or benefits of ownership.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

Our revenues are recorded net of any value-added and/or sales taxes billed to the customer concurrent with a revenue-generating transaction.

We use the following revenue accounting practical expedients provided for in IFRS 15, *Revenue from Contracts with Customers*:

- No adjustment of the contracted amount of consideration for the effects of financing components when, at the inception of a contract, we expect that the effect of the financing component is not significant at the individual contract level.
- No deferral of contract acquisition costs when the amortization period for such costs would be one year or less.
- When estimating minimum transaction prices allocated to any remaining unfulfilled, or partially unfulfilled, performance obligations, exclusion of amounts arising from contracts originally expected to have a duration of one year or less, as well as amounts arising from contracts under which we may recognize and bill revenue in an amount that corresponds directly with our completed performance obligations.

Contract assets

Many of our multiple-element arrangements arise from bundling the sale of equipment (*e.g.* a mobile handset) with a contracted service period. Although the customer receives the equipment at contract inception and the revenue from the associated completed performance obligation is recognized at that time, the customer's payment for the equipment will effectively be received rateably over the contracted service period to the extent it is not received as a lump-sum amount at contract inception. The difference between the equipment revenue recognized and the associated amount cumulatively billed to the customer is recognized on the Consolidated statements of financial position as a contract asset and/or an unbilled customer finance receivable, depending upon the form of the contract.

Contract assets may also arise in instances where we give consideration to a customer. When we receive no identifiable, separable benefit for consideration given to a customer, the amount of the consideration is recognized as a reduction of revenue rather than as an expense. Such amounts are included in the determination of transaction prices for allocation purposes in multiple-element arrangements.

- Some forms of consideration given to a customer, effectively at contract inception, such as rebates (including prepaid non-bank cards) and/or equipment, are considered to be performance obligations in a multiple-element arrangement. Although the performance obligation is satisfied at contract inception, the customer's payment associated with the performance obligation will effectively be received rateably over the associated contracted service period. The difference between the revenue arising from the satisfied performance obligation and the associated amount cumulatively billed to the customer is recognized on the Consolidated statements of financial position as a contract asset.
- Other forms of consideration given to a customer, either at contract inception or over a period of time, such as discounts (including prepaid bank cards), may result in us receiving no identifiable, separable benefit and thus are not considered performance obligations. Such consideration is recognized as a reduction of revenue rateably over the term of the contract. The difference between the consideration provided and the associated amount recognized as a reduction of revenue is recognized on the Consolidated statements of financial position as a contract asset.

Contract liabilities

Advance billings are recorded when billing occurs prior to provision of the associated services; such advance billings are recognized as revenue in the period in which the services and/or equipment are provided (see *Note 24*). Similarly, and as appropriate, upfront customer activation and connection fees are deferred and recognized over the average expected term of the customer relationship.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

Costs of contract acquisition and contract fulfilment

Costs of contract acquisition (typically commissions) and costs of contract fulfilment are capitalized and recognized as an expense, generally over the life of the contract on a systematic and rational basis consistent with the pattern of the transfer of goods or services to which the asset relates. The amortization of such costs is included in the Consolidated statements of income and other comprehensive income as a component of Goods and services purchased, with the exception of amounts paid to our employees, which are included as Employee benefits expense.

The total cost of mobile equipment sold to customers and advertising and promotion costs related to initial customer acquisition are expensed as incurred; the cost of equipment we own that is situated at customers' premises and associated installation costs are capitalized as incurred. Costs of advertising production, advertising airtime and advertising space are expensed as incurred.

Voice and data

We recognize revenues on an accrual basis and include an estimate of revenues earned but unbilled. Mobile and fixed service revenues are recognized based upon access to, and usage of, our telecommunications infrastructure and upon contract fees.

Advance billings are recorded when billing occurs prior to provision of the associated services; such advance billings are recognized as revenue in the period in which the services are provided. Similarly, and as appropriate, upfront customer activation and connection fees are deferred and recognized over the average expected term of the customer relationship.

We use the liability method of accounting for the amounts of our quality of service rate rebates that arise from the jurisdiction of the Canadian Radio-television and Telecommunications Commission (CRTC).

The CRTC has established a mechanism to subsidize local exchange carriers, such as ourselves, that provide residential basic telephone service to high cost serving areas. The CRTC has determined the per network access line/per band subsidy rate for all local exchange carriers. We recognize the subsidy on an accrual basis by applying the subsidy rate to the number of residential network access lines we provide in high cost serving areas, as discussed further in *Note 7*. Differences, if any, between interim and final subsidy rates set by the CRTC are accounted for as a change in estimate in the period in which the CRTC finalizes the subsidy rate.

Other and mobile equipment

We recognize product revenues, including amounts related to mobile handsets sold to re-sellers and customer premises equipment, when the products are both delivered to, and accepted by, the end-user customers, irrespective of which supply channel delivers the product. With respect to mobile handsets sold to re-sellers, we consider ourselves to be the principal and primary obligor to the end-user customers. Revenues from operating leases of equipment are recognized on a systematic and rational basis (normally a straight-line basis) over the term of the lease. We recognize revenues that arise from employee and family assistance programs and from software solutions (including benefits administration) in the accounting period in which they are provided.

We recognize revenues that arise from the provision of digital customer experience solutions, including artificial intelligence and content management solutions, in the accounting period in which they are provided, typically on a per-productive hour or per-transaction basis.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

(f) Depreciation, amortization and impairment

Depreciation and amortization

Property, plant and equipment (including right-of-use lease assets) are depreciated on a straight-line basis over their estimated useful lives (lease terms for right-of-use lease assets) as determined by a continuing program of asset life studies. Depreciation includes amortization of leasehold improvements, which are normally amortized over the lesser of their expected average service lives or the terms of the associated leases. Intangible assets with finite lives (intangible assets subject to amortization) are amortized on a straight-line basis over their estimated useful lives, which are reviewed at least annually and adjusted as appropriate. As referred to in *(b)*, the use of a straight-line basis of depreciation and amortization is a significant judgment for us.

Estimated useful lives for the majority of our property, plant and equipment (including right-of-use lease assets) and intangible assets subject to depreciation and amortization are as follows:

	Estimated useful lives
Property, plant and equipment (including right-of-use lease assets) subject to depreciation	
Network assets	
Outside plant	17 to 40 years
Inside plant	4 to 25 years
Mobile site equipment	5 to 7 years
Real estate right-of-use lease assets	5 to 20 years
Balance of depreciable property, plant and equipment and right-of-use lease assets	3 to 40 years
Intangible assets subject to amortization	
Customer contracts and related customer relationships	4 to 15 years
Fixed subscriber base	25 years
Software	3 to 10 years
Access to rights-of-way, crowdsource assets and other	5 to 30 years

Impairment – general

Impairment testing compares the carrying values of the assets or cash-generating units being tested with their recoverable amounts (the recoverable amount being the greater of an asset's or a cash-generating unit's value in use or its fair value less costs of disposal); as referred to in *(b)*, this is a significant estimate for us. Impairment losses are immediately recognized to the extent that the carrying value of an asset or a cash-generating unit exceeds its recoverable amount. Should the recoverable amounts for impaired assets or cash-generating units subsequently increase, the impairment losses previously recognized (other than in respect of goodwill) may be reversed to the extent that the reversal is not a result of "unwinding of the discount" and that the resulting carrying values do not exceed the carrying values which would have been the result if no impairment losses had been recognized previously.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

Impairment – property, plant and equipment; intangible assets subject to amortization

The continuing program of asset life studies considers such items as the timing of technological obsolescence, competitive pressures and future infrastructure utilization plans; these considerations could also indicate that the carrying value of an asset may not be recoverable, in which case an impairment loss would be recognized.

Impairment – intangible assets with indefinite lives; goodwill

The carrying values of intangible assets with indefinite lives and goodwill are periodically tested for impairment. The frequency of impairment testing is generally the reciprocal of the stability of any relevant events and circumstances, but intangible assets with indefinite lives and goodwill must, at a minimum, be tested annually; we have selected December as the time of our annual test.

We assess our intangible assets with indefinite lives by comparing the recoverable amounts of our cash-generating units to their carrying values (including the intangible assets with indefinite lives allocated to a cash-generating unit, but excluding any goodwill allocated to a cash-generating unit). To the extent that the carrying value of a cash-generating unit (including the intangible assets with indefinite lives allocated to the cash-generating unit, but excluding any goodwill allocated to the cash-generating unit) exceeds its recoverable amount, the excess amount would be recorded as a reduction of the carrying value of intangible assets with indefinite lives.

Subsequent to assessing intangible assets with indefinite lives, we assess goodwill by comparing the recoverable amounts of our cash-generating units (or group of cash-generating units) to their carrying values (including the intangible assets with indefinite lives and any goodwill allocated to a cash-generating unit or group of cash-generating units). To the extent that the carrying value of a cash-generating unit (including the intangible assets with indefinite lives and the goodwill allocated to the cash-generating unit) exceeds its recoverable amount, the excess amount would first be recorded as a reduction of the carrying value of goodwill and any remainder would be recorded as a reduction of the carrying values of the assets of the cash-generating unit on a pro-rated basis.

(g) Translation of foreign currencies

Trade transactions completed in foreign currencies are translated into Canadian dollars at the rates of exchange prevailing at the time of the transactions. Monetary assets and liabilities denominated in foreign currencies are translated into Canadian dollars at the rate of exchange in effect at the statement of financial position date, with any resulting gain or loss recorded in the Consolidated statements of income and other comprehensive income as a component of Financing costs, as set out in *Note 9*. Hedge accounting is applied in specific instances, as discussed further in *(d)* preceding.

Certain of our foreign subsidiaries do not have the Canadian dollar as their functional currency. Foreign exchange gains and losses arising from the translation of these foreign subsidiaries' accounts into Canadian dollars are reported as a component of other comprehensive income, as set out in *Note 11*.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

(h) Income and other taxes

We follow the liability method of accounting for income taxes; as referred to in *(b)*, this is a significant estimate for us. Under this method, current income taxes are recognized for the estimated income taxes payable for the current year. Deferred income tax assets and liabilities are recognized for temporary differences between the tax and accounting bases of assets and liabilities, and also for any benefits of losses and Investment Tax Credits available to be carried forward to future years for tax purposes that are more likely than not to be realized. The amounts recognized in respect of deferred income tax assets and liabilities are based upon the expected timing of the reversal of temporary differences or the usage of tax losses and the application of the substantively enacted tax rates at the time of reversal or usage.

We account for any changes in substantively enacted income tax rates affecting deferred income tax assets and liabilities in full in the period in which the changes are substantively enacted. We account for changes in the estimates of tax balances for prior years as estimate revisions in the period in which changes in the estimates arise; we have selected this approach, as its emphasis on the statement of financial position is more consistent with the liability method of accounting for income taxes.

Our operations are complex and the related domestic and foreign tax interpretations, regulations, legislation and jurisprudence are continually changing. As a result, there are usually some tax matters in question that result in uncertain tax positions. We recognize the income tax benefit of an uncertain tax position only when it is more likely than not that the ultimate determination of the tax treatment of the position will result in that benefit being realized; however, this does not mean that tax authorities cannot challenge these positions. We accrue an amount for interest charges on current tax liabilities that have not been funded, which would include interest and penalties arising from uncertain tax positions. We include such charges in the Consolidated statements of income and other comprehensive income as a component of Financing costs.

Our research and development activities may be eligible to earn Investment Tax Credits, for which the determination of eligibility is a complex matter. We recognize Investment Tax Credits only when there is reasonable assurance that the ultimate determination of the eligibility of our research and development activities will result in the Investment Tax Credits being received, at which time they are accounted for using the cost reduction method, whereby such credits are deducted from the expenditures or assets to which they relate, as set out in *Note 10(c)*.

(i) Share-based compensation

General

When share-based compensation vests in its entirety at one future point in time (cliff-vesting), we recognize the expense on a straight-line basis over the vesting period. When share-based compensation vests in tranches (graded-vesting), we recognize the expense using the accelerated expense attribution method. An estimate of forfeitures during the vesting period is made at the date of grant of such share-based compensation; this estimate is adjusted to reflect actual experience.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

Restricted share units

In respect of restricted share units with neither an equity settlement feature nor market performance conditions, as set out in *Note 14(b)*, we accrue a liability equal to the product of the number of vesting restricted share units multiplied by the fair market value of the corresponding Common Shares at the end of the reporting period. Similarly, we accrue a liability for the notional subset of our restricted share units without an equity settlement feature and with market performance conditions, using a fair value determined from a Monte Carlo simulation. Restricted share units that have an equity settlement feature are accounted for as equity instruments. The expense for restricted share units that do not ultimately vest is reversed against the expense that was previously recorded in their respect.

Share option awards

A fair value for share option awards is determined at the date of grant and is recognized in the financial statements. Proceeds arising from the exercise of share option awards are credited to share capital, as are the recognized grant-date fair values of the exercised share option awards.

Share option awards that have a net-equity settlement feature, as set out in *Note 14(d)*, are accounted for as equity instruments. We have selected the equity instrument fair value method of accounting for the net-equity settlement feature, as it is consistent with the accounting treatment applied to the associated share option awards.

(j) Employee future benefit plans

Defined benefit plans

We accrue amounts for our obligations under employee defined benefit plans and the related costs, net of plan assets. The cost of pensions and other retirement benefits earned by employees is actuarially determined using the accrued benefit method pro-rated on service and management's best estimates of both salary escalation and the retirement ages of employees. In the determination of net income, net interest for each plan, which is the product of the plan's surplus (deficit) multiplied by the discount rate, is included as a component of Financing costs, as set out in *Note 9*.

An amount reflecting the effect of differences between the discount rate and the actual rate of return on plan assets is included as a component of employee defined benefit plan re-measurements within Other comprehensive income, as set out in *Note 11* and *Note 15*. We determine the maximum economic benefit available from the plans' assets on the basis of reductions in future contributions to the plans.

On an annual basis, at a minimum, the defined benefit plan key assumptions are assessed and revised as appropriate; as referred to in *(b)*, these are significant estimates for us.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

Defined contribution plans

We use defined contribution accounting for the Telecommunication Workers Pension Plan and the British Columbia Public Service Pension Plan, which cover certain of our employees and provide defined benefits to their members. In the absence of any regulations governing the calculation of the share of the underlying financial position and plan performance attributable to each employer-participant, and in the absence of contractual agreements between the plans and the employer-participants related to the financing of any shortfall (or distribution of any surplus), we account for these plans as defined contribution plans, in accordance with International Accounting Standard 19, *Employee Benefits*.

(k) Cash and temporary investments, net

Cash and temporary investments, which may include investments in money market instruments that are purchased three months or less from maturity, are presented net of outstanding items, including cheques written but not cleared by the related banks as at the statement of financial position date. Cash and temporary investments, net, are classified as a liability in the statement of financial position when the total amount of all cheques written but not cleared by the related banks exceeds the amount of cash and temporary investments. When cash and temporary investments, net, are classified as a liability, they may also include overdraft amounts drawn on our bilateral bank facilities, which revolve daily and are discussed further in *Note 22*.

(l) Inventories

Our inventories primarily consist of mobile handsets, parts and accessories totalling $414 million as at December 31, 2022 (2021 – $381 million), and communications equipment held for resale. Inventories are valued at the lower of cost and net realizable value, with cost being determined on an average cost basis. Costs of goods sold for the year ended December 31, 2022, totalled $2.3 billion (2021 – $2.2 billion).

(m) Property, plant and equipment; intangible assets

General

Property, plant and equipment and intangible assets are recorded at historical cost, which for self-constructed property, plant and equipment includes materials, direct labour and applicable overhead costs. For internally developed, internal-use software, the historical cost recorded includes materials, direct labour and direct labour-related costs. Where property, plant and equipment construction projects are of sufficient size and duration, an amount is capitalized for the cost of funds used to finance construction, as set out in *Note 9*. The rate for calculating the capitalized financing cost is based on the weighted average cost of borrowing that we experience during the reporting period.

When we sell property, plant and/or equipment, the net book value is netted against the sale proceeds and the difference, as set out in *Note 7*, is included in the Consolidated statements of income and other comprehensive income as a component of Other income.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

Asset retirement obligations

Provisions for liabilities, as set out in *Note 25*, are recognized for statutory, contractual or legal obligations, normally when incurred, associated with the retirement of property, plant and equipment (primarily certain items of outside plant and mobile site equipment) when those obligations result from the acquisition, construction, development and/or normal operation of the assets; as referred to in *(b)*, this is a significant estimate for us. The obligations are measured initially at fair value, which is determined using present value methodology, and the resulting costs are capitalized as a part of the carrying value of the related asset. In subsequent periods, the provisions for these liabilities are adjusted for the accretion of discount, for any changes in the market-based discount rate and for any changes in the amount or timing of the underlying future cash flows. The capitalized asset retirement cost is depreciated on the same basis as the related asset and the discount accretion, as set out in *Note 9*, is included in the Consolidated statements of income and other comprehensive income as a component of Financing costs.

(n) Investments

We account for our investments in companies over which we have significant influence, as discussed further in *Note 21*, using the equity method of accounting, whereby the investments are initially recorded at cost and subsequently adjusted to recognize our share of earnings or losses of the investee companies and any earnings distributions received. The excess of the cost of an equity investment over its underlying book value at the date of acquisition, except for goodwill, is amortized over the estimated useful lives of the underlying assets to which the excess cost is attributed.

Similarly, we account for our interests in the real estate joint ventures, as discussed further in *Note 21*, using the equity method of accounting. Unrealized gains and losses resulting from transactions with (including contributions to) the real estate joint ventures are deferred in proportion to our remaining interest in the real estate joint ventures.

We account for our other long-term investments at their fair values unless they are investment securities that do not have either quoted market prices in an active market or other clear and objective evidence of fair value. When we do not account for our other long-term investments at their fair values, we use the cost basis of accounting, whereby the investments are initially recorded at cost, and earnings from those investments are recognized only to the extent received or receivable. When there is a significant or prolonged decline in the value of an investment that is classified as one of our other long-term investments, its carrying value is adjusted to its estimated fair value.

Denotes accounting policy requiring, for us, a more significant choice among accounting policies and/or a more significant application of judgment.

2 accounting policy developments

Standards, interpretations and amendments to standards and interpretations in the reporting period not yet effective and not yet applied

- In February 2021, the International Accounting Standards Board issued narrow-scope amendments to IAS 1, *Presentation of Financial Statements*, IFRS Practice Statement 2, *Making Materiality Judgements*, and IAS 8*, Accounting Policies, Changes in Accounting Estimates and Errors*. The amendments are effective for annual periods beginning on or after January 1, 2023, although earlier application was permitted. The amendments require the disclosure of material accounting policy information rather than disclosing significant accounting policies, and clarify how to distinguish changes in accounting policies from changes in accounting estimates. We are currently assessing the impacts of the amended standards, but do not expect that our financial disclosure will be materially affected by the application of the amendments.
- In May 2021, the International Accounting Standards Board issued targeted amendments to IAS 12, *Income Taxes*. The amendments are effective for annual periods beginning on or after January 1, 2023, although earlier application was permitted. With a view to reducing diversity in reporting, the amendments clarify that companies are required to recognize deferred taxes on transactions where both assets and liabilities are recognized, such as with leases and asset retirement (decommissioning) obligations. Based upon our current facts and circumstances, we do not expect that our financial performance or disclosure will be materially affected by the application of the amended standard.

3 capital structure financial policies

General

Our objective when managing financial capital is to maintain a flexible capital structure that optimizes the cost and availability of capital at acceptable risk.

In our definition of financial capital, we include common equity (excluding accumulated other comprehensive income), non-controlling interests, long-term debt (including long-term credit facilities, commercial paper backstopped by long-term credit facilities and any hedging assets or liabilities associated with long-term debt items, net of amounts recognized in accumulated other comprehensive income), cash and temporary investments, and short-term borrowings, including those arising from securitized trade receivables.

We manage our financial capital structure and make adjustments to it in light of changes in economic conditions and the risk characteristics of our business. In order to maintain or adjust our financial capital structure, we may adjust the amount of dividends paid to holders of Common Shares, purchase Common Shares for cancellation pursuant to normal course issuer bids, issue new shares (including Common Shares and TELUS International (Cda) Inc. subordinate voting shares), issue new debt, issue new debt to replace existing debt with different characteristics, and/or increase or decrease the amount of trade receivables sold to an arm's-length securitization trust.

During 2022, our financial objectives, which are reviewed annually, were unchanged from 2021. We believe that our financial objectives are supportive of our long-term strategy.

We monitor financial capital utilizing a number of measures, including: net debt to earnings before interest, income taxes, depreciation and amortization (EBITDA*) – excluding restructuring and other costs ratio; coverage ratios; and dividend payout ratios.

* EBITDA is not a standardized financial measure under IFRS-IASB and might not be comparable to similar measures disclosed by other issuers; we define EBITDA as operating revenues and other income less goods and services purchased and employee benefits expense. We report EBITDA because it is a key measure that management uses to evaluate the performance of our business, and it is also utilized in measuring compliance with certain debt covenants.

Debt and coverage ratios

Net debt to EBITDA – excluding restructuring and other costs is calculated as net debt at the end of the period, divided by 12-month trailing EBITDA – excluding restructuring and other costs. This measure, historically, is substantially similar to the leverage ratio covenant in our credit facilities, except that the covenant includes in EBITDA the unrealized effects of non-currency risk-related derivative financial instruments that are held for trading (see *Note 4(h)*). Net debt and EBITDA – excluding restructuring and other costs are measures that do not have any standardized meanings prescribed by IFRS-IASB and are therefore unlikely to be comparable to similar measures presented by other issuers. The calculation of these measures is set out in the following table. Net debt is one component of a ratio used to determine compliance with debt covenants.

As at, or for the 12-month periods ended, December 31 ($ in millions)	Objective	2022	2021
Components of debt and coverage ratios			
Net debt [1]		**$ 24,152**	$ 20,535
EBITDA – excluding restructuring and other costs [2]		**$ 6,646**	$ 6,476
Net interest cost [3] (*Note 9*)		**$ 847**	$ 773
Debt ratio			
Net debt to EBITDA – excluding restructuring and other costs	2.20 – 2.70 [4]	**3.63**	3.17
Coverage ratios			
Earnings coverage [5]		**3.6**	3.9
EBITDA – excluding restructuring and other costs interest coverage [6]		**7.8**	8.4

1 Net debt and total managed capitalization are calculated as follows:

As at December 31	*Note*	2022	2021
Long-term debt	*26*	**$ 25,037**	$ 20,852
Debt issuance costs netted against long-term debt		**118**	94
Derivative (assets) liabilities used to manage interest rate and currency risks associated with U.S. dollar-denominated long-term debt, net		**(80)**	7
Accumulated other comprehensive income amounts arising from financial instruments used to manage interest rate and currency risks associated with U.S. dollar-denominated long-term debt – excluding tax effects		**(53)**	191
Cash and temporary investments, net		**(974)**	(723)
Short-term borrowings	*22*	**104**	114
Net debt		**24,152**	20,535
Common equity		**16,569**	15,116
Non-controlling interests		**1,089**	943
Less : accumulated other comprehensive income amounts included above in common equity and non-controlling interests		**(133)**	(186)
Total managed capitalization		**$ 41,677**	$ 36,408

2 EBITDA – excluding restructuring and other costs is calculated as follows:

Years ended December 31	*Note*	2022	2021
EBITDA	*5*	**$ 6,406**	$ 6,290
Restructuring and other costs	*16*	**240**	186
EBITDA – excluding restructuring and other costs		**$ 6,646**	$ 6,476

3 Net interest cost is defined as financing costs, excluding employee defined benefit plans net interest, virtual power purchase agreements unrealized change in forward element, recoveries on long-term debt prepayment premium and repayment of debt, calculated on a 12-month trailing basis (expenses recorded for long-term debt prepayment premium, if any, are included in net interest cost) (see *Note 9*).

4 Our long-term objective range for this ratio is 2.20 – 2.70 times. The ratio as at December 31, 2022, is outside the long-term objective range. We may permit, and have permitted, this ratio to go outside the objective range (for long-term investment opportunities), but we will endeavour to return this ratio to within the objective range in the medium term (following the spectrum auction in 2021, and the spectrum auctions upcoming in 2023 and 2024), as we believe that this range is supportive of our long-term strategy. We are in compliance with the leverage ratio covenant in our credit facilities, which states that we may not permit our net debt to operating cash flow ratio to exceed 4.25:1.00 (see *Note 26(d)*); the calculation of the debt ratio is substantially similar to the calculation of the leverage ratio covenant in our credit facilities.

5 Earnings coverage is defined by Canadian Securities Administrators National Instrument 41-101 as net income before borrowing costs and income tax expense, divided by borrowing costs (interest on long-term debt; interest on short-term borrowings and other; long-term debt prepayment premium), and adding back capitalized interest, all such amounts excluding those attributable to non-controlling interests.

6 EBITDA – excluding restructuring and other costs interest coverage is defined as EBITDA – excluding restructuring and other costs, divided by net interest cost. This measure is substantially similar to the coverage ratio covenant in our credit facilities.

Net debt to EBITDA – excluding restructuring and other costs was 3.63 times as at December 31, 2022, as compared to 3.17 times one year earlier. The effect of the increase in net debt, primarily due to the acquisition of spectrum licences and business acquisitions, exceeded the effect of growth in EBITDA – excluding restructuring and other costs. EBITDA was reduced by COVID-19 pandemic impacts.

The earnings coverage ratio for the twelve-month period ended December 31, 2022, was 3.6 times, down from 3.9 times one year earlier. An increase in income before borrowing costs and income taxes increased the ratio by 0.1 and an increase in borrowing costs decreased the ratio by 0.4. The EBITDA – excluding restructuring and other costs interest coverage ratio for the twelve-month period ended December 31, 2022, was 7.8 times, down from 8.4 times one year earlier. Growth in EBITDA – excluding restructuring and other costs increased the ratio by 0.2 and an increase in net interest costs decreased the ratio by 0.8. EBITDA was reduced by COVID-19 pandemic impacts.

TELUS Corporation Common Share dividend payout ratio

So as to be consistent with the way we manage our business, our TELUS Corporation Common Share dividend payout ratio is presented as a historical measure calculated as the sum of the dividends declared in the most recent four quarters for TELUS Corporation Common Shares, as recorded in the financial statements net of dividend reinvestment plan effects (see *Note 13*), divided by the sum of free cash flow* amounts for the most recent four quarters for interim reporting periods (divided by annual free cash flow if the reported amount is in respect of a fiscal year).

For the 12-month periods ended December 31	Objective	**2022**	2021
Determined using most comparable IFRS-IASB measures			
Ratio of TELUS Corporation Common Share dividends declared to cash provided by operating activities - less capital expenditures (excluding spectrum licences)		**142 %**	192 %
Determined using management measures			
TELUS Corporation Common Share dividend payout ratio – net of dividend reinvestment plan effects	60%–75% [1]	**95 %**	140 %

1 Our objective range for the TELUS Corporation Common Share dividend payout ratio is 60%-75% of free cash flow on a prospective basis.

* Free cash flow is not a standardized financial measure under IFRS-IASB and might not be comparable to similar measures presented by other issuers; we define free cash flow as EBITDA (operating revenues and other income less goods and services purchased and employee benefits expense) excluding items that we consider to be of limited predictive value, including certain working capital changes (such as trade receivables and trade payables), proceeds from divested assets, and other sources and uses of cash, as found in the consolidated statements of cash flows. We have issued guidance on, and report, free cash flow because it is a key performance measure that management and investors use to evaluate the performance of our business.

For the 12-month periods ended December 31 (millions)	2022	2021
TELUS Corporation Common Share dividends declared	**$ 1,899**	$ 1,711
Amount of TELUS Corporation Common Share dividends declared reinvested in TELUS Corporation Common Shares	**(687)**	(624)
TELUS Corporation Common Share dividends declared - net of dividend reinvestment plan effects	**$ 1,212**	$ 1,087

Our calculation of free cash flow, and its reconciliation to cash provided by operating activities, is as follows:

For the 12-month periods ended December 31 (millions)	*Note*	2022	2021
EBITDA	*5*	**$ 6,406**	$ 6,290
Deduct gain on disposition of financial solutions business		**—**	(410)
Restructuring and other costs, net of disbursements		**69**	10
Effects of contract asset, acquisition and fulfilment and TELUS Easy Payment device financing		**(95)**	(45)
Effect of lease principal	*31(b)*	**(495)**	(502)
Items from the Consolidated statements of cash flows:			
Share-based compensation, net	*14*	**122**	139
Net employee defined benefit plans expense	*15*	**101**	113
Employer contributions to employee defined benefit plans		**(44)**	(53)
Interest paid		**(816)**	(744)
Interest received		**17**	17
Capital expenditures (excluding spectrum licences)	*5*	**(3,472)**	(3,498)
Free cash flow before income taxes		**1,793**	1,317
Income taxes paid, net of refunds		**(519)**	(601)
Effect of disposition of financial solutions business on income taxes paid		**—**	61
Free cash flow		**1,274**	777
Add (deduct):			
Capital expenditures (excluding spectrum licences)	*5*	**3,472**	3,498
Effects of lease principal		**495**	502
Gain on disposition of financial solutions business, net of effect on income taxes paid		**—**	(349)
Individually immaterial items included in net income neither providing nor using cash		**(430)**	(40)
Cash provided by operating activities		**$ 4,811**	$ 4,388

4 financial instruments

(a) Risks – overview

Our financial instruments, their accounting classification and the nature of certain risks to which they may be subject are set out in the following table.

		Risks				
				Market risks		
Financial instrument	Accounting classification	Credit	Liquidity	Currency	Interest rate	Other price
Measured at amortized cost						
Accounts receivable	AC [1]	X		X		
Contract assets	AC [1]	X				
Construction credit facilities advances to real estate joint venture	AC [1]				X	
Short-term borrowings	AC [1]		X	X	X	
Accounts payable	AC [1]		X	X		
Provisions (including restructuring accounts payable)	AC [1]		X	X		X
Long-term debt	AC [1]		X	X	X	
Measured at fair value						
Cash and temporary investments	FVTPL [2]	X		X	X	
Long-term investments (not subject to significant influence) [3]	FVTPL/FVOCI [3]			X		X
Foreign exchange derivatives [4]	FVTPL [2]	X	X	X		
Virtual power purchase agreements [4]	FVTPL [2]					X

1 For accounting recognition and measurement purposes, classified as amortized cost (AC).

2 For accounting recognition and measurement purposes, classified as fair value through net income (FVTPL). *Unrealized* changes in the fair values of financial instruments are included in net income unless the instrument is part of a cash flow hedging relationship. The effective portions of *unrealized* changes in the fair values of financial instruments held for hedging are included in other comprehensive income.

3 Long-term investments over which we do not have significant influence are measured at fair value if those fair values can be reliably measured. For accounting recognition and measurement purposes, on an investment-by-investment basis, long-term investments are classified as either fair value through net income or fair value through other comprehensive income (FVOCI).

4 Use of derivative financial instruments is subject to a policy which requires that no derivative transaction is to be entered into for the purpose of establishing a speculative or leveraged position (the corollary being that all derivative transactions are to be entered into for risk management purposes only) and sets criteria for the creditworthiness of the transaction counterparties.

Derivatives that are part of an established and documented cash flow hedging relationship are accounted for as held for hedging. We believe that classification as held for hedging results in a better matching of the change in the fair value of the derivative financial instrument with the risk exposure being hedged.

In respect of hedges of anticipated transactions, hedge gains/losses are included with the related expenditure and are expensed when the transaction is recognized in our results of operations. We have selected this method as we believe that it results in a better matching of the hedge gains/losses with the risk exposure being hedged.

Derivatives that are not part of a documented cash flow hedging relationship are accounted for as held for trading and thus are measured at fair value through net income.

Derivative financial instruments

We apply hedge accounting to financial instruments used to establish hedge accounting relationships for U.S. dollar-denominated transactions. We believe that our use of derivative financial instruments for hedging or arbitrage assists us in managing our financing costs and/or reducing the uncertainty associated with our financing or other business activities. Uncertainty associated with currency risk and other price risk is reduced through our use of foreign exchange derivatives that effectively swap floating currency exchange rates for fixed rates. When entering into derivative financial instrument contracts, we seek to align the cash flow timing of the hedging items with that of the hedged items. The effects of this risk management strategy and its application are set out in *(i)* following.

(b) Credit risk

Excluding credit risk, if any, arising from currency swaps settled on a gross basis, the best representation of our maximum exposure (excluding income tax effects) to credit risk, which is a worst-case scenario and does not reflect results we expect, is set out in the following table.

As at December 31 (millions)	**2022**	2021
Cash and temporary investments, net	**$ 974**	$ 723
Accounts receivable	**3,868**	3,216
Contract assets	**761**	749
Derivative assets	**333**	89
	$ 5,936	$ 4,777

Cash and temporary investments, net

Credit risk associated with cash and temporary investments is managed by ensuring that these financial assets are placed with: governments; major financial institutions that have been accorded strong investment grade ratings by a primary rating agency; and/or other creditworthy counterparties. An ongoing review evaluates changes in the status of counterparties.

Accounts receivable

Credit risk associated with accounts receivable is inherently managed by the size and diversity of our large customer base, which includes substantially all consumer and business sectors in Canada. We follow a program of credit evaluations of customers and limit the amount of credit extended when deemed necessary. Accounts are considered to be past due (in default) when customers have failed to make the contractually required payments when due, which is generally within 30 days of the billing date. Any late payment charges are levied at an industry-based market rate or a negotiated rate on outstanding non-current customer account balances.

As at December 31 (millions)		**2022**			2021		
	Note	Gross	Allowance	Net [1]	Gross	Allowance	Net [1]
Customer accounts receivable, net of allowance for doubtful accounts							
Less than 30 days past billing date		**$ 936**	**$ (11)**	**$ 925**	$ 900	$ (8)	$ 892
30-60 days past billing date		**400**	**(11)**	**389**	338	(7)	331
61-90 days past billing date		**185**	**(15)**	**170**	93	(9)	84
More than 90 days past billing date		**192**	**(33)**	**159**	114	(21)	93
Unbilled customer finance receivables		**1,509**	**(39)**	**1,470**	1,323	(65)	1,258
		$ 3,222	**$ (109)**	**$ 3,113**	$ 2,768	$ (110)	$ 2,658
Current	*6(b)*	**$ 2,636**	**$ (94)**	**$ 2,542**	$ 2,194	$ (81)	$ 2,113
Non-current	*20*	**586**	**(15)**	**571**	574	(29)	545
		$ 3,222	**$ (109)**	**$ 3,113**	$ 2,768	$ (110)	$ 2,658

1 Net amounts represent customer accounts receivable for which an allowance had not been made as at the dates of the Consolidated statements of financial position (see *Note 6(b)*).

We maintain allowances for lifetime expected credit losses related to doubtful accounts. Current economic conditions (including forward-looking macroeconomic data), historical information (including credit agency reports, if available), reasons for the accounts being past due and the line of business from which the customer accounts receivable arose are all considered when determining whether to make allowances for past-due accounts. The same factors are considered when determining whether to write off amounts charged to the allowance for doubtful accounts against the customer accounts receivable. The doubtful accounts expense is calculated on a specific-identification basis for customer accounts receivable balances above a specific threshold and on a statistically derived allowance basis for the remainder. No customer accounts receivable are written off directly to the doubtful accounts expense.

The following table presents a summary of the activity related to our allowance for doubtful accounts.

Years ended December 31 (millions)	**2022**	2021
Balance, beginning of period	**$ 110**	$ 140
Additions (doubtful accounts expense)	**82**	42
Accounts written off [1] less than recoveries	**(89)**	(77)
Other	**6**	5
Balance, end of period	**$ 109**	$ 110

1 For the year ended December 31, 2022, accounts that were written off but were still subject to enforcement activity totalled $148 (2021 – $110).

Contract assets

Credit risk associated with contract assets is inherently managed by the size and diversity of our large customer base, which includes substantially all consumer and business sectors in Canada. We follow a program of credit evaluations of customers and limit the amount of credit extended when deemed necessary.

As at December 31 (millions)	**2022**			2021		
	Gross	Allowance	Net *(Note 6(c))*	Gross	Allowance	Net *(Note 6(c))*
Contract assets, net of impairment allowance						
To be billed and thus reclassified to accounts receivable during:						
The 12-month period ending one year hence	**$ 611**	**$ (23)**	**$ 588**	$ 602	$ (24)	$ 578
The 12-month period ending two years hence	**277**	**(11)**	**266**	264	(11)	253
Thereafter	**55**	**(1)**	**54**	47	(1)	46
	$ 943	**$ (35)**	**$ 908**	$ 913	$ (36)	$ 877

We maintain allowances for lifetime expected credit losses related to contract assets. Current economic conditions, historical information (including credit agency reports, if available), and the line of business from which the contract asset arose are all considered when determining impairment allowances. The same factors are considered when determining whether to write off amounts charged to the impairment allowance for contract assets against contract assets.

Derivative assets (and derivative liabilities)

Counterparties to our material foreign exchange derivatives are major financial institutions that have been accorded investment grade ratings by a primary credit rating agency. The total dollar amount of credit exposure under contracts with any one financial institution is limited and counterparties' credit ratings are monitored. We do not give or receive collateral on swap agreements and hedging items due to our credit rating and those of our counterparties. While we are exposed to the risk of potential credit losses due to the possible non-performance of our counterparties, we consider this risk remote. Our derivative liabilities do not have credit risk-related contingent features.

(c) Liquidity risk

As a component of our capital structure financial policies, discussed further in *Note 3*, we manage liquidity risk by:

- maintaining a daily cash pooling process that enables us to manage our available liquidity and our liquidity requirements according to our actual needs;
- maintaining an agreement to sell trade receivables to an arm's-length securitization trust and bilateral bank facilities (*Note 22*), a commercial paper program (*Note 26(c)*) and syndicated credit facilities (*Note 26(d),(e)*);
- maintaining in-effect shelf prospectuses;
- continuously monitoring forecast and actual cash flows; and
- managing maturity profiles of financial assets and financial liabilities.

Our debt maturities in future years are disclosed in *Note 26(i)*. As at December 31, 2022, TELUS Corporation could offer an unlimited amount of securities in Canada, and US$3.5 billion of securities in the U.S., qualified pursuant to a Canadian shelf prospectus that is in effect until September 2024 (2021 – $2.75 billion of debt or equity securities pursuant to a shelf prospectus that was in effect until June 2023). We believe that our investment grade credit ratings contribute to reasonable access to capital markets. TELUS International (Cda) Inc. has a Canadian shelf prospectus that is in effect until May 2024 under which an unlimited amount of debt or equity securities could be offered.

We closely match the contractual maturities of our derivative financial liabilities with those of the risk exposures they are being used to manage.

The expected maturities of our undiscounted financial liabilities do not differ significantly from the contractual maturities, other than as noted below. The contractual maturities of our undiscounted financial liabilities, including interest thereon (where applicable), are set out in the following tables.

	Non-derivative				**Derivative**				
			Composite long-term debt						
As at December 31, 2022 (millions)	Non-interest bearing financial liabilities	Short-term borrowings [1]	Long-term debt, excluding leases [1] (*Note 26*)	Leases (*Note 26*)	Currency swap agreement amounts to be exchanged [2] (Receive)	Pay	Currency swap agreement amounts to be exchanged (Receive)	Pay	Total
2023	**$ 3,613**	**$ 9**	**$ 2,907**	**$ 596**	**$ (1,679)**	**$ 1,674**	**$ (669)**	**$ 648**	**$ 7,099**
2024	**254**	**105**	**3,126**	**537**	**(201)**	**193**	**—**	**—**	**4,014**
2025	**16**	**—**	**1,800**	**379**	**(599)**	**586**	**—**	**—**	**2,182**
2026	**12**	**—**	**2,154**	**273**	**(165)**	**162**	**—**	**—**	**2,436**
2027	**1**	**—**	**2,197**	**218**	**(1,644)**	**1,610**	**—**	**—**	**2,382**
2028-2032	**—**	**—**	**9,929**	**446**	**(1,785)**	**1,707**	**—**	**—**	**10,297**
Thereafter	**—**	**—**	**11,551**	**364**	**(2,921)**	**2,805**	**—**	**—**	**11,799**
Total	**$ 3,896**	**$ 114**	**$ 33,664**	**$ 2,813**	**$ (8,994)**	**$ 8,737**	**$ (669)**	**$ 648**	**$40,209**
			Total (*Note 26(i)*)			**$ 36,220**			

1 Cash outflows in respect of interest payments on our short-term borrowings, commercial paper and amounts drawn under our credit facilities (if any) have been calculated based upon the interest rates in effect as at December 31, 2022.

2 The amounts included in undiscounted non-derivative long-term debt in respect of U.S. dollar-denominated long-term debt, and the corresponding amounts in the long-term debt currency swap receive column, have been determined based upon the currency exchange rates in effect as at December 31, 2022. The hedged U.S. dollar-denominated long-term debt contractual amounts at maturity, in effect, are reflected in the long-term debt currency swap pay column as gross cash flows are exchanged pursuant to the currency swap agreements.

	Non-derivative				Derivative					
			Composite long-term debt							
As at December 31, 2021 (millions)	Non-interest bearing financial liabilities	Short-term borrowings [1]	Long-term debt, excluding leases [1] (*Note 26*)	Leases (*Note 26*)	Currency swap agreement amounts to be exchanged [2] (Receive)	Pay	Other	Currency swap agreement amounts to be exchanged (Receive)	Pay	Total
2022	$ 3,395	$ 15	$ 3,130	$ 504	$ (2,050)	$ 2,059	$ 8	$ (544)	$ 540	$ 7,057
2023	62	1	1,167	364	(149)	148	—	—	—	1,593
2024	13	101	1,724	305	(149)	148	—	—	—	2,142
2025	14	—	2,217	176	(522)	540	—	—	—	2,425
2026	2	—	1,901	144	(116)	118	—	—	—	2,049
2027-2031	7	—	7,351	398	(1,784)	1,852	—	—	—	7,824
Thereafter	—	—	10,499	344	(2,805)	2,877	—	—	—	10,915
Total	$ 3,493	$ 117	$ 27,989	$ 2,235	$ (7,575)	$ 7,742	$ 8	$ (544)	$ 540	$34,005
			Total			$ 30,391				

1 Cash outflows in respect of interest payments on our short-term borrowings, commercial paper and amounts drawn under our credit facilities (if any) have been calculated based upon the interest rates in effect as at December 31, 2021.

2 The amounts included in undiscounted non-derivative long-term debt in respect of U.S. dollar-denominated long-term debt, and the corresponding amounts in the long-term debt currency swap receive column, have been determined based upon the currency exchange rates in effect as at December 31, 2021. The hedged U.S. dollar-denominated long-term debt contractual amounts at maturity, in effect, are reflected in the long-term debt currency swap pay column as gross cash flows are exchanged pursuant to the currency swap agreements.

(d) Currency risk

Our functional currency is the Canadian dollar, but certain routine revenues and operating costs are denominated in U.S. dollars and some inventory purchases and capital asset acquisitions are sourced internationally. The U.S. dollar is the only foreign currency to which we have a significant exposure as at the balance sheet date.

Our currency risk management includes the use of foreign currency forward contracts and currency options to fix the exchange rates on a varying percentage, typically in the range of 50% to 75%, of our domestic short-term U.S. dollar-denominated transactions and commitments and all U.S. dollar-denominated commercial paper. Other than in respect of U.S. dollar-denominated commercial paper, we designate only the spot element of these instruments as the hedging item, as the forward element is wholly immaterial; in respect of U.S. dollar-denominated commercial paper, we designate the forward rate.

As discussed further in *Note 26(b)* and *Note 26(f)*, we are also exposed to currency risk in that the fair value or future cash flows of our U.S. Dollar Notes and our TELUS International (Cda) Inc. credit facility U.S. dollar borrowings could fluctuate because of changes in foreign exchange rates. Currency hedging relationships have been established for the related semi-annual interest payments and the principal payment at maturity in respect of the U.S. Dollar Notes; we designate only the spot element of these instruments as the hedging item, as the forward element is wholly immaterial. As the functional currency of our TELUS International (Cda) Inc. subsidiary is the U.S. dollar, fluctuations in foreign exchange rates affecting its borrowings are reflected as a foreign currency translation adjustment within other comprehensive income.

(e) Interest rate risk

Changes in market interest rates will cause fluctuations in the fair values or future cash flows of temporary investments, construction credit facility advances made to the real estate joint venture, short-term obligations, long-term debt and interest rate swap derivatives.

When we have temporary investments, they have short maturities and fixed interest rates and, as a result, their fair values will fluctuate with changes in market interest rates; absent monetization prior to maturity, the related future cash flows will not change due to changes in market interest rates.

If the balance of short-term investments includes dividend-paying equity instruments, we could be exposed to interest rate risk.

Due to the short-term nature of the applicable rates of interest charged, the fair value of the construction credit facility advances made to the real estate joint venture is not materially affected by changes in market interest rates; the associated cash flows representing interest payments will be affected until such advances are repaid.

As short-term obligations arising from bilateral bank facilities, which typically have variable interest rates, are rarely outstanding for periods that exceed one calendar week, interest rate risk associated with this item is not material.

Short-term borrowings arising from the sales of trade receivables to an arm's-length securitization trust are fixed-rate debts. Due to the short maturities of these borrowings, interest rate risk associated with this item is not material.

All of our currently outstanding long-term debt, other than commercial paper and amounts drawn on our credit facilities (*Note 26(c), (e)*), is fixed-rate debt. The fair value of fixed-rate debt fluctuates with changes in market interest rates; absent early redemption, the related future cash flows will not change. Due to the short maturities of commercial paper, its fair value is not materially affected by changes in market interest rates, but the associated cash flows representing interest payments may be affected if the commercial paper is rolled over.

Amounts drawn on our short-term and long-term credit facilities will be affected by changes in market interest rates in a manner similar to commercial paper.

(f) Other price risks

Virtual power purchase agreements

We have entered into virtual power purchase agreements with renewable energy projects that develop solar and wind power facilities as part of our commitment to reduce our carbon footprint. The fair value of the virtual power purchase agreement forward element and the associated future cash flows will vary depending upon actual and estimated changes in the electricity spot price, and the electrical power to be produced in the future under each agreement, referenced in the underlying cash-settled contracts for differences.

Long-term investments

We are exposed to equity price risk arising from investments classified as fair value through other comprehensive income. Such investments are held for strategic rather than trading purposes.

(g) Market risks

Net income and other comprehensive income for the years ended December 31, 2022 and 2021, could have varied if the Canadian dollar: U.S. dollar exchange rate, the U.S. dollar: European euro exchange rate, market interest rates and virtual power purchase agreement forward element valuation varied by reasonably possible amounts from their actual statement of financial position date amounts.

The sensitivity analysis of our exposure to currency risk at the reporting date has been determined based upon a hypothetical change taking place at the relevant statement of financial position date. The U.S. dollar-denominated and European euro-denominated balances and the notional amounts of our derivative financial instruments as at the relevant statement of financial position dates have been used in the calculations.

The sensitivity analysis of our exposure to interest rate risk at the reporting date has been determined based upon a hypothetical change taking place at the beginning of the relevant fiscal year and being held constant through to the statement of financial position date. The principal and notional amounts as at the relevant statement of financial position date have been used in the calculations.

The sensitivity analysis of our exposure to wind discount risk and solar premium risk at the reporting date has been determined based upon a hypothetical change taking place at the relevant statement of financial position date. The notional amounts of the virtual power purchase agreements as at the relevant statement of financial position dates have been used in the calculations.

Income tax expense, which is reflected net in the sensitivity analysis, reflects the applicable statutory income tax rates for the reporting periods.

Twelve-month periods ended December 31	Net income		Other comprehensive income		Comprehensive income	
(increase (decrease) in millions)	**2022**	2021	**2022**	2021	**2022**	2021
Reasonably possible changes in market risks [1]						
10% change in C$: US$ exchange rate						
Canadian dollar appreciates	**$ (6)**	$ 1	**$ 19**	$ (33)	**$ 13**	$ (32)
Canadian dollar depreciates	**$ 6**	$ (1)	**$ (19)**	$ 33	**$ (13)**	$ 32
10% change in US$: € exchange rate						
U.S. dollar appreciates	**$ 16**	$ 11	**$ (60)**	$ (67)	**$ (44)**	$ (56)
U.S. dollar depreciates	**$ (16)**	$ (11)	**$ 60**	$ 67	**$ 44**	$ 56
25 basis point change in interest rates						
Interest rates increase						
Canadian interest rate	**$ (8)**	$ (4)	**$ 76**	$ 90	**$ 68**	$ 86
U.S. interest rate	**$ —**	$ —	**$ (76)**	$ (93)	**$ (76)**	$ (93)
Combined	**$ (8)**	$ (4)	**$ —**	$ (3)	**$ (8)**	$ (7)
Interest rates decrease						
Canadian interest rate	**$ 8**	$ 4	**$ (79)**	$ (94)	**$ (71)**	$ (90)
U.S. interest rate	**$ —**	$ —	**$ 79**	$ 98	**$ 79**	$ 98
Combined	**$ 8**	$ 4	**$ —**	$ 4	**$ 8**	$ 8
20 basis point change in wind discount						
Wind discount increases	**$ (34)**	$ —	**$ —**	$ —	**$ (34)**	$ —
Wind discount decreases	**$ 34**	$ —	**$ —**	$ —	**$ 34**	$ —
20 basis point change in solar premium						
Solar premium increases	**$ 25**	$ —	**$ —**	$ —	**$ 25**	$ —
Solar premium decreases	**$ (25)**	$ —	**$ —**	$ —	**$ (25)**	$ —

1 These sensitivities are hypothetical and should be used with caution. Changes in net income and/or other comprehensive income generally cannot be extrapolated because the relationship of the change in assumption to the change in net income and/or other comprehensive income may not be linear. In this table, the effect of a variation in a particular assumption on the amount of net income and/or other comprehensive income is calculated without changing any other factors; in reality, changes in one factor may result in changes in another, which might magnify or counteract the sensitivities.

The sensitivity analysis assumes that we would realize the changes in exchange rates and market interest rates; in reality, the competitive marketplace in which we operate would have an effect on this assumption.

(h) Fair values

General

The carrying values of cash and temporary investments, accounts receivable, short-term obligations, short-term borrowings, accounts payable and certain provisions (including restructuring provisions) approximate their fair values due to the immediate or short-term maturity of these financial instruments. The fair values are determined directly by reference to quoted market prices in active markets.

The fair values of our investment financial assets are based on quoted market prices in active markets or other clear and objective evidence of fair value.

The fair value of our long-term debt, excluding leases, is based on quoted market prices in active markets.

The fair values of the derivative financial instruments we use to manage our exposure to currency risk are estimated based on quoted market prices in active markets for the same or similar financial instruments or based on the current rates offered to us for financial instruments of the same maturity, as well as on discounted future cash flows determined using current rates for similar financial instruments of similar maturities subject to similar risks (such fair value estimates being largely based on the Canadian dollar: U.S. dollar forward exchange rate as at the statements of financial position dates). The fair values of the derivative financial instruments we use to manage our exposure to electrical power purchase price risk are currently estimated using a discounted cash flow approach and are based on industry standard forecasts from EDC Associates Ltd. utilizing observable market data.

The significant unobservable inputs used in the fair value measurement of the Level 3 derivative financial instruments were wind discount, reflecting 78% of electrical power pool price, and solar premium, reflecting 125% of electrical power pool price.

Year ended December 31 (millions)	**2022**
Virtual power purchase agreements unrealized change in forward element	
Included in net income, excluding income taxes	**$ 193**
Balance, beginning of period	**—**
Balance, end of period	**$ 193**

Non-derivative

Our long-term debt, which is measured at amortized cost, and the fair value thereof, are set out in the following table.

As at December 31 (millions)	**2022**		2021	
	Carrying value	Fair value	Carrying value	Fair value
Long-term debt, excluding leases (*Note 26*)	**$ 22,697**	**$ 21,000**	$ 18,976	$ 20,383

Derivative

The derivative financial instruments that we measure at fair value on a recurring basis subsequent to initial recognition are set out in the following table.

As at December 31 (millions)		2022				2021			
	Designation	Maximum maturity date	Notional amount	Fair value [1] and carrying value	Price or rate	Maximum maturity date	Notional amount	Fair value [1] and carrying value	Price or rate
Current Assets [2]									
Derivatives used to manage									
Currency risk arising from U.S. dollar revenues	HFT [4]	2023	**$ 72**	**$ 1**	US$1.00: ₱ 55	—	$ —	$ —	—
Currency risk arising from U.S. dollar-denominated purchases	HFH [3]	2023	**$ 397**	**21**	US$1.00: C$ 1.28	2022	$ 301	6	US$1.00: C$1.25
Currency risk arising from Indian rupee-denominated purchases	HFT [4]	—	**$ —**	**—**	—	2022	$ 12	—	US$1.00: ₹ 76
Currency risk arising from U.S. dollar-denominated long-term debt (*Note 26(b)-(c)*)	HFH [3]	2023	**$ 526**	**9**	US$1.00: C$ 1.33	2022	$ 664	2	US$1.00: C$1.26
Currency risk arising from European euro functional currency operations purchased with U.S. dollar-denominated long-term debt [7] (*Note 26(f)*)	HFH [5]	2025	**$ 31**	**26**	€1.00: US$ 1.09	2025	$ 31	3	€1.00: US$ 1.09
Interest rate risk associated with refinancing of debt maturing	HFH [3]	—	**$ —**	**—**	—	2022	$ 250	2	1.35 %
Price risk associated with purchase of electrical power	HFT [4]	2047	**$ 36**	**26**	$34.73/ MWh	—	$ —	—	—
				$ 83				$ 13	
Other Long-Term Assets [2]									
Derivatives used to manage									
Currency risk arising from U.S. dollar-denominated long-term debt [6] (*Note 26(b)-(c)*)	HFH [3]	2048	**$ 4,443**	**$ 66**	US$1.00: C$ 1.30	2048	$ 2,133	$ 76	US$1.00: C$1.27
Currency risk arising from European euro functional currency operations purchased with U.S. dollar-denominated long-term debt [7] (*Note 26(f)*)	HFH [5]	2025	**$ 454**	**17**	€1.00: US$ 1.09	—	$ —	—	—
Price risk associated with purchase of electrical power	HFT [4]	2047	**$ 264**	**167**	$34.73/ MWh	—	$ —	—	—
				$ 250				$ 76	
Current Liabilities [2]									
Derivatives used to manage									
Currency risk arising from U.S. dollar revenues	HFT [4]	2023	**$ 68**	**$ 3**	US$1.00: ₱ 55	2022	$ 116	$ 3	US$1.00: ₱ 50
Currency risk arising from U.S. dollar-denominated purchases	HFH [3]	2023	**$ 111**	**1**	US$1.00: C$ 1.36	2022	$ 108	1	US$1.00: C$1.28
Currency risk arising from Indian rupee-denominated purchases	HFT [4]	—	**$ —**	**—**	—	2022	$ 2	—	US$1.00: ₹ 75
Currency risk arising from U.S. dollar-denominated long-term debt (*Note 26(b)-(c)*)	HFH [3]	2023	**$ 957**	**14**	US$1.00: C$ 1.37	2022	$ 1,248	12	US$1.00: C$1.28
Interest rate risk associated with non-fixed rate credit facility amounts drawn (*Note 26(f)*)	HFH [3]	—	**$ —**	**—**	—	2022	$ 120	3	2.64 %
Interest rate risk associated with refinancing of debt maturing	HFH [3]	—	**$ —**	**—**	—	2022	$ 500	5	1.59 %
				$ 18				$ 24	
Other Long-Term Liabilities [2]									
Derivatives used to manage									
Currency risk arising from U.S. dollar-denominated long-term debt [6] (*Note 26(b)-(c)*)	HFH [3]	2049	**$ 2,329**	**$ 24**	US$1.00: C$ 1.33	2049	$ 3,185	$ 52	US$1.00: C$1.33
Currency risk arising from European euro functional currency operations purchased with U.S. dollar-denominated long-term debt [7] (*Note 26(f)*)	HFH [5]	—	**$ —**	**—**	—	2025	$ 483	21	€1.00: US$ 1.09
				$ 24				$ 73	

1 Fair value measured at the reporting date using significant other observable inputs (Level 2), except the fair value of virtual power purchase agreements (which we use to manage the price risk associated with the purchase of electrical power), which is measured at the reporting date using significant unobservable inputs (Level 3).
2 Derivative financial assets and liabilities are not set off.
3 Designated as held for hedging (HFH) upon initial recognition (cash flow hedging item); hedge accounting is applied. Unless otherwise noted, hedge ratio is 1:1 and is established by assessing the degree of matching between the notional amounts of hedging items and the notional amounts of the associated hedged items.
4 Designated as held for trading (HFT) and classified as fair value through net income upon initial recognition; hedge accounting is not applied.
5 Designated as a hedge of a net investment in a foreign operation; hedge accounting is applied. Hedge ratio is 1:1 and is established by assessing the degree of matching between the notional amounts of hedging items and the notional amounts of the associated hedged items.
6 We designate only the spot element as the hedging item. As at December 31, 2022, the foreign currency basis spread included in the fair value of the derivative instruments, which is used for purposes of assessing hedge ineffectiveness, was $123 (2021 – $53).
7 We designate only the spot element as the hedging item. As at December 31, 2022, the foreign currency basis spread included in the fair value of the derivative instruments, which is used for purposes of assessing hedge ineffectiveness, was $1 (2021 – $1).

(i) Recognition of derivative gains and losses

The following table sets out the gains and losses, excluding income tax effects, arising from derivative instruments that are classified as cash flow hedging items and their location within the Consolidated statements of income and other comprehensive income.

Credit risk associated with such derivative instruments, as discussed further in *(b)*, would be the primary source of hedge ineffectiveness. There was no ineffective portion of the derivative instruments classified as cash flow hedging items for the periods presented.

		Amount of gain (loss) recognized in other comprehensive income (effective portion) (*Note 11*)		Gain (loss) reclassified from other comprehensive income to income (effective portion) (*Note 11*)		
					Amount	
Years ended December 31 (millions)	*Note*	**2022**	2021	Location	**2022**	2021
Derivatives used to manage currency risk						
Arising from U.S. dollar-denominated purchases		**$ 30**	$ (1)	Goods and services purchased	**$ 17**	$ (24)
Arising from U.S. dollar-denominated long-term debt [1]	*26(b)-(c)*	**131**	27	Financing costs	**355**	(50)
Arising from net investment in a foreign operation [2]		**47**	47	Financing costs	**(12)**	(1)
		208	73		**360**	(75)
Derivatives used to manage other market risks						
Other		**—**	—	Financing costs	**(1)**	(4)
		$ 208	$ 73		**$ 359**	$ (79)

1 Amounts recognized in other comprehensive income are net of the change in the foreign currency basis spread (which is used for purposes of assessing hedge ineffectiveness) included in the fair value of the derivative instruments; such amount for the year ended December 31, 2022, was $70 (2021 – $(48)).
2 Amounts recognized in other comprehensive income are net of the change in the foreign currency basis spread (which is used for purposes of assessing hedge ineffectiveness) included in the fair value of the derivative instruments; such amount for the year ended December 31, 2022, was $NIL (2021 – $2).

The following table sets out the gains and losses arising from derivative instruments that are classified as held for trading and that are not designated as being in a hedging relationship, as well as their location within the Consolidated statements of income and other comprehensive income.

Years ended December 31 (millions)	Location	Gain (loss) on derivatives recognized in income	
		2022	2021
Derivatives used to manage currency risk	Financing costs	**$ (24)**	$ (2)
Virtual power purchase agreements unrealized change in forward element	Financing costs	**$ 193**	$ —

5 segment information

General

Operating segments are components of an entity that engage in business activities from which they earn revenues and incur expenses (including revenues and expenses related to transactions with the other component(s)), the operations of which can be clearly distinguished and for which the operating results are regularly reviewed by a chief operating decision-maker to make resource allocation decisions and to assess performance. Effective September 1, 2022, we embarked upon the modification of our internal and external reporting processes, systems and internal controls concurrent with the acquisition and integration of LifeWorks Inc., as referenced in *Note 18(b)*, and correspondingly are assessing our segmented reporting structure.

The TELUS technology solutions segment includes: network revenues and equipment sales arising from mobile technologies; data revenues (which include internet protocol; television; hosting, managed information technology and cloud-based services; and home and business security); healthcare software and technology solutions (including employee and family assistance programs and benefits administration); agriculture and consumer goods services (software, data management and data analytics-driven smart-food chain and consumer goods technologies); voice and other telecommunications services revenues; and equipment sales.

The digitally-led customer experiences – TELUS International (DLCX) segment, which has the U.S. dollar as its primary functional currency, is comprised of digital customer experience and digital-enablement transformation solutions, including artificial intelligence and content management, provided by our TELUS International (Cda) Inc. subsidiary.

Intersegment sales are recorded at the exchange value, which is the amount agreed to by the parties.

The segment information regularly reported to our Chief Executive Officer (our chief operating decision-maker), and the reconciliations thereof to our products and services view of revenues, other revenues and income before income taxes, are set out in the following table.

	TELUS technology solutions						Digitally-led customer experiences - TELUS International [1]		Eliminations		Total	
	Mobile		Fixed		Segment total							
Twelve-month periods ended December 31 (millions)	**2022**	2021	**2022**	2021	**2022**	2021	**2022**	2021	**2022**	2021	**2022**	2021
Operating revenues												
External revenues												
Service	**$ 6,697**	$ 6,297	**$ 6,582**	$ 5,928	**$ 13,279**	$ 12,225	**$ 2,677**	$ 2,310	**$ —**	$ —	**$ 15,956**	$ 14,535
Equipment	**2,026**	2,042	**310**	261	**2,336**	2,303	**—**	—	**—**	—	**2,336**	2,303
Revenues arising from contracts with customers	**$ 8,723**	$ 8,339	**$ 6,892**	$ 6,189	**15,615**	14,528	**2,677**	2,310	**—**	—	**18,292**	16,838
Other income *(Note 7)*					**120**	420	**—**	—	**—**	—	**120**	420
					15,735	14,948	**2,677**	2,310	**—**	—	**18,412**	17,258
Intersegment revenues					**17**	18	**537**	444	**(554)**	(462)	**—**	—
					$ 15,752	$ 14,966	**$ 3,214**	$ 2,754	**$ (554)**	$ (462)	**$ 18,412**	$ 17,258
EBITDA [2]					**$ 5,697**	$ 5,735	**$ 709**	$ 555	**$ —**	$ —	**$ 6,406**	$ 6,290
Restructuring and other costs included in EBITDA *(Note 16)*					**180**	148	**60**	38	**—**	—	**240**	186
Equity (income) loss related to real estate joint venture					**(3)**	3	**—**	—	**—**	—	**(3)**	3
Gain on disposition of financial solutions business *(Note 7)*					**—**	(410)	**—**	—	**—**	—	**—**	(410)
Adjusted EBITDA [2]					**$ 5,874**	$ 5,476	**$ 769**	$ 593	**$ —**	$ —	**$ 6,643**	$ 6,069
CAPEX, excluding spectrum licences [3]					**$ 3,337**	$ 3,372	**$ 135**	$ 126	**$ —**	$ —	**$ 3,472**	$ 3,498
Adjusted EBITDA less CAPEX, excluding spectrum licences [2]					**$ 2,537**	$ 2,104	**$ 634**	$ 467	**$ —**	$ —	**$ 3,171**	$ 2,571
					Operating revenues – external and other income (above)						**$ 18,412**	$ 17,258
					Goods and services purchased						**7,107**	6,699
					Employee benefits expense						**4,899**	4,269
					EBITDA (above)						**6,406**	6,290
					Depreciation						**2,226**	2,126
					Amortization of intangible assets						**1,226**	1,090
					Operating income						**2,954**	3,074
					Financing costs						**632**	796
					Income before income taxes						**$ 2,322**	$ 2,278

1 The digitally-led customer experiences – TELUS International segment is comprised of our consolidated TELUS International (Cda) Inc. subsidiary. All of our other international operations are included in the TELUS technology solutions segment.

2 Earnings before interest, income taxes, depreciation and amortization (EBITDA), both unadjusted and adjusted, are not standardized financial measures under IFRS-IASB and may not be comparable to similar measures disclosed by other issuers (including those disclosed by TELUS International (Cda) Inc.); we define EBITDA as operating revenues and other income less goods and services purchased and employee benefits expense. We calculate adjusted EBITDA to exclude items that do not reflect our ongoing operations and, in our opinion, should not be considered in a long-term valuation metric or included in an assessment of our ability to service or incur debt. We report EBITDA, adjusted EBITDA and adjusted EBITDA less CAPEX, excluding spectrum licences, because they are key measures that management uses to evaluate the performance of our business, and EBITDA is also utilized in measuring compliance with certain debt covenants.

3 Total capital expenditures (CAPEX); see *Note 31(a)* for a reconciliation of capital expenditures, excluding spectrum licences, to cash payments for capital assets, excluding spectrum licences, reported in the Consolidated statements of cash flows.

Geographical information

We attribute revenues from external customers to individual countries on the basis of the location where the goods and/or services are provided; for the year ended December 31, 2022, we attributed approximately $3.1 billion (2021 – $2.6 billion) of our revenues to countries other than Canada (our country of domicile). We do not have significant amounts of property, plant and equipment located outside of Canada. As at December 31, 2022, on a historical cost basis, we had approximately $2.7 billion (2021 – $2.2 billion) and approximately $3.0 billion (2021 – $2.2 billion) of intangible assets and goodwill, respectively, located outside of Canada.

6 revenue from contracts with customers

(a) Revenues

In the determination of the minimum transaction prices in contracts with customers, amounts are allocated to fulfilling, or completion of fulfilling, future contracted performance obligations. These unfulfilled, or partially unfulfilled, future contracted performance obligations are largely in respect of services to be provided over the duration of the contract. The following table sets out our aggregate estimated minimum transaction prices allocated to remaining unfulfilled, or partially unfulfilled, future contracted performance obligations and the timing of when we might expect to recognize the associated revenues; actual amounts could differ from these estimates due to a variety of factors, including the unpredictable nature of: customer behaviour; industry regulation; the economic environments in which we operate; and competitor behaviour.

As at December 31 (millions)	2022	2021
Estimated minimum transaction price allocated to remaining unfulfilled, or partially unfulfilled, performance obligations to be recognized as revenue in a future period [1, 2]		
During the 12-month period ending one year hence	**$ 2,539**	$ 2,369
During the 12-month period ending two years hence	**1,034**	915
Thereafter	**81**	56
	$ 3,654	$ 3,340

1 Excludes constrained variable consideration amounts, amounts arising from contracts originally expected to have a duration of one year or less and, as a permitted practical expedient, amounts arising from contracts that are not affected by revenue recognition timing differences arising from transaction price allocation **or** from contracts under which we may recognize and bill revenue in an amount that corresponds directly with our completed performance obligations.

2 IFRS-IASB requires the explanation of when we expect to recognize as revenue the amounts disclosed as the estimated minimum transaction price allocated to remaining unfulfilled, or partially unfulfilled, performance obligations. The estimated amounts disclosed are based upon contractual terms and maturities. Actual minimum transaction price revenues recognized, and the timing thereof, will differ from these estimates primarily due to the frequency with which the actual durations of contracts with customers do not match their contractual maturities.

(b) Accounts receivable

As at December 31 (millions)	*Note*	2022	2021
Customer accounts receivable		**$ 2,636**	$ 2,194
Accrued receivables – customer		**468**	313
Allowance for doubtful accounts	*4(b)*	**(94)**	(81)
		3,010	2,426
Accrued receivables – other		**287**	245
Accounts receivable – current		**$ 3,297**	$ 2,671

(c) Contract assets

Years ended December 31 (millions)	Note	2022	2021
Balance, beginning of period		**$ 877**	$ 878
Net additions arising from operations		**1,483**	1,336
Amounts billed in the period and thus reclassified to accounts receivable		**(1,456)**	(1,343)
Change in impairment allowance, net	*4(b)*	**1**	6
Other		**3**	—
Balance, end of period		**$ 908**	$ 877
To be billed and thus reclassified to accounts receivable during:			
The 12-month period ending one year hence		**$ 588**	$ 578
The 12-month period ending two years hence		**266**	253
Thereafter		**54**	46
Balance, end of period		**$ 908**	$ 877
Reconciliation of contract assets presented in the Consolidated statements of financial position – current			
Gross contract assets		**$ 588**	$ 578
Reclassification to contract liabilities of contracts with contract assets less than contract liabilities	*24*	**(14)**	(13)
Reclassification from contract liabilities of contracts with contract liabilities less than contract assets	*24*	**(133)**	(115)
		$ 441	$ 450

7 other income

Years ended December 31 (millions)	Note	2022	2021
Government assistance		**$ 6**	$ 8
Other sublet revenue	*19*	**5**	4
Investment income (loss), gain (loss) [1] on disposal of assets and other [2]		**27**	404
Interest income	*21(b)*	**4**	4
Changes in business combination-related provisions		**78**	—
		$ 120	$ 420

1 During the year ended December 31, 2021, we disposed of our financial solutions business, which was a part of our TELUS technology solutions segment, and realized a gain on disposition of $410 before income taxes.

2 During the year ended December 31, 2022, includes gain on acquisition of control of LifeWorks Inc., as set out in *Note 18(b)*.

We receive government assistance, as defined by IFRS-IASB, from a number of sources and, if not in respect of capital, we generally include such amounts received in Other income, other than in respect of the Canada Emergency Wage Subsidy program amounts, as set out in *Note 8*. We recognize such amounts on an accrual basis as the subsidized services are provided or as the subsidized costs are incurred.

CRTC subsidy

Local exchange carriers' costs of providing the levels of residential basic telephone service that the CRTC requires to be provided in high cost serving areas are greater than the amounts the CRTC allows the local exchange carriers to charge for the levels of service. To ameliorate the situation, the CRTC directs the collection of contribution payments, in a central fund, from all registered Canadian telecommunications service providers (including voice, data and mobile service providers) that are then disbursed to incumbent local exchange carriers as subsidy payments to partially offset the costs of providing residential basic telephone services in non-forborne high cost serving areas. The subsidy payment disbursements are based upon a total subsidy requirement calculated on a per network access line/per band subsidy rate. For the year ended December 31, 2022, our subsidy receipts were $1 million (2021 – $5 million).

Government of Quebec

Salaries for qualifying employment positions in the province of Quebec, mainly in the information technology sector, are eligible for tax credits. In respect of such tax credits, for the year ended December 31, 2022, we recorded $5 million (2021 – $3 million).

8 employee benefits expense

Years ended December 31 (millions)	*Note*	**2022**	2021
Employee benefits expense – gross			
Wages and salaries [1]		**$ 4,800**	$ 4,118
Share-based compensation [2]	*14*	**194**	236
Pensions – defined benefit	*15(a)*	**101**	113
Pensions – defined contribution	*15(f)*	**120**	106
Restructuring costs [2]	*16(a)*	**81**	79
Employee health and other benefits		**257**	227
		5,553	4,879
Capitalized internal labour costs, net			
Contract acquisition costs	*20*		
Capitalized		**(92)**	(91)
Amortized		**83**	66
Contract fulfilment costs	*20*		
Capitalized		**(11)**	(2)
Amortized		**2**	5
Property, plant and equipment		**(379)**	(362)
Intangible assets subject to amortization		**(257)**	(226)
		(654)	(610)
		$ 4,899	$ 4,269

1 For the year ended December 31, 2021, wages and salaries are net of Canada Emergency Wage Subsidy program amounts.
2 For the year ended December 31, 2022, $7 (2021 – $8) of share-based compensation in the digitally-led customer experiences segment was included in restructuring costs.

9 financing costs

Years ended December 31 (millions)	Note	2022	2021
Interest expense			
Interest on long-term debt, excluding lease liabilities - gross		**$ 779**	$ 683
Interest on long-term debt, excluding lease liabilities - capitalized [1]		**(30)**	(3)
Interest on long-term debt, excluding lease liabilities		**749**	680
Interest on lease liabilities	*19*	**74**	66
Interest on short-term borrowings and other		**16**	15
Interest accretion on provisions	*25*	**20**	18
Long-term debt prepayment premium		**—**	10
		859	789
Employee defined benefit plans net interest	*15*	**8**	26
Foreign exchange		**(25)**	(3)
Virtual power purchase agreements unrealized change in forward element		**(193)**	—
		649	812
Interest income		**(17)**	(16)
		$ 632	$ 796
Net interest cost	*3*	**$ 847**	$ 773
Interest on long-term debt, excluding lease liabilities - capitalized [1]		**(30)**	(3)
Employee defined benefit plans net interest		**8**	26
Virtual power purchase agreements unrealized change in forward element		**(193)**	—
		$ 632	$ 796

1 Interest on long-term debt, excluding lease liabilities, at a composite rate of 3.10% was capitalized to intangible assets with indefinite lives during the period.

10 income taxes

(a) Expense composition and rate reconciliation

Years ended December 31 (millions)	2022	2021
Current income tax expense		
For the current reporting period	**$ 584**	$ 563
Adjustments recognized in the current period for income taxes of prior periods	**(11)**	(30)
	573	533
Deferred income tax expense		
Arising from the origination and reversal of temporary differences	**9**	25
Adjustments recognized in the current period for income taxes of prior periods	**22**	22
	31	47
	$ 604	$ 580

Our income tax expense and effective income tax rate differ from those computed by applying the applicable statutory rates for the following reasons:

Years ended December 31 ($ in millions)	**2022**		2021	
Income taxes computed at applicable statutory rates	**$ 595**	**25.6 %**	$ 589	25.8 %
Adjustments recognized in the current period for income taxes of prior periods	**11**	**0.5**	(8)	(0.3)
Non-deductible amounts	**1**	**0.1**	23	1.0
Gain on disposition	**—**	**—**	(46)	(2.0)
Other	**(3)**	**(0.2)**	22	1.0
Income tax expense per Consolidated statements of income and other comprehensive income	**$ 604**	**26.0 %**	$ 580	25.5 %

(b) Temporary differences

We must make significant estimates in respect of the composition of our deferred income tax liability. Our operations are complex and the related income tax interpretations, regulations, legislation and jurisprudence are continually changing. As a result, there are usually some income tax matters in question.

Temporary differences comprising the net deferred income tax liability and the amounts of deferred income taxes recognized in the Consolidated statements of income and other comprehensive income and the Consolidated statements of changes in owners' equity are estimated as follows:

(millions)	Property, plant and equipment (owned) and intangible assets subject to amortization	Intangible assets with indefinite lives	Property, plant and equipment (leased), net of lease liabilities	Contract assets and liabilities	Net pension amounts	Provisions not currently deductible	Losses available to be carried forward [1]	Share-based compensation amounts and other	Net deferred income tax liability
As at January 1, 2021	$ 2,292	$ 1,692	$ (40)	$ 307	$ (247)	$ (215)	$ (67)	$ (15)	$ 3,707
Deferred income tax expense recognized in Net income	75	59	7	(112)	(22)	41	(23)	22	47
Other comprehensive income	—	—	—	—	209	—	—	37	246
Deferred income taxes charged directly to owners' equity and other (*Note 18(c)*)	80	—	—	—	—	—	(18)	(52)	10
As at December 31, 2021	2,447	1,751	(33)	195	(60)	(174)	(108)	(8)	4,010
Deferred income tax expense recognized in Net income	**(14)**	**105**	**1**	**(90)**	**(19)**	**28**	**(29)**	**49**	**31**
Other comprehensive income	**—**	**—**	**—**	**—**	**45**	**—**	**—**	**(50)**	**(5)**
Deferred income taxes charged directly to owners' equity and other (*Note 18(b)*)	**397**	**—**	**—**	**—**	**—**	**(4)**	**(7)**	**(4)**	**382**
As at December 31, 2022	**$ 2,830**	**$ 1,856**	**$ (32)**	**$ 105**	**$ (34)**	**$ (150)**	**$ (144)**	**$ (13)**	**$ 4,418**

1 We expect to be able to utilize our non-capital losses prior to expiry.

Temporary differences arise from the carrying value of investments in subsidiaries and partnerships exceeding their tax base, for which no deferred income tax liabilities have been recognized because the parent is able to control the timing of the reversal of the difference and it is probable that it will not reverse in the foreseeable future. In our specific instance, this is relevant to our investments in Canadian subsidiaries and Canadian partnerships. We are not required to recognize such deferred income tax liabilities, as we are in a position to control the timing and manner of the reversal of the temporary differences, which would not be expected to be exigible to income tax, and it is probable that such differences will not reverse in the foreseeable future. We are in a position to control the timing and manner of the reversal of the temporary differences in respect of our non-Canadian subsidiaries, and it is probable that such differences will not reverse in the foreseeable future.

(c) Other

We conduct research and development activities, which may be eligible to earn Investment Tax Credits. During the year ended December 31, 2022, we recorded Investment Tax Credits of $11 million (2021 – $21 million). Of this amount, $9 million (2021 – $14 million) was recorded as a reduction of property, plant and equipment and/or intangible assets and the balance was recorded as a reduction of goods and services purchased.

11 other comprehensive income

Years ended December 31 (millions)	Items that may subsequently be reclassified to income								Item never reclassified to income		Item never reclassified to income	
	Change in unrealized fair value of derivatives designated as cash flow hedges in current period (*Note 4(i)*)											
	Derivatives used to manage currency risk			Derivatives used to manage other market risks								
	Gains (losses) arising	Prior period (gains) losses transferred to net income	Total	Gains (losses) arising	Prior period (gains) losses transferred to net income	Total	Total	Cumulative foreign currency translation adjustment	Change in measurement of investment financial assets	Accumulated other comp. income	Employee defined benefit plan re-measure-ments	Other comp. income
Accumulated balance as at January 1, 2021			$ (40)			$ (6)	$ (46)	$ 155	$ 26	$ 135		
Other comprehensive income (loss)												
Amount arising	$ 73	$ 75	148	$ —	$ 4	4	152	(130)	66	88	$ 809	$ 897
Income taxes	$ 9	$ 18	27	$ —	$ 1	1	28	—	9	37	209	246
Net			121			3	124	(130)	57	51	$ 600	$ 651
Accumulated balance as at December 31, 2021			81			(3)	78	25	83	186		
Other comprehensive income (loss)												
Amount arising	**$ 208**	**$ (360)**	**(152)**	**$ —**	**$ 1**	**1**	**(151)**	**41**	**7**	**(103)**	**$ 177**	**$ 74**
Income taxes	**$ 12**	**$ (63)**	**(51)**	**$ —**	**$ 1**	**1**	**(50)**	**—**	**—**	**(50)**	**45**	**(5)**
Net			**(101)**			**—**	**(101)**	**41**	**7**	**(53)**	**$ 132**	**$ 79**
Accumulated balance as at December 31, 2022			**$ (20)**			**$ (3)**	**$ (23)**	**$ 66**	**$ 90**	**$ 133**		
Attributable to:												
Common Shares										**$ 110**		
Non-controlling interests										**23**		
										$ 133		



12 per share amounts

Basic net income per Common Share is calculated by dividing net income attributable to Common Shares by the total weighted average number of Common Shares outstanding during the period. Diluted net income per Common Share is calculated to give effect to share option awards and restricted share unit awards.

The following table presents reconciliations of the denominators of the basic and diluted per share computations. Net income was equal to diluted net income for all periods presented.

Years ended December 31 (millions)	**2022**	2021
Basic total weighted average number of Common Shares outstanding	**1,396**	1,346
Effect of dilutive securities – Restricted share units	**7**	5
Diluted total weighted average number of Common Shares outstanding	**1,403**	1,351

For the years ended December 31, 2022 and 2021, no outstanding equity-settled restricted share unit awards were excluded in the calculation of diluted income per Common Share. For the year ended December 31, 2022, NIL (2021 – less than 1 million) outstanding TELUS Corporation share option awards were excluded in the calculation of diluted net income per Common Share.

13 dividends per share

(a) TELUS Corporation Common Share dividends declared

Twelve-month periods ended December 31 (millions except per share amounts)	**2022**				2021			
TELUS Corporation	Declared		Paid to		Declared		Paid to	
Common Share dividends	Effective	Per share	shareholders	Total	Effective	Per share	shareholders	Total
Quarter 1 dividend	**Mar. 11, 2022**	**$ 0.3274**	**Apr. 1, 2022**	**$ 450**	Mar. 11, 2021	$ 0.3112	Apr. 1, 2021	$ 404
Quarter 2 dividend	**Jun. 10, 2022**	**0.3386**	**Jul. 4, 2022**	**467**	Jun. 10, 2021	0.3162	Jul. 2, 2021	428
Quarter 3 dividend	**Sep. 9, 2022**	**0.3386**	**Oct. 3, 2022**	**480**	Sep. 10, 2021	0.3162	Oct. 1, 2021	430
Quarter 4 dividend	**Dec. 9, 2022**	**0.3511**	**Jan. 3, 2023**	**502**	Dec. 10, 2021	0.3274	Jan. 4, 2022	449
		$ 1.3557		**$1,899**		$ 1.2710		$ 1,711

On February 8, 2023, the Board of Directors declared a quarterly dividend of $ 0.3511 per share on our issued and outstanding TELUS Corporation Common Shares payable on April 3, 2023, to holders of record at the close of business on March 10, 2023. The final amount of the dividend payment depends upon the number of TELUS Corporation Common Shares issued and outstanding at the close of business on March 10, 2023.

(b) Dividend Reinvestment and Share Purchase Plan

We have a Dividend Reinvestment and Share Purchase Plan under which eligible holders of TELUS Corporation Common Shares may acquire additional TELUS Corporation Common Shares by reinvesting dividends and by making additional optional cash payments to the trustee. Under this plan, we have the option of offering TELUS Corporation Common Shares from Treasury or having the trustee acquire TELUS Corporation Common Shares in the stock market. We may, at our discretion, offer TELUS Corporation Common Shares at a discount of up to 5% from the market price under the plan. Effective with our dividends paid October 1, 2019, we offered TELUS Corporation Common Shares from Treasury at a discount of 2%. In respect of TELUS Corporation Common Shares held by eligible shareholders who have elected to participate in the plan, dividends declared during the year ended December 31, 2022, of $639 million (2021 – $582 million) were to be reinvested in TELUS Corporation Common Shares.

14 share-based compensation

(a) Details of share-based compensation expense

Reflected in the Consolidated statements of income and other comprehensive income as Employee benefits expense and in the Consolidated statements of cash flows are the following share-based compensation amounts:

Years ended December 31 (millions)	Note	2022 Employee benefits expense [1]	2022 Associated operating cash outflows	2022 Statement of cash flows adjustment	2021 Employee benefits expense	2021 Associated operating cash outflows	2021 Statement of cash flows adjustment
Restricted share units	*(b)*	**$ 158**	**$ (25)**	**$ 133**	$ 185	$ (35)	$ 150
Employee share purchase plan	*(c)*	**45**	**(45)**	**—**	41	(41)	—
Share option awards	*(d)*	**(2)**	**(9)**	**(11)**	18	(29)	(11)
		$ 201	**$ (79)**	**$ 122**	$ 244	$ (105)	$ 139
TELUS technology solutions		**$ 168**	**$ (53)**	**$ 115**	$ 150	$ (44)	$ 106
Digitally-led customer experiences		**33**	**(26)**	**7**	94	(61)	33
		$ 201	**$ (79)**	**$ 122**	$ 244	$ (105)	$ 139

1 Within employee benefits expense (see *Note 8*), for the year ended December 31, 2022, restricted share units expense of $151 (2021 - $178) and share option awards expense of $(2) (2021 - $17) are presented as share-based compensation expense and the balance is included in restructuring costs (see *Note 16*) of the digitally-led customer experiences segment.

(b) Restricted share units

General

We use restricted share units as a form of retention and incentive compensation. Each restricted share unit is nominally equal in value to one equity share and is nominally entitled to the dividends that would arise thereon if it were an issued and outstanding equity share. The notional dividends are recorded as additional issuances of restricted share units during the life of the restricted share unit. Due to the notional dividend mechanism, the grant-date fair value of restricted share units equals the fair market value of the corresponding equity shares at the grant date, other than for the notional subset of our restricted share units affected by the relative total shareholder return performance condition (for which a grant-date fair value is determined using a Monte Carlo simulation). The restricted share units generally become payable when vesting is complete; TELUS Corporation restricted share units typically vest over a period of 33 months (the requisite service period) and TELUS International (Cda) Inc. restricted share units typically vest over a period of 48 months (the requisite service period). The vesting method of restricted share units, which is determined on or before the date of grant, may be either cliff or graded; the majority of TELUS Corporation restricted share units outstanding are cliff-vesting and the majority of TELUS International (Cda) Inc. restricted share units are graded-vesting. Accounting for restricted share units, as either equity instruments or liability instruments, is based upon the expected manner of their settlement when they are granted. Grants of TELUS Corporation restricted share units prior to fiscal 2019, and grants of TELUS International (Cda) Inc. restricted share units prior to fiscal 2021, were accounted for as liability instruments, as the associated obligations were normally expected to be cash-settled when granted.

TELUS Corporation restricted share units

We also award restricted share units that largely have the same features as our general restricted share units, but have a variable payout (0% – 200%) that depends upon the achievement of our total customer connections performance condition (with a weighting of 25%) and the total shareholder return on TELUS Corporation Common Shares relative to an international peer group of telecommunications companies (with a weighting of 75%). The grant-date fair value of the notional subset of our restricted share units affected by the total customer connections performance condition equals the fair market value of the corresponding TELUS Corporation Common Shares at the grant date, and thus the notional subset has been included in the presentation of our restricted share units with only service conditions. Reflecting a variable payout, our estimate of the fair value of the notional subset of our restricted share units affected by the relative total shareholder return performance condition is determined using a Monte Carlo simulation. Grants of restricted share units in 2022 and 2021 are accounted for as equity-settled, as that was the expected manner of their settlement when granted.

The following table presents a summary of outstanding TELUS Corporation non-vested restricted share units.

Number of non-vested restricted share units as at December 31	**2022**	2021
Restricted share units without market performance conditions		
Restricted share units with only service conditions	**5,224,220**	5,481,486
Notional subset affected by total customer connections performance condition	**357,263**	366,983
	5,581,483	5,848,469
Restricted share units with market performance conditions		
Notional subset affected by relative total shareholder return performance condition	**1,071,789**	1,100,949
	6,653,272	6,949,418

The following table presents a summary of the activity related to TELUS Corporation restricted share units without market performance conditions.

Years ended December 31	**2022**			2021		
	Number of restricted share units [1]		Weighted average grant-date fair value	Number of restricted share units [1]		Weighted average grant-date fair value
	Non-vested	Vested		Non-vested	Vested	
Outstanding, beginning of period						
Non-vested	**5,848,469**	**—**	**$ 25.67**	6,017,285	—	$ 24.55
Vested	**—**	**49,138**	**$ 25.63**	—	29,870	$ 24.58
Granted						
Initial award	**3,033,255**	**—**	**$ 31.31**	3,131,508	—	$ 25.98
In lieu of dividends	**340,259**	**2,251**	**$ 29.54**	385,783	1,394	$ 26.74
Variable payout related	**48,266**	**—**	**$ 25.79**	16,886	—	$ 25.53
Vested	**(3,285,325)**	**3,285,325**	**$ 22.68**	(3,354,451)	3,354,451	$ 24.10
Settled						
In equity	**—**	**(3,054,488)**	**$ 25.60**	—	(3,277,873)	$ 24.07
In cash	**—**	**(246,407)**	**$ 26.27**	—	(58,704)	$ 24.67
Forfeited	**(403,441)**	**—**	**$ 27.32**	(348,542)	—	$ 21.59
Outstanding, end of period						
Non-vested	**5,581,483**	**—**	**$ 30.62**	5,848,469	—	$ 25.67
Vested	**—**	**35,819**	**$ 27.00**	—	49,138	$ 25.63

1 Excluding the notional subset of restricted share units affected by the relative total shareholder return performance condition.

TELUS International (Cda) Inc. restricted share units

We also award restricted share units that largely have the same features as the TELUS Corporation restricted share units, but have a variable payout (0% – 150%) that depends upon the achievement of TELUS International (Cda) Inc. financial performance and non-market quality-of-service performance conditions. Grants of restricted share units in 2022 and 2021 are accounted for as equity-settled, as that was the expected manner of their settlement when granted.

The following table presents a summary of the activity related to TELUS International (Cda) Inc. restricted share units.

Years ended December 31	**2022**			2021		
	Number of restricted share units		Weighted average	Number of restricted share units		Weighted average
	Non-vested	Vested	grant-date fair value	Non-vested	Vested	grant-date fair value
Outstanding, beginning of period	**1,850,807**	**—**	**US$ 21.94**	1,383,642	—	US$ 7.94
Granted – initial award	**821,223**	**59,512**	**US$ 26.41**	1,383,983	—	US$ 27.26
Vested	**(798,373)**	**798,373**	**US$ 16.63**	(805,429)	805,429	US$ 7.29
Settled						
In equity	**—**	**(360,044)**	**US$ 27.84**	—	(773,185)	US$ 6.31
In cash	**—**	**(497,841)**	**US$ 10.06**	—	(32,244)	US$ 31.01
Forfeited	**(267,836)**	**—**	**US$ 21.32**	(111,389)	—	US$ 20.16
Outstanding, end of period	**1,605,821**	**—**	**US$ 27.10**	1,850,807	—	US$ 21.94

(c) TELUS Corporation employee share purchase plan

We have an employee share purchase plan under which eligible employees can purchase TELUS Corporation Common Shares through regular payroll deductions. In respect of TELUS Corporation Common Shares held within the employee share purchase plan, TELUS Corporation Common Share dividends declared during the year ended December 31, 2022, of $47 million (2021 – $42 million) were to be reinvested in TELUS Corporation Common Shares acquired by the trustee from Treasury, with a discount applicable, as set out in *Note 13(b)*.

(d) Share option awards

General

We use share option awards as a form of retention and incentive compensation. We apply the fair value method of accounting for share-based compensation awards granted to officers and other employees. Share option awards typically have a three-year vesting period (the requisite service period). The vesting method of share option awards, which is determined on or before the date of grant, may be either cliff or graded; all TELUS Corporation share option awards granted subsequent to 2004 have been cliff-vesting.

The weighted average fair value of share option awards granted is calculated by using the Black-Scholes model (a closed-form option pricing model). The risk-free interest rate used in determining the fair value of the share option awards is based on a Government of Canada yield curve that is current at the time of grant. The expected lives of the share option awards are based on our historical share option award exercise data. Similarly, expected volatility considers the historical volatility in the price of our Common Shares in respect of TELUS Corporation share options and the average historical volatility in the prices of a peer group's shares, and in the price of TELUS International (Cda) Inc.'s shares in respect of TELUS International (Cda) Inc. share options. The dividend yield is the annualized dividend current at the time of grant divided by the share option award exercise price. Dividends are not paid on unexercised share option awards and are not subject to vesting.

TELUS Corporation share options

Employees may be granted share option awards to purchase TELUS Corporation Common Shares at an exercise price equal to the fair market value at the time of grant. Share option awards granted under the plan may be exercised over specific periods not to exceed seven years from the date of grant. Share option awards granted in fiscal 2021 were for front-line employees.

These share option awards have a net-equity settlement feature. The optionee does not have the choice of exercising the net-equity settlement feature; it is at our option whether the exercise of a share option award is settled as a share option or settled using the net-equity settlement feature.

The following table presents a summary of the activity related to the TELUS Corporation share option plan.

Years ended December 31	**2022**		2021	
	Number of share options	Weighted average share option price [1]	Number of share options	Weighted average share option price
Outstanding, beginning of period	**3,050,300**	**$ 22.04**	3,014,700	$ 21.59
Granted	**—**	**$ —**	324,900	$ 25.96
Forfeited	**(295,000)**	**$ 21.93**	(289,300)	$ 21.75
Outstanding, end of period	**2,755,300**	**$ 22.05**	3,050,300	$ 22.04

1 The weighted average remaining contractual life is 4.4 years. No options were exercisable as at the balance sheet date.

The weighted average fair value of share option awards granted, and the weighted average assumptions used in the fair value estimation at the date of grant, calculated by using the Black-Scholes model, are as follows:

Year ended December 31	2021
Share option award fair value (per share option)	$ 0.93
Risk-free interest rate	0.79 %
Expected lives [1] (years)	4.25
Expected volatility	12.5 %
Dividend yield	4.8 %

1 The maximum contractual term of the share option awards granted in 2021 was seven years.

TELUS International (Cda) Inc. share options

Employees may be granted equity share options (equity-settled) to purchase TELUS International (Cda) Inc. subordinate voting shares at a price equal to, or a multiple of, the fair market value at the time of grant and/or phantom share options (cash-settled) that provide them with exposure to TELUS International (Cda) Inc. subordinate voting share price appreciation. Share option awards granted under the plan may be exercised over specific periods not to exceed ten years from the time of grant. All equity share option awards and most phantom share option awards have a variable payout (0% – 100%) that depends upon the achievement of TELUS International (Cda) Inc. financial performance and non-market quality-of-service performance conditions.

The following table presents a summary of the activity related to the TELUS International (Cda) Inc. share option plan.

Years ended December 31	2022		2021 [1]	
	Number of share options	Weighted average share option price [1]	Number of share options	Weighted average share option price
Outstanding, beginning of period	**3,180,767**	**US$ 10.74**	3,922,056	US$ 6.94
Granted	**—**	**US$ —**	579,949	US$ 25.00
Exercised [2, 3]	**(293,860)**	**US$ 8.46**	(1,321,238)	US$ 5.74
Forfeited	**(209,610)**	**US$ 6.59**	—	US$ —
Outstanding, end of period	**2,677,297**	**US$ 11.31**	3,180,767	US$ 10.74
Exercisable, end of period	**2,096,582**	**US$ 7.45**	2,096,582	US$ 7.45

1 During the year ended December 31, 2021, 242,244 Canadian dollar-denominated share options, which was the amount outstanding at the beginning of the year, were exercised and the weighted average price at the date of exercise was $28.67; no other Canadian dollar-denominated share options have been granted or are outstanding.
2 For 2,223,121 share options, the range of share option prices is US$ 4.87 – US$8.95 per TELUS International (Cda) Inc. subordinated voting share and the weighted average remaining contractual life is 4.2 years; for the balance of share options, the price is US$25.00 and the weighted average remaining contractual life is 8.2 years.
3 The weighted average price at the date of exercise was US$ 23.75 (2021 - US$31.23).

The weighted average fair value of share option awards granted, and the weighted average assumptions used in the fair value estimation at the time of grant, calculated by using the Black-Scholes model, are as follows:

Year ended December 31	2021
Share option award fair value (per share option)	US$ 5.34
Risk-free interest rate	0.73 %
Expected lives [1] (years)	6.5
Expected volatility	19.3 %
Dividend yield	NIL %

1 The maximum contractual term of the share option awards granted in 2021 was ten years.

15 employee future benefits

(a) Defined benefit pension plans – summary

Amounts in the primary financial statements relating to defined benefit pension plans

Twelve-month periods ended December 31 (millions)		2022			2021		
	Note	Plan assets	Defined benefit obligations accrued [1]	Net	Plan assets	Defined benefit obligations accrued [1]	Net
Employee benefits expense	*8*						
Benefits earned for current service		**$ —**	**$ (111)**		$ —	$ (120)	
Benefits earned for past service		**—**	**(3)**		—	(6)	
Employees' contributions		**18**	**—**		18	—	
Administrative fees		**(5)**	**—**		(5)	—	
		13	**(114)**	**$ (101)**	13	(126)	$ (113)
Financing costs	*9*						
Notional income on plan assets [2] and interest on defined benefit obligations accrued		**296**	**(299)**		238	(261)	
Interest effect on asset ceiling limit	*(c)*	**(5)**	**—**		(3)	—	
		291	**(299)**	**(8)**	235	(261)	(26)
DEFINED BENEFIT (COST) INCLUDED IN NET INCOME [3]				**(109)**			(139)
Other comprehensive income	*11*						
Difference between actual results and estimated plan assumptions [4]		**(1,197)**	**(141)**		661	(456)	
Changes in plan financial assumptions	*(d)*	**—**	**2,242**		—	657	
Changes in the effect of limiting net defined benefit assets to the asset ceilings	*(c)*	**(734)**	**—**		(53)	—	
		(1,931)	**2,101**	**170**	608	201	809
DEFINED BENEFIT (COST) INCLUDED IN COMPREHENSIVE INCOME [3]				**61**			670
AMOUNTS INCLUDED IN OPERATING ACTIVITIES CASH FLOWS							
Employer contributions	*(e)*	**44**	**—**	**44**	53	—	53
BENEFITS PAID BY PLANS		**(474)**	**474**	**—**	(474)	474	—
EFFECTS OF BUSINESS ACQUISITION		**4**	**(4)**	**—**	—	—	—
PLAN ACCOUNT BALANCES [5]							
Change in period		**(2,053)**	**2,158**	**105**	435	288	723
Balance, beginning of period		**10,043**	**(10,233)**	**(190)**	9,608	(10,521)	(913)
Balance, end of period		**$ 7,990**	**$ (8,075)**	**$ (85)**	$ 10,043	$ (10,233)	$ (190)
FUNDED STATUS – PLAN SURPLUS (DEFICIT)							
Pension plans that have plan assets in excess of defined benefit obligations accrued	*20*	**$ 7,185**	**$ (6,878)**	**$ 307**	$ 9,141	$ (8,688)	$ 453
Pension plans that have defined benefit obligations accrued in excess of plan assets							
Funded		**805**	**(996)**	**(191)**	902	(1,286)	(384)
Unfunded		**—**	**(201)**	**(201)**	—	(259)	(259)
	27	**805**	**(1,197)**	**(392)**	902	(1,545)	(643)
		$ 7,990	**$ (8,075)**	**$ (85)**	$ 10,043	$ (10,233)	$ (190)
PBSR SOLVENCY POSITION [6]							
Pension plans that have plan assets in excess of defined benefit obligations accrued				**$1,605**			$1,216
Funded pension plans that have defined benefit obligations accrued in excess of plan assets				**—**			—
				$1,605			$1,216
DEFINED BENEFIT OBLIGATIONS ACCRUED OWED TO:							
Active members			**$ (1,652)**			$ (2,343)	
Deferred members			**(350)**			(528)	
Pensioners			**(6,073)**			(7,362)	
			$ (8,075)			$ (10,233)	

1 Defined benefit obligations accrued are the actuarial present values of benefits attributed to employee services rendered to a particular date.
2 The interest income on the plan assets portion of the employee defined benefit plans net interest amount included in Financing costs reflects a rate of return on plan assets equal to the discount rate used in determining the defined benefit obligations accrued at the end of the immediately preceding fiscal year.
3 Excluding income taxes.
4 Financial assumptions in respect of plan assets (interest income on plan assets included in Financing costs reflects a rate of return on plan assets equal to the discount rate used in determining the defined benefit obligations accrued) and demographic assumptions in respect of the actuarial present values of the defined benefit obligations accrued, as at the end of the immediately preceding fiscal year for both.
5 The measurement date used to determine the plan assets and defined benefit obligations accrued was December 31.
6 The Office of the Superintendent of Financial Institutions, by way of the *Pension Benefits Standards Regulations, 1985* (PBSR) (see *(e)*), requires that a solvency valuation be performed on a periodic basis. The actual PBSR solvency positions are determined in conjunction with mid-year annual funding reports prepared by actuaries (see *(e)*); as a result, the PBSR solvency positions in this table as at December 31, 2022 and 2021, are interim estimates and updated estimates, respectively. The interim estimate as at December 31, 2021, was a net surplus of $1,366.

Interim estimated solvency ratios as at December 31, 2022, ranged from 117% to 126% (2021 – updated estimate is 106% to 118%; interim estimate was 106% to 122%) and the estimated three-year average solvency ratios, adjusted as required by the PBSR, ranged from 104% to 118% (2021 – updated estimate is 99% to 112%; interim estimate was 99% to 113%).

The solvency valuation effectively uses the fair value (excluding any asset ceiling limit effects) of the funded defined benefit pension plan assets (adjusted for theoretical wind-up expenses) to measure the solvency valuation assets. Although the defined benefit obligations accrued and the solvency valuation liabilities are calculated similarly, the assumptions used for each differ, primarily in respect of retirement ages and discount rates, and the solvency valuation liabilities, due to the required assumption that each plan is terminated on the valuation date, do not reflect assumptions about future compensation levels. Relative to the experience-based estimates of retirement ages used for purposes of determining the defined benefit obligations accrued, the minimum no-consent retirement age used for solvency valuation purposes may result in either a greater or lesser pension liability, depending upon the provisions of each plan. The solvency positions in this table reflect composite weighted average discount rates of 4.8% (2021 – 2.9%). A hypothetical decrease of 25 basis points in the composite weighted average discount rate would result in a $182 decrease in the PBSR solvency position as at December 31, 2022 (2021 – $297); these sensitivities are hypothetical, should be used with caution, are calculated without changing any other assumption and generally cannot be extrapolated because changes in amounts may not be linear.

(b) Pension plans and other defined benefit plans – overview

We have a number of defined benefit and defined contribution plans that provide pension and other retirement and post-employment benefits to most of our employees. As at December 31, 2022 and 2021, all registered defined benefit pension plans were closed to substantially all new participants and substantially all benefits had vested. The benefit plans in which our employees are participants reflect developments in our corporate history.

TELUS Corporation Pension Plan

Management and professional employees in Alberta who joined us prior to January 1, 2001, and certain unionized employees who joined us prior to June 9, 2011, are covered by this contributory defined benefit pension plan, which comprises slightly more than one-half of our total defined benefit obligation accrued. The plan contains a supplemental benefit account that may provide indexation of up to 70% of the annual increase in a specified cost-of-living index. Pensionable remuneration is determined by the average of the best five years of remuneration in the last ten consecutive years preceding retirement.

Pension Plan for Management and Professional Employees of TELUS Corporation

This defined benefit pension plan, which with certain limited exceptions ceased accepting new participants on January 1, 2006, and which comprises approximately one-quarter of our total defined benefit obligation accrued, provides a non-contributory base level of pension benefits. Additionally, on a contributory basis, employees annually can choose increased and/or enhanced levels of pension benefits above the base level. At an enhanced level of pension benefits, the plan has indexation of 100% of the annual increase in a specified cost-of-living index, to an annual maximum of 2%. Pensionable remuneration is determined by the annualized average of the best 60 consecutive months of remuneration.

TELUS Québec Defined Benefit Pension Plan

This contributory defined benefit pension plan, which ceased accepting new participants on April 14, 2009, covers any employee not governed by a collective agreement in Quebec who joined us prior to April 1, 2006, any non-supervisory employee governed by a collective agreement who joined us prior to September 6, 2006, and certain other unionized employees. The plan comprises approximately one-tenth of our total defined benefit obligation accrued. The plan has no indexation and pensionable remuneration is determined by the average of the best four years of remuneration.

TELUS Edmonton Pension Plan

This contributory defined benefit pension plan ceased accepting new participants on January 1, 1998. Indexation is 60% of the annual increase in a specified cost-of-living index and pensionable remuneration is determined by the annualized average of the best 60 consecutive months of remuneration. The plan comprises less than one-tenth of our total defined benefit obligation accrued.

Other defined benefit pension plans

In addition to the foregoing plans, we have non-registered, non-contributory supplementary defined benefit pension plans, which have the effect of maintaining the pension benefit earned once the allowable maximums in the registered plans are attained. As is common with non-registered plans of this nature, these plans are typically funded only as benefits are paid. These plans comprise less than 5% of our total defined benefit obligation accrued.

Telecommunication Workers Pension Plan

Certain employees in British Columbia are covered by a negotiated-cost, target-benefit union pension plan. Our contributions are determined in accordance with provisions of negotiated labour contracts (the current contract expired on December 31, 2021 - see *Note 29(c)*), and are generally based on employee gross earnings. We are not required to guarantee the benefits or assure the solvency of the plan, and we are not liable to the plan for other participating employers' obligations. For the years ended December 31, 2022 and 2021, our contributions comprised a significant proportion of the employer contributions to the union pension plan; similarly, a significant proportion of the plan participants were our active and retired employees.

British Columbia Public Service Pension Plan

Certain employees in British Columbia are covered by a public service pension plan. Contributions are determined in accordance with provisions of labour contracts negotiated by the Province of British Columbia and are generally based on employee gross earnings.

Defined contribution pension plans

We primarily offer three defined contribution pension plans, which are contributory, and these are the primary pension plans we sponsor that are available to our non-unionized and certain of our unionized employees. For the years ended December 31, 2022 and 2021, employees could generally choose to contribute to the plans at a rate of between 3% and 10% of their pensionable earnings; generally, we match 100% of contributions of employees up to 5% of their pensionable earnings and 80% of contributions of employees between 5% and 6% of their pensionable earnings. Membership in a defined contribution pension plan is generally voluntary until an employee's third-year service anniversary. In the event that annual contributions exceed allowable maximums, excess amounts are in certain cases contributed to a non-registered supplementary defined contribution savings plan.

Other defined benefit plans

Other defined benefit plans, all of which are non-contributory and, as at December 31, 2022 and 2021, non-funded, included a healthcare plan for retired employees and a life insurance plan, both of which ceased accepting new participants on January 1, 1997.

(c) Plan investment strategies and policies

Our primary goal for the defined benefit pension plans is to ensure the security of the retirement income and other benefits of the plan members and their beneficiaries. A secondary goal is to maximize the long-term rate of return on the defined benefit plans' assets within a level of risk acceptable to us.

Risk management

We consider absolute risk (the risk of contribution increases, inadequate plan surplus and unfunded obligations) to be more important than relative return risk. Accordingly, the defined benefit plans' designs, the nature and maturity of defined benefit obligations and the characteristics of the plans' memberships significantly influence investment strategies and policies. We manage risk by specifying allowable and prohibited investment types, setting diversification strategies and determining target asset allocations.

Allowable and prohibited investment types

Allowable and prohibited investment types, along with associated guidelines and limits, are set out in each plan's required Statement of Investment Policies and Procedures (SIP&P), which is reviewed and approved annually by the designated governing body. The SIP&P guidelines and limits are further governed by the permitted investments and lending limits set out in the *Pension Benefits Standards Regulations, 1985*. As well as conventional investments, each fund's SIP&P may provide for the use of derivative products to facilitate investment operations and to manage risk, provided that no short position is taken and no guidelines and limits established in the SIP&P are violated. Internally and externally managed funds are not permitted to invest directly in our securities, or those of our subsidiaries, and are prohibited from increasing grandfathered investments in our securities; any such grandfathered investments were made prior to the merger of BC TELECOM Inc. and TELUS Corporation, our predecessors.

Diversification

Our strategy for investments in equity securities is to be broadly diversified across individual securities, industry sectors and geographical regions. A meaningful portion (20% – 30% of total plan assets) of the plans' investments in equity securities is allocated to foreign equity securities, with the intent of further diversifying plan assets. Investments in debt securities may include a meaningful allocation to mortgages, with the objective of enhancing cash flow and providing greater scope for the management of the bond component of the plan assets. Debt securities may also include real return bonds to provide inflation protection, consistent with the indexed nature of some defined benefit obligations. Real estate investments are used to provide diversification of plan assets, hedging of potential long-term inflation and comparatively stable investment income.

Relationship between plan assets and benefit obligations

With the objective of lowering the long-term costs of our defined benefit pension plans, we purposely mismatch plan assets and benefit obligations. This mismatching is effected by including equity investments in the long-term asset mix, as well as fixed income securities and mortgages with durations that differ from those of the benefit obligations.

As at December 31, 2022, the present value-weighted average timing of estimated cash flows for the obligations (duration) of the defined benefit pension plans was 11.4 years (2021 – 14.0 years). Compensation for liquidity issues that may otherwise have arisen from the mismatching of plan assets and benefit obligations is provided by broadly diversified investment holdings (including cash and short-term investments) and cash flows from dividends, interest and rents from those diversified investment holdings.

Fair value measurements

Information about the fair value measurements of our defined benefit pension plan assets, in aggregate, is as follows:

			Fair value measurements at reporting date using			
	Total		Quoted prices in active markets for identical items		Other	
As at December 31 (millions)	**2022**	2021	**2022**	2021	**2022**	2021
Asset class						
Equity securities						
Canadian	**$ 841**	$ 1,104	**$ 708**	$ 945	**$ 133**	$ 159
Foreign	**2,707**	2,861	**500**	826	**2,207**	2,035
Debt securities						
Issued by national, provincial or local governments	**2,210**	1,290	**2,056**	1,120	**154**	170
Corporate debt securities	**1,081**	2,436	**—**	—	**1,081**	2,436
Asset-backed securities	**4**	6	**—**	—	**4**	6
Commercial mortgages	**865**	680	**—**	—	**865**	680
Cash, cash equivalents and other	**270**	820	**2**	37	**268**	783
Real estate	**930**	1,025	**—**	—	**930**	1,025
	8,908	10,222	**$ 3,266**	$ 2,928	**$ 5,642**	$ 7,294
Effect of asset ceiling limit						
Beginning of year	**(179)**	(123)				
Interest effect on asset ceiling limit	**(5)**	(3)				
Change in the effect of limiting net defined benefit assets to the asset ceiling	**(734)**	(53)				
End of year	**(918)**	(179)				
	$7,990	$10,043				

As at December 31, 2022, pension benefit trusts that we administered held no TELUS Corporation Common Shares and no TELUS International (Cda) Inc. subordinate voting shares, and held debt of TELUS Corporation with a fair value of $NIL (2021 – $2 million) (see *(c) – Allowable and prohibited investment types*). As at December 31, 2022 and 2021, pension benefit trusts that we administered did not lease real estate to us.

Asset allocations

Our defined benefit pension plans' target asset allocations and actual asset allocations are as follows:

Years ended December 31	Target allocation 2023	Percentage of plan assets at end of year **2022**	2021
Equity securities	25-55 %	**40 %**	38 %
Debt securities	40-75 %	**50 %**	51 %
Real estate	10-30 %	**10 %**	11 %
Other	0-15 %	**—**	—
		100 %	100 %

(d) Assumptions

As referred to in *Note 1(b)*, management is required to make significant estimates related to certain actuarial and economic assumptions that are used in determining defined benefit pension costs, defined benefit obligations accrued and pension plan assets. These significant estimates are of a long-term nature, consistent with the nature of employee future benefits.

Demographic assumptions

In determining the defined benefit pension expense recognized in net income for the years ended December 31, 2022 and 2021, we utilized the Canadian Institute of Actuaries CPM 2014 mortality tables.

Financial assumptions

The discount rate, which is used to determine a plan's defined benefit obligations accrued, is based upon the yield on long-term, high-quality, fixed-term investments, and is set annually. The rate of future increases in compensation is based upon current benefits policies and economic forecasts.

The significant weighted average actuarial assumptions arising from these estimates and used in measuring our defined benefit obligations accrued are as follows:

	2022	2021
Mortality assumptions used to determine defined benefit obligations accrued as at December 31		
Life expectancy at 65 for a member currently at age 65 (years)	**24.2**	24.2
Discount rate [1] used to determine:		
Net benefit costs for the year ended December 31	**2.95 %**	2.50 %
Defined benefit obligations accrued as at December 31	**5.05 %**	2.95 %
Current service cost in subsequent fiscal year	**5.05 %**	3.10 %
Rate of future increases in compensation used to determine:		
Net benefit costs for the year ended December 31	**3.00 %**	2.90 %
Defined benefit obligations accrued as at December 31	**3.00 %**	3.00 %

1 The discount rate disclosed in this table reflects the computation of an average discount rate that replicates the estimated timing of the obligation cash flows.

Sensitivity of key assumptions

The sensitivity of our key assumptions for our defined benefit pension plans was as follows:

Years ended, or as at, December 31 Increase (decrease) (millions)	**2022**		2021	
	Change in obligations	Change in expenses	Change in obligations	Change in expenses
Sensitivity of key demographic assumptions to an increase of one year [1] in life expectancy	**$ 213**	**$ 11**	$ 323	$ 11
Sensitivity of key financial assumptions to a hypothetical decrease of 25 basis points [1] in:				
Discount rate	**$ 238**	**$ 16**	$ 366	$ 13
Rate of future increases in compensation	**$ (20)**	**$ (3)**	$ (34)	$ (3)

1 These sensitivities are hypothetical and should be used with caution. Favourable hypothetical changes in the assumptions result in decreased amounts, and unfavourable hypothetical changes in the assumptions result in increased amounts, of obligations and expenses (both employee benefit expense and financing cost). Changes in amounts based on a variation in assumptions of one year or 25 basis points generally cannot be extrapolated because the relationship of the change in an assumption to the change in amounts may not be linear. Also, in this table, the effect of a variation in a particular assumption on the change in obligations or change in expenses is calculated without changing any other assumption; in reality, changes in one factor may result in changes in another (for example, an increase in the discount rate may result in changes in expectations about the rate of future increases in compensation), which might magnify or counteract the sensitivities.

(e) Employer contributions

The determination of the minimum funding amounts necessary for substantially all of our registered defined benefit pension plans is governed by the *Pension Benefits Standards Act, 1985*, which requires that current service costs be funded, and that both going-concern and solvency valuations be performed on a specified periodic basis.

- Any excess of plan assets over plan liabilities determined in the going-concern valuation reduces our minimum funding requirement for current service costs, but may not reduce the requirement to an amount less than the employees' contributions. The going-concern valuation generally determines the excess (if any) of a plan's assets over its liabilities on a projected benefit basis.
- As of the date of these consolidated financial statements, the solvency valuation generally requires that a plan's average solvency valuation liabilities, determined on the basis that the plan is terminated on the valuation date, in excess of its assets (if any) be funded, at a minimum, in equal annual amounts over a period not exceeding five years. So as to manage the risk of overfunding the plans, which results from the solvency valuation for funding purposes utilizing average solvency ratios, our funding may include the provision of letters of credit. As at December 31, 2022, undrawn letters of credit in the amount of $49 million (2021 – $115 million) secured certain obligations of the defined benefit pension plans, including non-registered unfunded plans.

Our best estimate of fiscal 2023 employer contributions to our defined benefit plans is approximately $ 19 million for registered defined benefit pension plans. This estimate is based upon the mid-year 2022 annual funding valuations that were prepared by actuaries using December 31, 2021, actuarial valuations. The funding reports are based on the pension plans' fiscal years, which are calendar years. The next annual funding valuations are expected to be prepared mid-year 2023.

Future benefit payments

Estimated future benefit payments from our funded and unfunded defined benefit pension plans, calculated as at December 31, 2022, are as follows:

Years ending December 31 (millions)	Funded	Unfunded	Total
2023	**$ 468**	**$ 12**	**$ 480**
2024	**480**	**12**	**492**
2025	**487**	**12**	**499**
2026	**494**	**12**	**506**
2027	**499**	**13**	**512**
2028-2032	**2,574**	**72**	**2,646**

(f) Defined contribution plans – expense

Our total defined contribution pension plan costs recognized were as follows:

Years ended December 31 (millions)	**2022**	2021
Union pension plan and public service pension plan contributions	**$ 19**	$ 20
Other defined contribution pension plans	**101**	86
	$ 120	$ 106

We expect that our 2023 union pension plan and public service pension plan contributions will total approximately $ 22 million.

(g) Other defined benefit plans

For the year ended December 31, 2022, other defined benefit plan current service cost was $ 9 million (2021 – $2 million). Estimated future benefit payments from our other defined benefit plans, calculated as at December 31, 2022, are $1 million annually for the five-year period from 2023 to 2027 and $ 4 million for the five-year period from 2028 to 2032.

16 restructuring and other costs

(a) Details of restructuring and other costs

With the objective of reducing ongoing costs, we incur associated incremental non-recurring restructuring costs, as discussed further in *(b)* following. We may also incur atypical charges when undertaking major or transformational changes to our business or operating models or post-acquisition business integration. In other costs, we include incremental atypical external costs incurred in connection with business acquisition or disposition activity; significant litigation costs in respect of losses or settlements; adverse retrospective regulatory decisions; and certain incremental atypical costs incurred in connection with the COVID-19 pandemic.

Restructuring and other costs are presented in the Consolidated statements of income and other comprehensive income, as set out in the following table:

	Restructuring *(b)*		Other *(c)*		Total	
Years ended December 31 (millions)	**2022**	2021	**2022**	2021	**2022**	2021
Goods and services purchased	**$ 118**	$ 62	**$ 41**	$ 45	**$ 159**	$ 107
Employee benefits expense	**81**	79	**—**	—	**81**	79
	$ 199	$ 141	**$ 41**	$ 45	**$ 240**	$ 186

(b) Restructuring provisions

Employee-related provisions and other provisions, as presented in *Note 25,* include amounts in respect of restructuring activities. In 2022, restructuring activities included ongoing and incremental efficiency initiatives, some of which involved personnel-related costs and rationalization of real estate. These initiatives were intended to improve our long-term operating productivity and competitiveness.

(c) Other

During the year ended December 31, 2022, incremental external costs were incurred in connection with business acquisition activity. In connection with business acquisitions, non-recurring atypical business integration expenditures that would be considered neither restructuring costs nor part of the fair value of the net assets acquired have been included in other costs.

Also during the year ended December 31, 2022, other costs were incurred in connection with the COVID-19 pandemic. Incremental costs were incurred due to proactive steps we elected to take in order to keep our customers and employees safe, including adjustments to the frequency of real estate cleaning and maintenance, among other items. As well, costs that have been incurred in the normal course but which are unable to contribute normally to the earning of revenues have been deemed atypical.

17 property, plant and equipment

		Owned assets						Right-of-use lease assets (*Note 19*)				
(millions)	*Note*	Network assets	Buildings and leasehold improvements	Computer hardware and other	Land	Assets under construction	Total	Network assets	Real estate	Other	Total	Total
AT COST												
As at January 1, 2021		$32,972	$ 3,428	$ 1,403	$ 54	$ 640	$38,497	$ 499	$1,506	$ 82	$ 2,087	$40,584
Additions [1]		730	53	82	5	1,593	2,463	300	220	34	554	3,017
Additions arising from business acquisitions		—	1	2	—	—	3	—	4	—	4	7
Assets under construction put into service		1,266	92	88	16	(1,462)	—	—	—	—	—	—
Transfers		160	9	39	—	—	208	(208)	—	—	(208)	—
Dispositions, retirements and other		(615)	(45)	(86)	—	—	(746)	3	(32)	(17)	(46)	(792)
Net foreign exchange differences		(3)	(1)	(3)	—	—	(7)	—	(4)	—	(4)	(11)
As at December 31, 2021		34,510	3,537	1,525	75	771	40,418	594	1,694	99	2,387	42,805
Additions [1]		**770**	**34**	**62**	**8**	**1,379**	**2,253**	**519**	**290**	**31**	**840**	**3,093**
Additions arising from business acquisitions	*18(b)*	**1**	**50**	**22**	**—**	**—**	**73**	**—**	**129**	**—**	**129**	**202**
Assets under construction put into service		**1,088**	**156**	**91**	**—**	**(1,335)**	**—**	**—**	**—**	**—**	**—**	**—**
Transfers		**223**	**—**	**55**	**—**	**—**	**278**	**(278)**	**—**	**—**	**(278)**	**—**
Dispositions, retirements and other		**(559)**	**(38)**	**4**	**—**	**—**	**(593)**	**—**	**(35)**	**(8)**	**(43)**	**(636)**
Net foreign exchange differences		**3**	**7**	**13**	**—**	**—**	**23**	**—**	**17**	**—**	**17**	**40**
As at December 31, 2022		**$36,036**	**$ 3,746**	**$ 1,772**	**$ 83**	**$ 815**	**$42,452**	**$ 835**	**$2,095**	**$ 122**	**$ 3,052**	**$45,504**
ACCUMULATED DEPRECIATION												
As at January 1, 2021		$22,120	$ 2,109	$ 889	$ —	$ —	$25,118	$ 43	$ 382	$ 27	$ 452	$25,570
Depreciation [2]		1,526	135	167	—	—	1,828	77	204	17	298	2,126
Transfers		25	1	30	—	—	56	(56)	—	—	(56)	—
Dispositions, retirements and other		(598)	(39)	(146)	—	—	(783)	—	(15)	(10)	(25)	(808)
Net foreign exchange differences		(3)	1	(2)	—	—	(4)	—	(5)	—	(5)	(9)
As at December 31, 2021		23,070	2,207	938	—	—	26,215	64	566	34	664	26,879
Depreciation [2]		**1,552**	**143**	**201**	**—**	**—**	**1,896**	**75**	**236**	**19**	**330**	**2,226**
Transfers		**54**	**—**	**35**	**—**	**—**	**89**	**(89)**	**—**	**—**	**(89)**	**—**
Dispositions, retirements and other		**(566)**	**(31)**	**(86)**	**—**	**—**	**(683)**	**—**	**(13)**	**(6)**	**(19)**	**(702)**
Net foreign exchange differences		**2**	**3**	**6**	**—**	**—**	**11**	**—**	**6**	**—**	**6**	**17**
As at December 31, 2022		**$24,112**	**$ 2,322**	**$ 1,094**	**$ —**	**$ —**	**$27,528**	**$ 50**	**$ 795**	**$ 47**	**$ 892**	**$28,420**
NET BOOK VALUE												
As at December 31, 2021		$11,440	$ 1,330	$ 587	$ 75	$ 771	$14,203	$ 530	$1,128	$ 65	$ 1,723	$15,926
As at December 31, 2022		**$11,924**	**$ 1,424**	**$ 678**	**$ 83**	**$ 815**	**$14,924**	**$ 785**	**$1,300**	**$ 75**	**$ 2,160**	**$17,084**

1 For the year ended December 31, 2022, additions include $(198) (2021 – $(171)) in respect of asset retirement obligations (see *Note 25*).

2 For the year ended December 31, 2022, depreciation includes $ 9 (2021 - $7) in respect of impairment of real estate right-of-use lease assets.

As at December 31, 2022, our contractual commitments for the acquisition of property, plant and equipment totalled $ 275 million over a period ending December 31, 2027 (2021 – $574 million over a period ending December 31, 2023).

18 intangible assets and goodwill

(a) Intangible assets and goodwill, net

(millions)	Note	Intangible assets subject to amortization: Customer contracts, related customer relationships and subscriber base	Software	Access to rights-of-way, crowdsource assets and other	Assets under construction	Total	Intangible assets with indefinite lives: Spectrum licences	Total intangible assets	Goodwill [1, 2]	Total intangible assets and goodwill
AT COST										
As at January 1, 2021		$ 2,945	$ 6,479	$ 363	$ 216	$ 10,003	$ 9,910	$ 19,913	$ 7,524	$ 27,437
Additions		—	139	5	720	864	2,272	3,136	—	3,136
Additions arising from business acquisitions		161	187	18	—	366	—	366	244	610
Assets under construction put into service		—	657	4	(661)	—	—	—	—	—
Dispositions, retirements and other (including capitalized interest)	9	(15)	(740)	52	—	(703)	3	(700)	(60)	(760)
Net foreign exchange differences		(63)	1	(5)	—	(67)	—	(67)	(74)	(141)
As at December 31, 2021		3,028	6,723	437	275	10,463	12,185	22,648	7,634	30,282
Additions		—	151	4	866	1,021	—	1,021	—	1,021
Additions arising from business acquisitions	(b)	1,453	202	46	16	1,717	—	1,717	1,832	3,549
Assets under construction put into service		—	622	—	(622)	—	—	—	—	—
Dispositions, retirements and other (including capitalized interest)	9	66	(358)	1	—	(291)	30	(261)	—	(261)
Net foreign exchange differences		60	3	10	—	73	—	73	67	140
As at December 31, 2022		**$ 4,607**	**$ 7,343**	**$ 498**	**$ 535**	**$ 12,983**	**$ 12,215**	**$ 25,198**	**$ 9,533**	**$ 34,731**
ACCUMULATED AMORTIZATION										
As at January 1, 2021		$ 495	$ 4,274	$ 96	$ —	$ 4,865	$ —	$ 4,865	$ 364	$ 5,229
Amortization		288	750	52	—	1,090	—	1,090	—	1,090
Dispositions, retirements and other		(62)	(747)	24	—	(785)	—	(785)	—	(785)
Net foreign exchange differences		(9)	2	—	—	(7)	—	(7)	—	(7)
As at December 31, 2021		712	4,279	172	—	5,163	—	5,163	364	5,527
Amortization		357	802	67	—	1,226	—	1,226	—	1,226
Dispositions, retirements and other		—	(370)	(16)	—	(386)	—	(386)	—	(386)
Net foreign exchange differences		13	2	2	—	17	—	17	—	17
As at December 31, 2022		**$ 1,082**	**$ 4,713**	**$ 225**	**$ —**	**$ 6,020**	**$ —**	**$ 6,020**	**$ 364**	**$ 6,384**
NET BOOK VALUE										
As at December 31, 2021		$ 2,316	$ 2,444	$ 265	$ 275	$ 5,300	$ 12,185	$ 17,485	$ 7,270	$ 24,755
As at December 31, 2022		**$ 3,525**	**$ 2,630**	**$ 273**	**$ 535**	**$ 6,963**	**$ 12,215**	**$ 19,178**	**$ 9,169**	**$ 28,347**

1 The amount for goodwill arising from business acquisitions for the year ended December 31, 2021, has been adjusted as set out in *(c)*.
2 Accumulated amortization of goodwill is amortization recorded prior to 2002; there are no accumulated impairment losses in the accumulated amortization of goodwill.

As at December 31, 2022, our contractual commitments for the acquisition of intangible assets totalled $ 14 million over a period ending December 31, 2023 (2021 – $26 million over a period ending December 31, 2023).

(b) Business acquisitions

Fully Managed Inc.

On January 1, 2022, we acquired 100% ownership of Fully Managed Inc., a provider of managed information technology support, technology strategy and network management. The acquisition was made with a view to growing our end-to-end capabilities to support small and medium-sized business customers.

The primary factor that contributed to the recognition of goodwill was the earnings capacity of the acquired business in excess of the net tangible and intangible assets acquired (such excess arising from the acquired workforce and the benefits of acquiring an established business). The amount assigned to goodwill may be deductible for income tax purposes.

Vivint Smart Home, Inc.

On June 8, 2022, we acquired the Canadian customers, assets and operations of Vivint Smart Home, a security business that is complementary to our existing lines of business. The investment was made with a view to leveraging our telecommunications infrastructure and expertise to continue to enhance connected home, business, security and health services for our customers.

The primary factor that contributed to the recognition of goodwill was the earnings capacity of the acquired business in excess of the net tangible and intangible assets acquired (such excess arising from the acquired workforce and the benefits of acquiring an established business). The amount assigned to goodwill may be deductible for income tax purposes.

LifeWorks Inc.

On June 16, 2022, we announced that we had entered into a definitive agreement with LifeWorks Inc. pursuant to which we would acquire all of the issued and outstanding common shares of LifeWorks Inc. for $33.00 per LifeWorks Inc. common share and the assumption of net debt, subject to the satisfaction of customary closing conditions.

On September 1, 2022, subsequent to the satisfaction of the closing conditions, we acquired LifeWorks Inc. by way of a plan of arrangement. The acquisition is complementary to our vision of employer-focused healthcare, increasing access to high-quality, proactive healthcare and mental wellness for employees by unifying digital-first solutions across the care continuum. The primary factor that gave rise to the recognition of goodwill was the earnings capacity of the acquired business in excess of the net tangible and intangible assets acquired (such excess arising from the low level of tangible assets relative to the earnings capacity of the business). A portion of the amounts assigned to goodwill may be deductible for income tax purposes.

Individually immaterial transactions

During the year ended December 31, 2022, we acquired 100% ownership of businesses that were complementary to our existing lines of business. The primary factor that gave rise to the recognition of goodwill was the earnings capacity of the acquired businesses in excess of the net tangible and intangible assets acquired (such excess arising from the low level of tangible assets relative to the earnings capacities of the businesses). A portion of the amounts assigned to goodwill may be deductible for income tax purposes.

Acquisition-date fair values

Acquisition-date fair values assigned to the assets acquired and liabilities assumed are set out in the following table:

(millions)	Fully Managed Inc.	Vivint Smart Home, Inc. [1]	LifeWorks Inc. [1]	Total of individually immaterial transactions [1]	Total
Assets					
Current assets					
Cash	$ 3	$ 3	$ 19	$ 5	$ 30
Accounts receivable [2]	46	9	247	12	314
Other	2	1	30	7	40
	51	13	296	24	384
Non-current assets					
Property, plant and equipment					
Owned assets	2	—	61	10	73
Right-of-use lease assets	—	1	115	13	129
Intangible assets subject to amortization [3]	130	76	1,459	52	1,717
Other	4	3	10	—	17
	136	80	1,645	75	1,936
Total identifiable assets acquired	187	93	1,941	99	2,320
Liabilities					
Current liabilities					
Short-term borrowings	—	—	7	—	7
Accounts payable and accrued liabilities	39	2	220	9	270
Income and other taxes payable	—	2	18	1	21
Advance billings and customer deposits	5	2	30	12	49
Provisions	—	—	26	—	26
Current maturities of long-term debt	—	31	565	2	598
	44	37	866	24	971
Non-current liabilities					
Provisions	—	—	12	1	13
Long-term debt	61	—	94	16	171
Other long-term liabilities	—	—	2	3	5
Deferred income taxes	32	11	321	8	372
	93	11	429	28	561
Total liabilities assumed	137	48	1,295	52	1,532
Net identifiable assets acquired	50	45	646	47	788
Goodwill	74	59	1,600	99	1,832
Net assets acquired	$ 124	$ 104	$ 2,246	$ 146	$ 2,620
Acquisition effected by way of:					
Cash consideration [4]	$ 89	$ 103	$ 1,245	$ 137	$ 1,574
Accounts payable and accrued liabilities	—	1	—	—	1
Provisions	29	—	—	9	38
Gain on acquisition of control	—	—	15	—	15
Issue of TELUS Corporation Common Shares [5]	6	—	986	—	992
	$ 124	$ 104	$ 2,246	$ 146	$ 2,620

1 The purchase price allocation, primarily in respect of customer contracts, related customer relationships, software, leasehold interests and deferred income taxes, had not been finalized as of the date of issuance of these consolidated financial statements. As is customary in a business acquisition transaction, until the time of acquisition of control, we did not have full access to the books and records of the acquired businesses. Upon having sufficient time to review the books and records of the acquired businesses, we expect to finalize our purchase price allocations.

2 The fair value of accounts receivable is equal to the gross contractual amounts receivable and reflects the best estimate at the acquisition date of the contractual cash flows expected to be collected.

3 Customer contracts and customer relationships (including those related to customer contracts) are generally expected to be amortized over a period of 8 years; software is expected to be amortized over a period of 5 years; and other intangible assets are expected to be amortized over a period of 5 years.

4 In respect of LifeWorks Inc., cash consideration includes $ 211 for the approximately 7 million (9.9% of issued and outstanding) LifeWorks Inc. common shares that we held immediately prior to our acquisition of control. Immediately prior to the acquisition date, the fair value of our equity interest in LifeWorks Inc. was $226; we recognized a gain on acquisition of control of $15, which has been included in Other income, as set out in *Note 7*.

5 Fair values of TELUS Corporation Common Shares were measured based upon market prices observed at the dates of acquisition of control. For one-half of the approximately 63 million (90.1% of issued and outstanding) LifeWorks Inc. common shares that we did not own immediately prior to our acquisition of control, consideration was our issuance of approximately 33 million Common Shares (1.06420 Common Share per LifeWorks Inc. common share).

Pro forma disclosures

The following pro forma supplemental information represents certain results of operations as if the business acquisitions noted above had been completed at the beginning of the fiscal 2022 year.

Year ended December 31, 2022 (millions except per share amounts)	As reported [1]	Pro forma [2]
Operating revenues and other income	$ 18,412	$ 19,194
Net income	$ 1,718	$ 1,627
Net income per Common Share		
Basic	$ 1.16	$ 1.07
Diluted	$ 1.15	$ 1.07

1 Operating revenues and other income and net income (loss)for the year ended December 31, 2022, include: $ 74 and $(18), respectively, in respect of Fully Managed Inc.; $28 and $(3), respectively, in respect of Vivint Smart Home, Inc.; and $ 350 and $(5), respectively, in respect of LifeWorks Inc.

2 Pro forma amounts for the year ended December 31, 2022, reflect the acquired businesses. The results of the acquired businesses have been included in our Consolidated statements of income and other comprehensive income effective the dates of acquisition.

The pro forma supplemental information is based on estimates and assumptions that are believed to be reasonable. The pro forma supplemental information is not necessarily indicative of our consolidated financial results in future periods or the actual results that would have been realized had the business acquisitions been completed at the beginning of the periods presented. The pro forma supplemental information includes incremental property, plant and equipment depreciation, intangible asset amortization, financing and other charges as a result of the acquisitions, net of the related tax effects.

(c) Business acquisitions – prior period

In 2021, we acquired businesses that were complementary to our existing lines of business. As at December 31, 2021, purchase price allocations had not been finalized. During the year ended December 31, 2022, the preliminary acquisition-date fair values for goodwill and deferred income tax liabilities were decreased by $ 11 million; as required by IFRS-IASB, comparative amounts have been adjusted so as to reflect those decreases effective the dates of acquisition.

(d) Business acquisition – subsequent to reporting period

WillowTree

On October 27, 2022, we announced a definitive agreement to acquire WillowTree, a full-service digital product provider focused on end-user experiences, such as native mobile applications and unified web interfaces. On January 3, 2023, subsequent to the satisfaction of the closing conditions, WillowTree was acquired through our TELUS International (Cda) Inc. subsidiary and it will be consolidated in our digitally-led customer experiences – TELUS International segment. Under the agreement, WillowTree was acquired for purchase consideration of approximately US$1.1 billion (approximately $1.5 billion at foreign exchange rates at the financial position date), net of assumed debt; purchase consideration is comprised of cash, US$125 million of TELUS International (Cda) Inc. subordinate voting shares and provisions for written put options.

The acquisition brings key talent and diversity to our segment's portfolio of next-generation solutions, and further augments its digital consulting and client-centric software development capabilities. The primary factor that gave rise to the recognition of goodwill was the earnings capacity of the acquired business in excess of the net tangible and intangible assets acquired (such excess arising from the low level of tangible assets relative to the earnings capacity of the business). A portion of the amounts assigned to goodwill may be deductible for income tax purposes.

In respect of the acquired business, we concurrently provided written put options to the remaining selling shareholders for their economic interest, which will be settled subject to certain performance-based criteria and will become exercisable in tranches over a three-year period starting in 2026. The acquisition-date fair value of the puttable shares held by the non-controlling shareholders will be recorded as a provision in the three-month period ended March 31, 2023. The provision may be settled in cash or, at our option, in a combination of cash and up to 70% in TELUS International (Cda) Inc. subordinate voting shares. Concurrent with this acquisition, the non-controlling shareholders provided us with purchased call options, which substantially mirror the written put options.

As is customary in a business acquisition transaction, until the time of acquisition of control, we did not have full access to the books and records of WillowTree. Upon having sufficient time to review the books and records of WillowTree, as well as obtaining new and additional information about the related facts and circumstances as of the acquisition date, we will adjust provisional amounts for identifiable assets acquired and liabilities assumed and thus finalize our purchase price allocation.

(e) Intangible assets with indefinite lives – spectrum licences

Our intangible assets with indefinite lives include spectrum licences granted by Innovation, Science and Economic Development Canada, which are used for the provision of both mobile and fixed wireless services. The spectrum licence policy terms indicate that the spectrum licences will likely be renewed. We expect our spectrum licences to be renewed every 20 years following a review of our compliance with licence terms. In addition to current usage, our licensed spectrum can be used for planned and new technologies. As a result of our assessment of the combination of these significant factors, we currently consider our spectrum licences to have indefinite lives and, as referred to in *Note 1(b)*, this represents a significant judgment for us.

(f) Impairment testing of intangible assets with indefinite lives and goodwill

General

As referred to in *Note 1(f)*, the carrying values of intangible assets with indefinite lives and goodwill are periodically tested for impairment and, as referred to in *Note 1(b)*, this test represents a significant estimate for us, while also requiring significant judgments to be made.

The carrying values allocated to the cash-generating units' intangible assets with indefinite lives and goodwill are set out in the following table.

	Intangible assets with indefinite lives		Goodwill		Total	
As at December 31 (millions)	**2022**	2021	**2022**	2021	**2022**	2021
TELUS technology solutions	**$ 12,215**	$ 12,185	**$ 7,175**	$ 5,356	**$ 19,390**	$ 17,541
Digitally-led customer experiences - TELUS International	**—**	—	**1,994**	1,914	**1,994**	1,914
	$ 12,215	$ 12,185	**$ 9,169**	$ 7,270	**$ 21,384**	$ 19,455

The recoverable amounts of the cash-generating units' assets have been determined based on a fair value less costs of disposal calculation. There is a material degree of uncertainty with respect to the estimates of the recoverable amounts of the cash-generating units' assets, given the necessity of making key economic assumptions about the future. Recoverable amounts based on fair value less costs of disposal calculations are categorized as Level 3 fair value measures.

We validate the results of our recoverable amounts calculations through a market-comparable approach and an analytical review of industry facts and facts that are specific to us. The market-comparable approach uses current (at time of test) market consensus estimates and equity trading prices for U.S. and Canadian firms in the same industry. In addition, we ensure that the combination of the valuations of the cash-generating units is reasonable based on our current (at time of test) market value.

Key assumptions

The fair value less costs of disposal calculation uses discounted cash flow projections that employ the following key assumptions: future cash flows and growth projections (including judgments about the allocation of future capital expenditures to support both mobile and fixed operations); associated economic risk assumptions and estimates of the likelihood of achieving key operating metrics and drivers; estimates of future generational infrastructure capital expenditures; and the future weighted average cost of capital. We consider a range of reasonably possible amounts to use for key assumptions and decide upon amounts that represent management's best estimates of market amounts. In the normal course, we make changes to key assumptions so that they reflect current (at time of test) economic conditions, updates of historical information used to develop the key assumptions and changes (if any) in our debt ratings.

The key assumptions for cash flow projections are based upon our approved financial forecasts, which span a period of three years and are discounted, for December 2022 annual impairment test purposes, at a consolidated post-tax notional rate of 6.6% (2021 - 6.6%) and 9.5% (2021 - 9.0%) for the TELUS technology solutions and the digitally-led customer experiences – TELUS International cash-generating units, respectively. For impairment testing valuations, cash flows subsequent to the three-year projection period are extrapolated, for December 2022 annual impairment test purposes, generally using perpetual growth rates of 1.95% (2021 – 1.95%) and 3.0% (2021 – 3.0%) for the TELUS technology solutions cash-generating unit and the digitally-led customer experiences – TELUS International cash-generating unit, respectively; these growth rates do not exceed the long-term average growth rates observed in the markets in which we operate.

We believe that any *reasonably possible* change in the key assumptions on which the calculation of the recoverable amounts of our cash-generating units is based would not cause the cash-generating units' carrying values (including the intangible assets with indefinite lives and goodwill allocated to each cash-generating unit) to exceed their recoverable amounts. If the future were to *adversely* differ from management's best estimates for the key assumptions and associated cash flows were to be materially adversely affected, we could potentially experience future material impairment charges in respect of our intangible assets with indefinite lives and goodwill.

19 leases

We have the right of use of land, buildings and equipment under leases. Most of our leases for real estate that we use for office, retail or network (including mobile site) purposes typically have options to extend the lease terms, which we use to protect our investment in leasehold improvements (including mobile site equipment) and to mitigate relocation risk, and/or which reflect the importance of the underlying real estate right-of-use lease assets to our operations. Judgments about lease terms are determinative of the measurement of right-of-use lease assets and the associated lease liabilities. Our judgment in respect of lease terms for leased real estate utilized in connection with our telecommunications infrastructure, more so than for any other right-of-use lease assets, routinely includes periods covered by options to extend the lease terms, as we are reasonably certain that we will choose to extend such leases.

In the normal course of operations, there are future non-executory cash outflows in respect of leases to which we are potentially exposed and which are not included in our lease liabilities as at the reporting date. A significant portion (approximately one-third) of our mobile site lease payments have consumer price index-based price adjustments and such adjustments will result in future periodic re-measurements of the lease liabilities, with commensurate adjustments to the associated real estate right-of-use lease assets (and associated future depreciation amounts); these adjustments would represent our current variable lease payments. As well, we routinely and necessarily commit to leases that have not yet commenced.

As mandated by Innovation, Science and Economic Development Canada, telecommunications companies are obligated to allow, on their real estate assets owned, on their real estate right-of-use lease assets and/or on their owned-equipment situated on real estate right-of-use lease assets, competitors to co-locate telecommunications infrastructure equipment. Of our real estate right-of-use lease assets used for purposes of situating telecommunications infrastructure equipment, less than one-fifth have co-location subleases that we, as lessor, account for as operating leases.

Maturity analyses of lease liabilities are set out in *Note 4(c)* and *Note 26(i)*; the period interest expense in respect thereof is set out in *Note 9*. The additions to, the depreciation charges for, and the carrying amounts of, right-of-use lease assets are set out in *Note 17*. We have not currently elected to exclude low-value and short-term leases from lease accounting.

Years ended December 31 (millions)	*Note*	**2022**	2021
Income from subleasing right-of-use lease assets			
Co-location sublet revenue included in operating service revenues		**$ 18**	$ 22
Other sublet revenue included in other income	*7*	**$ 5**	$ 4
Lease payments		**$ 571**	$ 568

20 other long-term assets

As at December 31 (millions)	*Note*	**2022**	2021
Pension assets	*15*	**$ 307**	$ 453
Unbilled customer finance receivables	*4(b)*	**571**	545
Derivative assets	*4(h)*	**250**	76
Deferred income taxes		**19**	35
Costs incurred to obtain or fulfill contracts with customers		**154**	109
Real estate joint venture advances	*21(b)*	**114**	114
Investment in real estate joint venture	*21(b)*	**1**	1
Investment in associates	*21*	**120**	100
Portfolio investments [1]			
At fair value through net income		**21**	26
At fair value through other comprehensive income		**467**	370
Prepaid maintenance		**61**	62
Refundable security deposits and other		**118**	80
		$ 2,203	$ 1,971

1 Fair value measured at reporting date using significant other observable inputs (Level 2).

The costs incurred to obtain and fulfill contracts with customers are set out in the following table:

Years ended December 31 (millions)	**2022**			2021		
	Costs incurred to			Costs incurred to		
	Obtain contracts with customers	Fulfill contracts with customers	Total	Obtain contracts with customers	Fulfill contracts with customers	Total
Balance, beginning of period	**$ 336**	**$ 6**	**$ 342**	$ 323	$ 11	$ 334
Additions	**344**	**13**	**357**	282	2	284
Amortization	**(276)**	**(4)**	**(280)**	(269)	(7)	(276)
Balance, end of period	**$ 404**	**$ 15**	**$ 419**	$ 336	$ 6	$ 342
Current [1]	**$ 260**	**$ 5**	**$ 265**	$ 230	$ 3	$ 233
Non-current	**144**	**10**	**154**	106	3	109
	$ 404	**$ 15**	**$ 419**	$ 336	$ 6	$ 342

1 Presented in the Consolidated statements of financial position in prepaid expenses.

21 real estate joint ventures and investment in associate

(a) General

Real estate joint ventures

In 2013, we partnered, as equals, with two arm's-length parties in a residential, retail and commercial real estate redevelopment project, TELUS Sky, in Calgary, Alberta. The new-build tower, completed in 2020, was to be built to the LEED Platinum standard.

Associate

We have acquired a 35% basic equity interest in Miovision Technologies Incorporated, an associate that is complementary to, and is viewed to grow, our existing Internet of Things business; our judgment is that we obtained significant influence over the associate concurrent with acquiring our equity interest.

(b) Real estate joint ventures

Summarized financial information

As at December 31 (millions)	2022	2021
ASSETS		
Current assets		
Cash and temporary investments, net	**$ 8**	$ 11
Other	**27**	28
	35	39
Non-current assets		
Investment property	**330**	328
Other	**10**	10
	340	338
	$ 375	$ 377
LIABILITIES AND OWNERS' EQUITY		
Current liabilities		
Accounts payable and accrued liabilities	**$ 18**	$ 10
Construction credit facilities	**342**	—
	360	10
Non-current liabilities		
Construction credit facilities	**—**	342
	—	342
	360	352
Owners' equity		
TELUS [1]	**5**	9
Other partners	**10**	16
	15	25
	$ 375	$ 377

1 The equity amounts recorded by the real estate joint venture differ from those recorded by us by the amount of the deferred gains on our real estate contributed and the valuation provision we have recorded in excess of that recorded by the real estate joint venture.

Years ended December 31 (millions)	2022	2021
Revenue	**$ 20**	$ 13
Depreciation and amortization	**$ 8**	$ 7
Interest expense	**$ 8**	$ 3
Net income (loss) and comprehensive income (loss) [1]	**$ (16)**	$ (18)

1 As the real estate joint ventures are partnerships, no provision for income taxes of the partners is made in determining the real estate joint ventures' net income and comprehensive income.

Our real estate joint ventures activity

Our real estate joint ventures investment activity is set out in the following table.

Years ended December 31 (millions)	2022			2021		
	Loans and receivables [1]	Equity [2]	Total	Loans and receivables [1]	Equity [2]	Total
Related to real estate joint ventures' statements of income and other comprehensive income						
Comprehensive income (loss) attributable to us [3]	**$ —**	**$ (6)**	**$ (6)**	$ —	$ (3)	$ (3)
Related to real estate joint ventures' statements of financial position						
Items not affecting currently reported cash flows						
Construction credit facilities financing costs charged by us *(Note 7)*	**4**	**—**	**4**	4	—	4
Cash flows in the current reporting period						
Construction credit facilities						
Financing costs paid to us	**(4)**	**—**	**(4)**	(4)	—	(4)
Funds we advanced or contributed, excluding construction credit facilities	**—**	**4**	**4**	—	10	10
Funds repaid to us and earnings distributed	**—**	**(1)**	**(1)**	—	—	—
Net increase (decrease)	**—**	**(3)**	**(3)**	—	7	7
Real estate joint ventures carrying amounts						
Balance, beginning of period	**114**	**(8)**	**106**	114	(11)	103
Valuation provision	**—**	**3**	**3**	—	(4)	(4)
Balance, end of period	**$ 114**	**$ (8)**	**$ 106**	$ 114	$ (8)	$ 106

1 Loans and receivables are included in our Consolidated statements of financial position as Real estate joint venture advances and are comprised of advances under construction credit facilities.
2 We account for our interests in the real estate joint ventures using the equity method of accounting. As at December 31, 2022 and 2021, we had recorded equity losses in excess of our recorded equity investment in respect of one of the real estate joint ventures; such resulting balance has been included in other long-term liabilities (*Note 27*).
3 As the real estate joint ventures are partnerships, no provision for income taxes of the partners is made in determining the real estate joint ventures' net income and comprehensive income.

We have entered into lease agreements with the TELUS Sky real estate joint venture. During the year ended December 31, 2022, the TELUS Sky real estate joint venture recognized $8 million (2021 – $8 million) of revenue from our office tenancy; of this amount, one-third was due to our economic interest and two-thirds was due to our partners' economic interests.

Construction credit facilities

The TELUS Sky real estate joint venture has a credit agreement, maturing August 31, 2023, with Canadian financial institutions (as 66-2/3% lender) and TELUS Corporation (as 33-1/3% lender) to provide $342 million of construction financing for the project. The construction credit facilities contain customary real estate construction financing representations, warranties and covenants and are secured by demand debentures constituting first fixed and floating charge mortgages over the underlying real estate assets. The construction credit facilities are available by way of bankers' acceptance or prime loan and bear interest at rates in line with similar construction financing facilities.

22 short-term borrowings

On July 26, 2002, one of our subsidiaries, TELUS Communications Inc., entered into an agreement with an arm's-length securitization trust associated with a major Schedule I bank under which it is currently able to sell an interest in certain trade receivables up to a maximum of $600 million (unchanged from December 31, 2021). The term of this revolving-period securitization agreement ends December 31, 2024 (unchanged from December 31, 2021), and it requires minimum cash proceeds of $100 million from monthly sales of interests in certain trade receivables. TELUS Communications Inc. is required to maintain a credit rating of at least BB (2021 – BB) from DBRS Limited or the securitization trust may require that the sale program be wound down prior to the end of the term.

Sales of trade receivables in securitization transactions are recognized as collateralized short-term borrowings and thus do not result in our de-recognition of the trade receivables sold. When we sell our trade receivables, we retain reserve accounts, which are retained interests in the securitized trade receivables, and servicing rights. As at December 31, 2022, we had sold to the trust (but continued to recognize) trade receivables of $118 million (2021 - $118 million). Short-term borrowings of $100 million (2021 - $100 million) are comprised of amounts advanced to us by the arm's-length securitization trust pursuant to the sale of trade receivables.

The balance of short-term borrowings (if any) is comprised of amounts drawn on bilateral bank facilities and/or other.

23 accounts payable and accrued liabilities

As at December 31 (millions)	**2022**	2021
Accrued liabilities	**$ 1,593**	$ 1,539
Payroll and other employee-related liabilities	**656**	633
Restricted share units liability	**1**	28
	2,250	2,200
Trade accounts payable	**1,382**	1,213
Interest payable	**206**	173
Indirect taxes payable and other	**109**	119
	$ 3,947	$ 3,705

24 advance billings and customer deposits

As at December 31 (millions)	**2022**	2021
Advance billings	**$ 662**	$ 636
Deferred customer activation and connection fees	**5**	6
Customer deposits	**12**	10
Contract liabilities	**679**	652
Other	**212**	202
	$ 891	$ 854

Contract liabilities represent our future performance obligations to customers in respect of services and/or equipment for which we have received consideration from the customer or for which an amount is due from the customer. Our contract liability balances, and the changes in those balances, are set out in the following table:

Years ended December 31 (millions)	*Note*	**2022**	2021
Balance, beginning of period		**$ 870**	$ 806
Revenue deferred in previous period and recognized in current period		**(630)**	(593)
Net additions arising from operations		**623**	637
Additions arising from business acquisitions		**51**	20
Balance, end of period		**$ 914**	$ 870
Current		**$ 826**	$ 780
Non-current	*27*		
Deferred revenues		**82**	82
Deferred customer activation and connection fees		**6**	8
		$ 914	$ 870
Reconciliation of contract liabilities presented in the Consolidated statements of financial position – current			
Gross contract liabilities		**$ 826**	$ 780
Reclassification to contract assets of contracts with contract liabilities less than contract assets	*6(c)*	**(133)**	(115)
Reclassification from contract assets of contracts with contract assets less than contract liabilities	*6(c)*	**(14)**	(13)
		$ 679	$ 652

25 provisions

(millions)	Asset retirement obligation	Employee-related	Written put options and contingent consideration	Other	Total
As at January 1, 2021	$ 661	$ 42	$ 202	$ 129	$ 1,034
Additions [1]	23	84	8	70	185
Reversals	(8)	(2)	(2)	(11)	(23)
Uses	(4)	(58)	(9)	(88)	(159)
Interest effects [2]	(171)	—	4	—	(167)
As at December 31, 2021	501	66	203	100	870
Additions [1]	**140**	**94**	**30**	**162**	**426**
Reversals	**(21)**	**(1)**	**(80)**	**(16)**	**(118)**
Uses	**(10)**	**(75)**	**(2)**	**(100)**	**(187)**
Interest effects [2]	**(294)**	**—**	**6**	**—**	**(288)**
Effects of foreign exchange, net	**—**	**—**	**—**	**1**	**1**
As at December 31, 2022	**$ 316**	**$ 84**	**$ 157**	**$ 147**	**$ 704**
Current	**$ 14**	**$ 72**	**$ 12**	**$ 68**	**$ 166**
Non-current	**302**	**12**	**145**	**79**	**538**
As at December 31, 2022	**$ 316**	**$ 84**	**$ 157**	**$ 147**	**$ 704**

1 For the year ended December 31, 2022, asset retirement obligations include $ 28 for the removal of specified telecommunications infrastructure equipment as required by Innovation, Science and Economic Development Canada.

2 The difference of $(308) (2021 – $(186)) between the asset retirement obligation interest effects in this table and the amounts disclosed in *Note 9* is a result of the change in the discount rates applicable to the provision, with such difference included in the cost of the associated asset(s) by way of being included with (netted against) the additions detailed in *Note 17*.

Asset retirement obligation

We establish provisions for liabilities associated with the retirement of property, plant and equipment when those obligations result from the acquisition, construction, development and/or normal operation of the assets. We expect that the associated cash outflows in respect of the balance accrued as at the financial statement date will occur proximate to the dates these assets are retired.

Employee-related

The employee-related provisions are largely in respect of restructuring activities (as discussed further in *Note 16(b)*). The timing of the associated cash outflows in respect of the balance accrued as at the financial statement date is substantially short-term in nature.

Written put options and contingent consideration

In connection with certain business acquisitions, we have established provisions for written put options in respect of non-controlling interests. Provisions for some written put options are determined based on the net present value of estimated future earnings, and such provisions require us to make key economic assumptions about the future. Similarly, we have established provisions for contingent consideration. No cash outflows in respect of the written put options are expected prior to their initial exercisability, and no cash outflows in respect of contingent consideration are expected prior to completion of the periods during which the contingent consideration can be earned.

Other

The provisions for other include: legal claims; non-employee-related restructuring activities; contract termination costs and onerous contracts related to business acquisitions; and costs incurred in connection with the COVID-19 pandemic. Other than as set out following, we expect that the associated cash outflows in respect of the balance accrued as at the financial statement date will occur over an indeterminate multi-year period.

As discussed further in *Note 29*, we are involved in a number of legal claims and we are aware of certain other possible legal claims. In respect of legal claims, we establish provisions, when warranted, after taking into account legal assessments, information presently available, and the expected availability of recourse. The timing of cash outflows associated with legal claims cannot be reasonably determined.

In connection with business acquisitions, we have established provisions for contract termination costs and onerous contracts acquired.

26 long-term debt

(a) Details of long-term debt

As at December 31 (millions)	*Note*	**2022**	2021
Senior unsecured			
TELUS Corporation senior notes	*(b)*	**$ 18,660**	$ 15,258
TELUS Corporation commercial paper	*(c)*	**1,458**	1,900
TELUS Corporation credit facilities	*(d)*	**1,145**	—
TELUS Communications Inc. debentures	*(e)*	**199**	448
Secured			
TELUS International (Cda) Inc. credit facility	*(f)*	**914**	1,062
Other	*(g)*	**321**	308
		22,697	18,976
Lease liabilities	*(h)*	**2,340**	1,876
Long-term debt		**$ 25,037**	$ 20,852
Current		**$ 2,541**	$ 2,927
Non-current		**22,496**	17,925
Long-term debt		**$ 25,037**	$ 20,852

(b) TELUS Corporation senior notes

The notes are senior unsecured and unsubordinated obligations and rank equally in right of payment with all of our existing and future unsecured unsubordinated obligations, are senior in right of payment to all of our existing and future subordinated indebtedness, and are effectively subordinated to all existing and future obligations of, or guaranteed by, our subsidiaries. The indentures governing the notes contain covenants that, among other things, place limitations on our ability, and the ability of certain of our subsidiaries, to: grant security in respect of indebtedness; enter into sale-leaseback transactions; and incur new indebtedness.

Interest is payable semi-annually. The notes require us to make an offer to repurchase them at a price equal to 101% of their principal amount plus accrued and unpaid interest to the date of repurchase upon the occurrence of a change in control triggering event, as defined in the supplemental trust indenture.

At any time prior to the respective maturity dates set out in the table below, the notes are redeemable at our option, in whole at any time, or in part from time to time, on not fewer than 30 days' and not more than 60 days' prior notice. On or after the respective redemption present value spread cessation dates set out in the table below, the notes are redeemable at our option, in whole but not in part, on not fewer than 30 days' and not more than 60 days' prior notice, at redemption prices equal to 100% of the principal amounts thereof. In addition, accrued and unpaid interest, if any, will be paid to the date fixed for redemption.

					Principal face amount		Redemption present value spread	
Series	Issued	Maturity	Issue price	Effective interest rate [1]	Originally issued	Outstanding at financial statement date	Basis points [2]	Cessation date
3.35% Notes, Series CJ	December 2012	March 2023	$ 998.83	3.36 %	$ 500 million	$ 500 million	40	Dec. 15, 2022
3.35% Notes, Series CK	April 2013	April 2024	$ 994.35	3.41 %	$ 1.1 billion	$ 1.1 billion	36	Jan. 2, 2024
3.75% Notes, Series CQ	September 2014	January 2025	$ 997.75	3.78 %	$ 800 million	$ 800 million	38.5	Oct. 17, 2024
3.75% Notes, Series CV	December 2015	March 2026	$ 992.14	3.84 %	$ 600 million	$ 600 million	53.5	Dec. 10, 2025
2.75% Notes, Series CZ	July 2019	July 2026	$ 998.73	2.77 %	$ 800 million	$ 800 million	33	May 8, 2026
2.80% U.S. Dollar Notes [3]	September 2016	February 2027	US$ 991.89	2.89 %	US$ 600 million	US$ 600 million	20	Nov. 16, 2026
3.70% U.S. Dollar Notes [3]	March 2017	September 2027	US$ 998.95	3.71 %	US$ 500 million	US$ 500 million	20	June 15, 2027
2.35% Notes, Series CAC	May 2020	January 2028	$ 997.25	2.39 %	$ 600 million	$ 600 million	48	Nov. 27, 2027
3.625% Notes, Series CX	March 2018	March 2028	$ 989.49	3.75 %	$ 600 million	$ 600 million	37	Dec. 1, 2027
3.30% Notes, Series CY	April 2019	May 2029	$ 991.75	3.40 %	$ 1.0 billion	$ 1.0 billion	43.5	Feb. 2, 2029
5.00% Notes, Series CAI	September 2022	September 2029	$ 995.69	5.07 %	$ 350 million	$ 350 million	46.5	July 13, 2029
3.15% Notes, Series CAA	December 2019	February 2030	$ 996.49	3.19 %	$ 600 million	$ 600 million	39.5	Nov. 19, 2029
2.05% Notes, Series CAD	October 2020	October 2030	$ 997.93	2.07 %	$ 500 million	$ 500 million	38	July 7, 2030
2.85% Sustainability-Linked Notes, Series CAF	June 2021	November 2031	$ 997.52	2.88 % [4]	$ 750 million	$ 750 million	34	Aug. 13, 2031
3.40% U.S. Dollar Sustainability-Linked Notes [3]	February 2022	May 2032	US$ 997.13	3.43 % [4]	US$ 900 million	US$ 900 million	25	Feb. 13, 2032
5.25% Sustainability-Linked Notes, Series CAG	September 2022	November 2032	$ 996.73	5.29 % [4]	$ 1.1 billion	$ 1.1 billion	51.5	Aug. 15, 2032
4.40% Notes, Series CL	April 2013	April 2043	$ 997.68	4.41 %	$ 600 million	$ 600 million	47	Oct. 1, 2042
5.15% Notes, Series CN	November 2013	November 2043	$ 995.00	5.18 %	$ 400 million	$ 400 million	50	May 26, 2043
4.85% Notes, Series CP	Multiple [5]	April 2044	$ 987.91 [5]	4.93 % [5]	$ 500 million [5]	$ 900 million [5]	46	Oct. 5, 2043
4.75% Notes, Series CR	September 2014	January 2045	$ 992.91	4.80 %	$ 400 million	$ 400 million	51.5	July 17, 2044
4.40% Notes, Series CU	March 2015	January 2046	$ 999.72	4.40 %	$ 500 million	$ 500 million	60.5	July 29, 2045
4.70% Notes, Series CW	Multiple [6]	March 2048	$ 998.06 [6]	4.71 % [6]	$ 325 million [6]	$ 475 million [6]	58.5	Sept. 6, 2047
4.60% U.S. Dollar Notes [3]	June 2018	November 2048	US$ 987.60	4.68 %	US$ 750 million	US$ 750 million	25	May 16, 2048
4.30% U.S. Dollar Notes [3]	May 2019	June 2049	US$ 990.48	4.36 %	US$ 500 million	US$ 500 million	25	Dec. 15, 2048
3.95% Notes, Series CAB	Multiple [7]	February 2050	$ 997.54 [7]	3.97 % [7]	$ 400 million [7]	$ 800 million [7]	57.5	Aug. 16, 2049
4.10% Notes, Series CAE	April 2021	April 2051	$ 994.70	4.13 %	$ 500 million	$ 500 million	53	Oct. 5, 2050
5.65% Notes, Series CAH	September 2022	September 2052	$ 996.13	5.68 %	$ 550 million	$ 550 million	61.5	Mar. 13, 2052

1 The effective interest rate is that which the notes would yield to an initial debt holder if held to maturity.

2 For Canadian dollar-denominated notes, the redemption price is equal to the greater of (i) the present value of the notes discounted at the Government of Canada yield plus the redemption present value spread calculated over the period to the redemption present value spread cessation date, or (ii) 100% of the principal amount thereof.

For U.S. dollar-denominated notes, the redemption price is equal to the greater of (i) the present value of the notes discounted at the U.S. Adjusted Treasury Rate (at the U.S. Treasury Rate for the 3.40% U.S. Dollar Sustainability-Linked Notes) plus the redemption present value spread calculated over the period to the redemption present value spread cessation date, or (ii) 100% of the principal amount thereof.

3 We have entered into foreign exchange derivatives (cross currency interest rate exchange agreements) that effectively converted the principal payments and interest obligations to Canadian dollar obligations as follows:

Series	Interest rate fixed at	Canadian dollar equivalent principal	Exchange rate
2.80% U.S. Dollar Notes	2.95 %	$ 792 million	$ 1.3205
3.70% U.S. Dollar Notes	3.41 %	$ 667 million	$ 1.3348
3.40% U.S. Dollar Sustainability-Linked Notes	3.89 %	$ 1,148 million	$ 1.2753
4.60% U.S. Dollar Notes	4.41 %	$ 974 million	$ 1.2985
4.30% U.S. Dollar Notes	4.27 %	$ 672 million	$ 1.3435

4 If we have not obtained a sustainability performance target verification assurance certificate for the fiscal year ended December 31, 2030, the sustainability-linked notes will bear interest at an increased rate from the trigger date through to their individual maturities. The interest rate on certain of the sustainability-linked notes may also increase (MFN step-up) in certain circumstances if we fail to meet additional sustainability and/or environmental, social or governance targets as may be provided for in a sustainability-linked bond; the interest rate on the sustainability-linked notes, however, in no event can exceed the initial rate by more than the aggregate MFN step-up and trigger event limit, whether as a result of not obtaining a sustainability performance target verification assurance certificate and/or any targets provided for in one or more future sustainability-linked bonds. Similarly, if we redeem any of the sustainability-linked notes and we have not obtained a sustainability performance target verification assurance certificate at the end of the fiscal year immediately preceding the date fixed for redemption, the interest accrued (if any) will be determined using the rates set out in the following table.

	Sustainability performance target verification assurance certificate				
Series	Fiscal year	Trigger date	Post-trigger event interest rate	Aggregate MFN step-up and trigger event limit	Redemption interest accrual rate if certificate not obtained
2.85% Sustainability-Linked Notes, Series CAF	2030	Nov. 14, 2030	3.85 %	N/A	3.85 %
3.40% U.S. Dollar Sustainability-Linked Notes	2030	Nov. 14, 2030	4.40 %	1.50 %	4.40 %
5.25% Sustainability-Linked Notes, Series CAG	2030	Nov. 15, 2030	6.00 %	1.50 %	6.00 %

5 $500 million of 4.85% Notes, Series CP were issued in April 2014 at an issue price of $ 998.74 and an effective interest rate of 4.86%. This series of notes was reopened in December 2015 and a further $ 400 million of notes were issued at an issue price of $974.38 and an effective interest rate of 5.02%.

6 $325 million of 4.70% Notes, Series CW were issued in March 2017 at an issue price of $ 990.65 and an effective interest rate of 4.76%. This series of notes was reopened in February 2018 and a further $ 150 million of notes were issued in March 2018 at an issue price of $1,014.11 and an effective interest rate of 4.61%.

7 $400 million of 3.95% Notes, Series CAB were issued in December 2019 at an issue price of $ 991.54 and an effective interest rate of 4.00%. This series of notes was reopened in May 2020 and a further $ 400 million of notes were issued at an issue price of $1,003.53 and an effective interest rate of 3.93%.

(c) TELUS Corporation commercial paper

TELUS Corporation has an unsecured commercial paper program, which is backstopped by our revolving $ 2.75 billion syndicated credit facility (see *(d)*) and is to be used for general corporate purposes, including capital expenditures and investments. This program enables us to issue commercial paper, subject to conditions related to debt ratings, up to a maximum aggregate equivalent amount at any one time of $2.0 billion (US$1.5 billion maximum). Foreign currency forward contracts are used to manage currency risk arising from issuing commercial paper denominated in U.S. dollars. Commercial paper debt is due within one year and is classified as a current portion of long-term debt, as the amounts are fully supported, and we expect that they will continue to be supported, by the revolving credit facility, which has no repayment requirements within the next year. As at December 31, 2022, we had $1.5 billion (2021 - $1.9 billion) of commercial paper outstanding, all of which was denominated in U.S. dollars (US$1.1 billion; 2021 - US$1.5 billion), with an effective average interest rate of 4.7%, maturing through June 2023.

(d) TELUS Corporation credit facilities

As at December 31, 2022, TELUS Corporation had an unsecured revolving $ 2.75 billion bank credit facility, expiring on April 6, 2026 (unchanged from December 31, 2021), with a syndicate of financial institutions, which is to be used for general corporate purposes, including the backstopping of commercial paper. As at December 31, 2022, TELUS Corporation had an unsecured non-revolving $1.1 billion bank credit facility, maturing July 9, 2024, with a syndicate of financial institutions, which is to be used for general corporate purposes. As at December 31, 2022, we had drawn $1.1 billion on the non-revolving bank credit facility, with an effective average interest rate of 5.3% through January 2023.

The TELUS Corporation credit facilities bear interest at prime rate, U.S. Dollar Base Rate, a bankers' acceptance rate or London interbank offered rate (LIBOR) (as such terms are used or defined in the credit facilities), plus applicable margins. The credit facilities contain customary representations, warranties and covenants, including two financial quarter-end ratio tests. These tests are that our leverage ratio must not exceed 4.25:1.00 and our operating cash flow to interest expense ratio must not be less than 2.00:1.00, all as defined in the credit facilities.

Continued access to the TELUS Corporation credit facilities is not contingent upon TELUS Corporation maintaining a specific credit rating.

As at December 31 (millions)	**2022**	2021
Net available	**$ 1,292**	$ 850
Backstop of commercial paper	**1,458**	1,900
Gross available revolving $2.75 billion bank credit facility	**$ 2,750**	$ 2,750

We had $119 million of letters of credit outstanding as at December 31, 2022 (2021 – $ 193 million), issued under various uncommitted facilities; such letter of credit facilities are in addition to the ability to provide letters of credit pursuant to our committed revolving bank credit facility.

(e) TELUS Communications Inc. debentures

The Series 5 Debentures were issued by a predecessor corporation of TELUS Communications Inc., BC TEL, under a Trust Indenture dated May 31, 1990. The Series B Debentures were issued by a predecessor corporation of TELUS Communications Inc., AGT Limited, under a Trust Indenture dated August 24, 1994, and a supplemental trust indenture dated September 22, 1995.

				Principal face amount		Redemption present value spread
Series [1]	Issued	Maturity	Issue price	Originally issued	Outstanding at financial statement date	Basis points
9.65% Debentures, Series 5	April 1992	April 2022	$ 972.00	$ 150 million	$ NIL	N/A (non-redeemable)
8.80% Debentures, Series B	September 1995	September 2025	$ 995.10	$ 200 million	$ 200 million	15 [2]

1 Interest is payable semi-annually.
2 At any time prior to the maturity date set out in the table, the debentures are redeemable at our option, in whole at any time, or in part from time to time, on not fewer than 30 days' prior notice. The redemption price is equal to the greater of (i) the present value of the debentures discounted at the Government of Canada yield plus the redemption present value spread, or (ii) 100% of the principal amount thereof. In addition, accrued and unpaid interest, if any, will be paid to the date fixed for redemption.

The debentures became obligations of TELUS Communications Inc. pursuant to an amalgamation on January 1, 2001, are not secured by any mortgage, pledge or other charge, and are governed by certain covenants, including a negative pledge and a limitation on issues of additional debt, subject to a debt to capitalization ratio and an interest coverage test. Effective June 12, 2009, TELUS Corporation guaranteed the payment of the debentures' principal and interest.

(f) TELUS International (Cda) Inc. credit facility

As at December 31, 2022, TELUS International (Cda) Inc. had a credit facility, secured by its assets, expiring on January 3, 2028 (2021 – January 28, 2025), with a syndicate of financial institutions, including TELUS Corporation. The credit facility is comprised of revolving components totalling US$800 million, with TELUS Corporation as approximately 7.2% lender (2021 –US$620 million, with TELUS Corporation as approximately 7.5% lender and US$230 million, with TELUS Corporation as 12.5% lender) and amortizing term loan components totalling US$1.2 billion, with TELUS Corporation as approximately 7.2% lender (2021 – US$600 million, with TELUS Corporation as 12.5% lender). The credit facility is non-recourse to TELUS Corporation. The outstanding revolving components and term loan components had a weighted average interest rate of 6.7% as at December 31, 2022.

As at December 31 (millions)	**2022**			2021		
	Revolving components [1]	Term loan components [2]	Total	Revolving components [1]	Term loan components [2]	Total
Available [3]	**US$ 658**	**US$ 600**	**US$ 1,258**	US$ 725	US$ N/A	US$ 725
Outstanding						
Due to other	**132**	**557**	**689**	109	737	846
Due to TELUS Corporation	**10**	**43**	**53**	16	71	87
	US$ 800	**US$ 1,200**	**US$ 2,000**	US$ 850	US$ 808	US$ 1,658

1 Revolving component available is gross of swingline draw of US$ NIL (2021 - US$8).
2 We had entered into a receive-floating interest rate, pay-fixed interest rate exchange agreement that effectively converted our interest obligations on a portion of the debt to a fixed rate of 2.64%; this agreement matured in the fourth quarter of fiscal 2022 (see *Note 4(h)*).

Relative to amounts owed to the syndicate of financial institutions, excluding TELUS Corporation, we have entered into foreign exchange derivatives (cross currency interest rate exchange agreements) that effectively convert an amortizing amount of US$362 of the principal payments, and associated interest obligations, to European euro obligations with an effective fixed interest rate of 0.65% and an effective fixed economic exchange rate of US$ 1.0932:€1.00. These have been accounted for as a net investment hedge in a foreign operation (see *Note 4*).

3 Of the amounts available at December 31, 2022, US$ 525 of the revolving components and US$ 600 of the term loan components had a condition precedent of consummating the WillowTree acquisition, which occurred on January 3, 2023 (see *Note 18(d)*).

The TELUS International (Cda) Inc. credit facility bears interest at prime rate, U.S. Dollar Base Rate, a bankers' acceptance rate or term secured overnight financing rate (SOFR) (all such terms as used or defined in the credit facility), plus applicable margins. The credit facility contains customary representations, warranties and covenants, including two financial quarter-end ratio tests: the TELUS International (Cda) Inc. quarter-end net debt to operating cash flow ratio must not exceed 4.25:1.00 through fiscal 2023, 3.75:1.00 through fiscal 2024, and 3.25:1.00 subsequently; and the quarter-end operating cash flow to debt service (interest and scheduled principal repayment) ratio must not be less than 1.50:1.00; all as defined in the credit facility.

The term loan components are subject to an amortization schedule which requires that 5% of the principal advanced be repaid each year of the term of the agreement, with the balance due at maturity.

Concurrent with the acquisition of WillowTree, as set out in *Note 18(d)*, TELUS International (Cda) Inc. drew down US$363 million and US$600 million of its available credit facility revolving components and term loan components, respectively.

(g) Other

Other liabilities bear interest at 3.35%, are secured by the AWS-4 spectrum licences associated with these other liabilities and a real estate holding, and are subject to amortization schedules, so that the principal is repaid over the periods to maturity, the last period ending March 31, 2035.

(h) Lease liabilities

Lease liabilities are subject to amortization schedules, so that the principal is repaid over various periods, including reasonably expected renewals. The weighted average interest rate on lease liabilities was approximately 4.6% as at December 31, 2022.

(i) Long-term debt maturities

Anticipated requirements to meet long-term debt repayments, calculated for long-term debt owing as at December 31, 2022, are as follows:

Composite long-term debt denominated in	Canadian dollars			U.S. dollars					Other currencies	
	Long-term debt, excluding	Leases		Long-term debt, excluding	Leases	Currency swap agreement amounts to be exchanged			Leases	
Years ending December 31 (millions)	leases	*(Note 19)*	Total	leases	*(Note 19)*	(Receive) [1]	Pay	Total	*(Note 19)*	Total
2023	$ 537	$ 412	$ 949	$ 1,486	$ 31	$ (1,507)	$ 1,510	$ 1,520	$ 54	$ 2,523
2024	2,267	388	2,655	38	20	(28)	28	58	49	2,762
2025	1,023	260	1,283	38	19	(434)	424	47	38	1,368
2026	1,424	177	1,601	38	20	—	—	58	29	1,688
2027	25	154	179	1,528	15	(1,490)	1,459	1,512	16	1,707
2028-2032	5,629	302	5,931	1,972	12	(1,219)	1,148	1,913	33	7,877
Thereafter	5,187	280	5,467	1,693	—	(1,693)	1,646	1,646	13	7,126
Future cash outflows in respect of composite long-term debt principal repayments	16,092	1,973	18,065	6,793	117	(6,371)	6,215	6,754	232	25,051
Future cash outflows in respect of associated interest and like carrying costs [2]	7,867	425	8,292	2,912	30	(2,623)	2,522	2,841	36	11,169
Undiscounted contractual maturities (*Note 4(c)*)	$ 23,959	$ 2,398	$ 26,357	$ 9,705	$ 147	$ (8,994)	$ 8,737	$ 9,595	$ 268	$ 36,220

1 Where applicable, cash flows reflect foreign exchange rates as at December 31, 2022.
2 Future cash outflows in respect of associated interest and like carrying costs for commercial paper and amounts drawn under our credit facilities (if any) have been calculated based upon the rates in effect as at December 31, 2022.

27 other long-term liabilities

As at December 31 (millions)	*Note*	**2022**	2021
Contract liabilities	*24*	**$ 82**	$ 82
Other		**2**	3
Deferred revenues		**84**	85
Pension benefit liabilities	*15*	**392**	643
Other post-employment benefit liabilities		**68**	66
Derivative liabilities	*4(h)*	**24**	73
Investment in real estate joint ventures	*21(b)*	**9**	9
Other		**53**	23
		630	899
Deferred customer activation and connection fees	*24*	**6**	8
		$ 636	$ 907

28 owners' equity

(a) TELUS Corporation Common Share capital - general

Our authorized share capital is as follows:

As at December 31	**2022**	2021
First Preferred Shares	**1 billion**	1 billion
Second Preferred Shares	**1 billion**	1 billion
Common Shares	**4 billion**	4 billion

Only holders of Common Shares may vote at our general meetings, with each holder of Common Shares entitled to one vote per Common Share held at all such meetings so long as not less than 66-2/3% of the issued and outstanding Common Shares are owned by Canadians. With respect to priority in the payment of dividends and in the distribution of assets in the event of our liquidation, dissolution or winding-up, whether voluntary or involuntary, or any other distribution of our assets among our shareholders for the purpose of winding up our affairs, preferences are as follows: First Preferred Shares; Second Preferred Shares; and finally Common Shares.

As at December 31, 2022, approximately 39 million Common Shares were reserved for issuance from Treasury under a dividend reinvestment and share purchase plan (see *Note 13(b)*); approximately 16 million Common Shares were reserved for issuance from Treasury under a restricted share unit plan (see *Note 14(b)*); and approximately 93 million Common Shares were reserved for issuance from Treasury under a share option plan (see *Note 14(d)*).

(b) Purchase of TELUS Corporation Common Shares for cancellation pursuant to normal course issuer bid

As referred to in *Note 3*, we may purchase a portion of our Common Shares for cancellation pursuant to normal course issuer bids in order to maintain or adjust our capital structure. In June 2022, we received approval for a normal course issuer bid to purchase and cancel up to 10 million of our Common Shares (up to a maximum amount of $ 250 million) from June 6, 2022, to June 5, 2023.

(c) Subsidiary with significant non-controlling interest

Our TELUS International (Cda) Inc. subsidiary is incorporated under the *Business Corporations Act* (British Columbia) and has geographically dispersed operations with principal places of business in Asia, Central America, Europe and North America.

Changes in interests and amounts during the years ended December 31, 2022 and 2021, and which are reflected in the Consolidated statement of changes in owners' equity, are set out in the following table.

	Economic interest [1]		Voting interest [1]	
Years ended December 31	**2022**	2021	**2022**	2021
Interest in TELUS International (Cda) Inc., beginning of period	**55.1 %**	62.6 %	**70.9 %**	62.6 %
Effect of				
Initial public offering of subordinate voting shares by TELUS International (Cda) Inc.	**—**	(4.6)	**—**	1.7
Secondary offerings of TELUS International (Cda) Inc. subordinate voting shares by:				
TELUS Corporation	**—**	(2.8)	**—**	(1.2)
Non-controlling interests [2]	**—**	—	—	7.8
TELUS Corporation acquisition of shares from non-controlling interests [3]	**1.6**	—	**1.5**	—
Share-based compensation and other	**(0.1)**	(0.1)	**—**	—
Interest in TELUS International (Cda) Inc., end of period [4]	**56.6 %**	55.1 %	**72.4 %**	70.9 %

1 Due to the voting rights associated with the multiple voting shares held by TELUS Corporation, our economic and voting interests subsequent to the initial public offering differ.

2 Multiple voting shares held by one non-controlling shareholder were automatically converted into subordinate voting shares in conjunction with secondary offerings, and this conversion had the effect of increasing our voting interest.

3 Acquisition of shares from non-controlling interests for $123 million, of which $86 million was charged to amounts recorded in owners' equity for contributed surplus and the balance was charged to non-controlling interests.

4 Subsequent to December 31, 2022, TELUS International (Cda) Inc. issued subordinate voting shares, as set out in *Note 18(d)*, that had the effect of changing our economic interest to 55.3% and our voting interest to 72.2%.

In February 2021, TELUS International (Cda) Inc. made an initial public offering of subordinate voting shares; both TELUS Corporation and a non-controlling shareholder of TELUS International (Cda) Inc. individually also offered subordinate voting shares in conjunction with the initial public offering. In September 2021, non-controlling shareholders of TELUS International (Cda) Inc. individually offered subordinate voting shares in a secondary offering. Changes in the ownership interests of our TELUS International (Cda) Inc. subsidiary during the year ended December 31, 2021, are set out in the following table.

	Effects of initial public offering and secondary offering on recorded amounts of owners' equity				
Year ended December 31, 2021 (millions)	Net cash proceeds	Income taxes	Net	Other	Total
Initial public offering of subordinate voting shares by TELUS International (Cda) Inc.	$ 630	$ (10)	$ 640		
Secondary offering of TELUS International (Cda) Inc. subordinate voting shares by TELUS Corporation	197	4	193		
	$ 827	$ (6)	$ 833		
Contributed surplus			$ 440	$ (10)	$ 430
Non-controlling interests			393	1	394
			$ 833	$ (9)	$ 824

Summarized financial information

Summarized financial information of our TELUS International (Cda) Inc. subsidiary is set out in the following table.

As at, or for the years ended, December 31 (millions) [1]	2022	2021
Statement of financial position		
Current assets	**$ 926**	$ 874
Non-current assets	**$ 3,875**	$ 3,804
Current liabilities	**$ 733**	$ 1,098
Non-current liabilities	**$ 1,581**	$ 1,475
Statement of income and other comprehensive income		
Revenue and other income	**$ 3,214**	$ 2,754
Net income	**$ 235**	$ 99
Comprehensive income	**$ 327**	$ 22
Statement of cash flows		
Cash provided by operating activities	**$ 519**	$ 331
Cash used by investing activities	**$ (156)**	$ (137)
Cash used by financing activities	**$ (342)**	$ (235)

1 As required by IFRS-IASB, this summarized financial information excludes inter-company eliminations.

29 contingent liabilities

(a) Claims and lawsuits

General

A number of claims and lawsuits (including class actions and intellectual property infringement claims) seeking damages and other relief are pending against us and, in some cases, other mobile carriers and telecommunications service providers. As well, we have received notice of, or are aware of, certain possible claims (including intellectual property infringement claims) against us and, in some cases, other mobile carriers and telecommunications service providers.

It is not currently possible for us to predict the outcome of such claims, possible claims and lawsuits due to various factors, including: the preliminary nature of some claims; uncertain damage theories and demands; an incomplete factual record; uncertainty concerning legal theories and procedures and their resolution by the courts, at both the trial and the appeal levels; and the unpredictable nature of opposing parties and their demands.

However, subject to the foregoing limitations, management is of the opinion, based upon legal assessments and information presently available, that it is unlikely that any liability, to the extent not provided for through insurance or otherwise, would have a material effect on our financial position and the results of our operations, including cash flows, with the exception of the items enumerated following.

Certified class actions

Certified class actions against us include the following:

Per minute billing class action

In 2008, a class action was brought in Ontario against us alleging breach of contract, breach of the Ontario *Consumer Protection Act*, breach of the *Competition Act* and unjust enrichment, in connection with our practice of "rounding up" mobile airtime to the nearest minute and charging for the full minute. The action sought certification of a national class. In November 2014, an Ontario class only was certified by the Ontario Superior Court of Justice in relation to the breach of contract, breach of *Consumer Protection Act*, and unjust enrichment claims; all appeals of the certification decision have now been exhausted. At the same time, the Ontario Superior Court of Justice declined to stay the claims of our business customers, notwithstanding an arbitration clause in our customer service agreements with those customers. This latter decision was appealed and on May 31, 2017, the Ontario Court of Appeal dismissed our appeal. The Supreme Court of Canada granted us leave to appeal this decision and on April 4, 2019, granted our appeal and stayed the claims of business customers.

Call set-up time class actions

In 2005, a class action was brought against us in British Columbia alleging that we have engaged in deceptive trade practices in charging for incoming calls from the moment the caller connects to the network, and not from the moment the incoming call is connected to the recipient. In 2011, the Supreme Court of Canada upheld a stay of all of the causes of action advanced by the plaintiff in this class action, with one exception, based on the arbitration clause that was included in our customer service agreements. The sole exception was the cause of action based on deceptive or unconscionable practices under the British Columbia *Business Practices and Consumer Protection Act*, which the Supreme Court of Canada declined to stay. In January 2016, the British Columbia Supreme Court certified this class action in relation to the claim under the *Business Practices and Consumer Protection Act*. The class is limited to residents of British Columbia who contracted mobile services with us in the period from January 21, 1999, to April 2010. We have appealed the certification decision. A companion class action was brought against us in Alberta at the same time as the British Columbia class action. The Alberta class action duplicates the allegations in the British Columbia action, but has not proceeded to date and is not certified. Subject to a number of conditions, including court approval, we have now settled both the British Columbia and the Alberta class actions.

Uncertified class actions

Uncertified class actions against us include:

9-1-1 class actions

In 2008, a class action was brought in Saskatchewan against us and other Canadian telecommunications carriers alleging that, among other matters, we failed to provide proper notice of 9-1-1 charges to the public, have been deceitfully passing them off as government charges, and have charged 9-1-1 fees to customers who reside in areas where 9-1-1 service is not available. The plaintiffs advance causes of action in breach of contract, misrepresentation and false advertising and seek certification of a national class. A virtually identical class action was filed in Alberta at the same time, but the Alberta Court of Queen's Bench declared that class action expired against us as of 2009. No steps have been taken in this proceeding since 2016.

Public Mobile class actions

In 2014, class actions were brought against us in Quebec and Ontario on behalf of Public Mobile's customers, alleging that changes to the technology, services and rate plans made by us contravene our statutory and common law obligations. In particular, the Quebec action alleges that our actions constitute a breach of the Quebec *Consumer Protection Act*, the Quebec *Civil Code*, and the Ontario *Consumer Protection Act*. On June 28, 2021, the Quebec Superior Court approved the discontinuance of this claim against TELUS. The Ontario class action alleges negligence, breach of express and implied warranty, breach of the *Competition Act*, unjust enrichment, and waiver of tort. No steps have been taken in this proceeding since it was filed and served.

Summary

We believe that we have good defences to the above matters. Should the ultimate resolution of these matters differ from management's assessments and assumptions, a material adjustment to our financial position and the results of our operations, including cash flows, could result. Management's assessments and assumptions include that reliable estimates of any such exposure cannot be made considering the continued uncertainty about: the nature of the damages that may be sought by the plaintiffs; the causes of action that are being, or may ultimately be, pursued; and, in the case of the uncertified class actions, the causes of action that may ultimately be certified.

(b) Indemnification obligations

In the normal course of operations, we provide indemnification in conjunction with certain transactions. The terms of these indemnification obligations range in duration. These indemnifications would require us to compensate the indemnified parties for costs incurred as a result of failure to comply with contractual obligations, or litigation claims or statutory sanctions, or damages that may be suffered by an indemnified party. In some cases, there is no maximum limit on these indemnification obligations. The overall maximum amount of an indemnification obligation will depend on future events and conditions and therefore cannot be reasonably estimated. Where appropriate, an indemnification obligation is recorded as a liability. Other than obligations recorded as liabilities at the time of the related transactions, historically we have not made significant payments under these indemnifications. As at December 31, 2022, we had no liability recorded in respect of our indemnification obligations.

See *Note 21(b)* for details regarding our guarantees to the real estate joint ventures.

(c) Concentration of labour

In 2021, we commenced collective bargaining with the Telecommunications Workers Union, United Steelworkers Local 1944 (TWU), to renew a collective agreement that expired on December 31, 2021; the contract covered approximately 17% of our Canadian workforce as at December 31, 2022. The expired contract remains in effect until a new agreement is reached or a work stoppage occurs.

During the fourth quarter of 2022, the parties participated in conciliation with an appointed federal conciliator following the TWU's application to the Federal Minister of Labour for assistance in negotiations. The TWU subsequently held a ratification vote on TELUS' offer, which resulted in 65% of union members voting against accepting the proposed contract. Should a new collective agreement not be reached, there is the risk of a labour disruption after all legal pre-conditions have been met. As a labour disruption could occur in multiple forms, the operational and financial impacts of a labour disruption on us are not practicably determinable currently.

30 related party transactions

(a) Transactions with key management personnel

Our key management personnel have authority and responsibility for overseeing, planning, directing and controlling our activities and consist of our Board of Directors and our Executive Team.

Total compensation expense for key management personnel, and the composition thereof, is as follows:

Years ended December 31 (millions)	2022	2021
Short-term benefits	**$ 17**	$ 16
Post-employment pension [1] and other benefits	**10**	18
Share-based compensation [2]	**65**	70
	$ 92	$ 104

1 Our Executive Team members are members of our *Pension Plan for Management and Professional Employees of TELUS Corporation* and certain other non-registered, non-contributory supplementary defined benefit and defined contribution pension plans.

2 We accrue an expense for the notional subset of our restricted share units with market performance conditions using a fair value determined by a Monte Carlo simulation. Restricted share units with an equity settlement feature are accounted for as equity instruments. The expense for restricted share units that do not ultimately vest is reversed against the expense that was previously recorded in their respect.

As disclosed in *Note 14*, we made initial awards of share-based compensation in 2022 and 2021, including, as set out in the following table, to our key management personnel. As most of these awards are cliff-vesting or graded-vesting and have multi-year requisite service periods, the related expense is being recognized rateably over a period of years and thus only a portion of the 2022 and 2021 initial awards are included in the amounts in the table above.

Twelve-month periods ended December 31 ($ in millions)	2022			2021		
	Number of units	Notional value [1]	Grant-date fair value [1]	Number of units	Notional value [1]	Grant-date fair value [1]
TELUS Corporation						
Restricted share units	**1,007,431**	**$ 32**	**$ 39**	1,273,308	$ 33	$ 36
TELUS International (Cda) Inc.						
Restricted share units	**265,617**	**9**	**9**	437,857	15	15
Share options	**—**	**—**	**—**	167,693	1	1
		9	**9**		16	16
		$ 41	**$ 48**		$ 49	$ 52

1 The notional value of restricted share units is determined by multiplying the equity share price at the time of award by the number of units awarded; the grant-date fair value differs from the notional value because the fair values of some awards have been determined using a Monte Carlo simulation (see *Note 14(b)*). The notional value of share options has been determined using an option pricing model.

The amount recorded for liability-accounted restricted share units and share options outstanding as at December 31, 2022 was $1 million (2021 - $7 million).

Our *Directors' Deferred Share Unit Plan* provides that, in addition to his or her annual equity grant of deferred share units, a director may elect to receive his or her annual retainer and meeting fees in deferred share units, TELUS Corporation Common Shares or cash. Deferred share units entitle directors to a specified number of TELUS Corporation Common Shares. Deferred share units accounted for as liabilities have been paid out when a director ceased to be a director, for any reason, at a time elected by the director in accordance with the *Directors' Deferred Share Unit Plan*; during the years ended December 31, 2022 and 2021, no amounts were paid out. As at December 31, 2022 and 2021, no liability-accounted share-based compensation awards were outstanding.

During the year ended December 31, 2022, key management personnel exercised 125,806 (2021 - 215,973) TELUS International (Cda) Inc. share options, which had an intrinsic value of $2 million (2021 - $7 million) at the time of exercise, reflecting a weighted average price at the date of exercise of $30.33 (2021 - $39.58).

Employment agreements with members of the Executive Team typically provide for severance payments if an executive's employment is terminated without cause: generally 18–24 months of base salary, benefits and accrual of pension service in lieu of notice, and 50% of base salary in lieu of an annual cash bonus. In the event of a change in control, Executive Team members are not entitled to treatment any different than that given to our other employees with respect to non-vested share-based compensation.

(b) Transactions with defined benefit pension plans

During the year ended December 31, 2022, we provided our defined benefit pension plans with management and administrative services on a cost recovery basis and actuarial services on an arm's-length basis; the charges for these services amounted to $7 million (2021 – $7 million).

(c) Transactions with real estate joint venture

During the years ended December 31, 2022 and 2021, we had transactions with the TELUS Sky real estate joint venture, which is a related party, as set out in *Note 21*. As at December 31, 2022, we had recorded lease liabilities of $ 87 million (2021 - $95 million) in respect of our TELUS Sky lease, and monthly cash payments are made in accordance with the lease agreement; one-third of those amounts is due to our economic interest in the real estate joint venture.

31 additional statement of cash flow information

(a) Statements of cash flows – operating activities and investing activities

Years ended December 31 (millions)	*Note*	**2022**	2021
OPERATING ACTIVITIES			
Net change in non-cash operating working capital			
Accounts receivable		**$ (312)**	$ (290)
Inventories		**(89)**	(41)
Contract assets		**9**	(8)
Prepaid expenses		**(56)**	(40)
Accounts payable and accrued liabilities		**173**	289
Income and other taxes receivable and payable, net		**50**	(77)
Advance billings and customer deposits		**(12)**	62
Provisions		**44**	23
		$ (193)	$ (82)
INVESTING ACTIVITIES			
Cash payments for capital assets, excluding spectrum licences			
Capital asset additions			
Gross capital expenditures			
Property, plant and equipment	*17*	**$ (3,291)**	$ (3,188)
Intangible assets subject to amortization	*18*	**(1,021)**	(864)
		(4,312)	(4,052)
Additions arising from leases	*17*	**840**	554
Capital expenditures	*5*	**(3,472)**	(3,498)
Effect of asset retirement obligations		**198**	171
		(3,274)	(3,327)
Other non-cash items included above			
Change in associated non-cash investing working capital		**(175)**	401
Non-cash change in asset retirement obligation		**(198)**	(171)
		(373)	230
		$ (3,647)	$ (3,097)

(b) Changes in liabilities arising from financing activities

		Year ended December 31, 2021					Year ended December 31, 2022				
		Statement of cash flows		Non-cash changes			Statement of cash flows		Non-cash changes		
(millions)	As at January 1, 2021	Issued or received	Redemptions, repayments or payments	Foreign exchange movement (*Note 4(i)*)	Other	As at December 31, 2021	Issued or received	Redemptions, repayments or payments	Foreign exchange movement (*Note 4(i)*)	Other	As at December 31, 2022
Dividends payable to holders of Common Shares	$ 403	$ —	$ (1,665)	$ —	$ 1,711	$ 449	$ —	**$ (1,846)**	**$ —**	**$ 1,899**	**$ 502**
Dividends reinvested in shares from Treasury	—	—	620	—	(620)	—	—	**658**	**—**	**(658)**	**—**
	$ 403	$ —	$ (1,045)	$ —	$ 1,091	$ 449	$ —	**$ (1,188)**	**$ —**	**$ 1,241**	**$ 502**
Short-term borrowings	$ 100	$ 12	$ (2)	$ —	$ 4	$ 114	$ 480	**$ (497)**	**$ —**	**$ 7**	**$ 104**
Long-term debt											
TELUS Corporation senior notes	$ 15,021	$ 1,250	$ (1,000)	$ (13)	$ —	$ 15,258	$ 3,143	**$ —**	**$ 280**	**$ (21)**	**$ 18,660**
TELUS Corporation commercial paper	731	3,585	(2,378)	(38)	—	1,900	5,523	**(6,077)**	**112**	**—**	**1,458**
TELUS Corporation credit facilities	—	—	—	—	—	—	1,594	**(449)**	**—**	**—**	**1,145**
TELUS Communications Inc. debentures	622	—	(175)	—	1	448	—	**(249)**	**—**	**—**	**199**
TELUS International (Cda) Inc. credit facility	1,804	56	(797)	(4)	3	1,062	11	**(219)**	**68**	**(8)**	**914**
Other	273	—	(89)	—	124	308	—	**(665)**	**—**	**678**	**321**
Lease liabilities	1,837	—	(502)	1	540	1,876	—	**(495)**	**(3)**	**962**	**2,340**
Derivatives used to manage currency risk arising from U.S. dollar- denominated long-term debt – liability (asset)	120	2,406	(2,437)	10	(95)	4	6,105	**(6,000)**	**(423)**	**234**	**(80)**
	20,408	7,297	(7,378)	(44)	573	20,856	16,376	**(14,154)**	**34**	**1,845**	**24,957**
To eliminate effect of gross settlement of derivatives used to manage currency risk arising from U.S. dollar-denominated long-term debt	—	(2,406)	2,406	—	—	—	(6,105)	**6,105**	**—**	**—**	**—**
	$ 20,408	$ 4,891	$ (4,972)	$ (44)	$ 573	$ 20,856	$ 10,271	**$ (8,049)**	**$ 34**	**$ 1,845**	**$ 24,957**

TELUS CORPORATION

Management's discussion and analysis

2022



Caution regarding forward-looking statements

The terms *TELUS, the Company, we, us* and *our* refer to TELUS Corporation and, where the context of the narrative permits or requires, its subsidiaries.

This document contains forward-looking statements about expected events and our financial and operating performance. Forward-looking statements include any statements that do not refer to historical facts. They include, but are not limited to, statements relating to our objectives and our strategies to achieve those objectives, our plans and expectations regarding the impact of the COVID-19 pandemic and responses to it, our expectations regarding trends in the telecommunications industry (including demand for data and ongoing subscriber base growth), and our financing plans (including our multi-year dividend growth program). Forward-looking statements are typically identified by the words *assumption, goal, guidance, objective, outlook, strategy, target* and other similar expressions, or future or conditional verbs such as *aim*, *anticipate*, *believe*, *could*, *expect*, *intend*, *may*, *plan*, *predict*, *seek*, *should*, *strive* and *will*. These statements are made pursuant to the "safe harbour" provisions of applicable securities laws in Canada and the United States *Private Securities Litigation Reform Act of 1995* .

By their nature, forward-looking statements are subject to inherent risks and uncertainties and are based on assumptions, including assumptions about future economic conditions and courses of action. These assumptions may ultimately prove to have been inaccurate and, as a result, our actual results or other events may differ materially from expectations expressed in or implied by the forward-looking statements. Our general outlook and assumptions for 2023 are presented in *Section 9 General trends, outlook and assumptions, and regulatory developments and proceedings* in this Management's discussion and analysis (MD&A).

Risks and uncertainties that could cause actual performance or other events to differ materially from the forward-looking statements made herein and in other TELUS filings include, but are not limited to, the following:

- The COVID-19 pandemic including its impacts on our customers, suppliers and vendors, our team members and our communities, as well as changes resulting from the pandemic to our business and operations.
- Regulatory matters including: changes to our regulatory regime (the timing of announcement or implementation of which are uncertain) or the outcomes of proceedings, cases or inquiries relating to its application, including but not limited to those set out in *Section 9.4 Communications industry regulatory developments and proceedings* in this MD&A, such as the potential for government to allow consolidation of competitors in our industry or conversely for government to intervene with the intent of further increasing competition, for example, through mandated wholesale access; the potential for additional government intervention on pricing; federal and provincial consumer protection legislation; a new policy direction to the CRTC; the introduction in Parliament of new federal privacy legislation that could materially expand or alter the scope of consumer privacy rights, include significant administrative monetary penalties and a privacy right of action, and implement a new regulatory regime for the use of artificial intelligence (AI) in the private sector, with significant enforcement powers; amendments to existing federal legislation; potential threats to unitary federal regulatory authority over communications in Canada; potential threats to the CRTC's ability to enforce competitive safeguards such as the Standstill Rule and the *Wholesale Code*, which aims to ensure the fair treatment by vertically integrated firms of rival competitors operating as both broadcasting distributors and programming services; regulatory action by the Competition Bureau or other regulatory agencies; spectrum allocation and compliance with licences, including our compliance with licence conditions, changes to spectrum licence fees, spectrum policy determinations such as restrictions on the purchase, sale, subordination, use and transfer of spectrum licences, the cost and availability of spectrum and timing of spectrum allocation, and ongoing and future consultations and decisions on spectrum licensing and policy frameworks, auctions and allocation; draft legislation permitting the government to restrict the use in telecommunications networks of equipment made by specified companies, potentially including Huawei and ZTE; draft legislation imposing new cybersecurity reporting requirements; the request by the Minister of Innovation, Science and Industry to telecommunications service providers, including TELUS, to improve network resiliency; restrictions on non-Canadian ownership and control of the common shares of TELUS Corporation (Common Shares) and the ongoing monitoring of, and compliance with, such restrictions; unanticipated changes to the current copyright regime, which could impact obligations for internet service providers or broadcasting undertakings; and our ability to comply with complex and changing regulation of the healthcare and medical devices industry in the jurisdictions in which we operate, including as an operator of health clinics. The jurisdictions in which we operate, as well as the contracts that we enter into (particularly contracts entered into by TELUS International (Cda) Inc. (TELUS International or TI)), require us to comply with, or facilitate our clients' compliance with, numerous, complex and sometimes conflicting legal regimes, both domestically and internationally. See *TELUS International's financial performance which impacts our financial performance* below.

- Competitive environment including: our ability to continue to retain customers through an enhanced customer service experience that is differentiated from our competitors, including through the deployment and operation of evolving network infrastructure; intense competition, including the ability of industry competitors to successfully combine a mix of new service offerings, in some cases under one bundled and/or discounted monthly rate, along with their existing services; the success of new products, services and supporting systems, such as home automation, security and Internet of Things (IoT) services for internet-connected devices; continued intense competition across all services among telecommunications companies, cable companies, other communications companies and over-the-top (OTT) services, which, among other things, places pressures on current and future average revenue per subscriber per month (ARPU), cost of acquisition, cost of retention and churn rates for all services, as do market conditions, government actions, customer usage patterns, increased data bucket sizes or flat-rate pricing trends for voice and data, inclusive rate plans for voice and data, and availability of Wi-Fi networks for data; consolidation, mergers and acquisitions of industry competitors; subscriber additions, losses and retention volumes; our ability to obtain and offer content on a timely basis across multiple devices on mobile and TV platforms at a reasonable cost as content costs per unit continue to grow; vertical integration in the broadcasting industry resulting in competitors owning broadcast content services, and timely and effective enforcement of related regulatory safeguards; TI's ability to compete with professional services companies that offer consulting services, information technology companies with digital capabilities, and traditional contact centre and business process outsourcing companies that are expanding their capabilities to offer higher-margin and higher-growth digital services; in our TELUS Health business, our ability to compete with other providers of employee and family assistance programs, benefits administration, electronic medical records and pharmacy management products, claims adjudicators, systems integrators and health service providers, including competitors with a vertically integrated mix of health services delivery, IT solutions and related services, global providers that could achieve expanded Canadian footprints, and providers of virtual healthcare services, preventative health services and personal emergency response services; and in our TELUS Agriculture & Consumer Goods business, our ability to compete with focused software and IoT competitors.

- Technology including: reduced utilization and increased commoditization of traditional fixed voice services (local and long distance) resulting from impacts of OTT applications and mobile substitution; a declining overall market for TV services, resulting in part from content piracy and signal theft, a rise in OTT direct-to-consumer video offerings and virtual multichannel video programming distribution platforms; the increasing number of households with only mobile and/or internet-based telephone services; potential decline in ARPU as a result of, among other factors, substitution by messaging and OTT applications; substitution by increasingly available Wi-Fi services; and disruptive technologies, such as OTT IP services, including software-defined networks in the business market that may displace or cause us to reprice our existing data services, and self-installed technology solutions.

  Challenges to our ability to deploy technology including : high subscriber demand for data that challenges wireless networks and spectrum capacity levels and may be accompanied by increases in delivery cost; our reliance on information technology and our ability to continually streamline our legacy systems; the roll-out, anticipated benefits and efficiencies, and ongoing evolution of wireless broadband technologies and systems, including video distribution platforms and telecommunications network technologies, broadband initiatives (such as fibre-to-the-premises (FTTP), wireless small-cell deployment and 5G wireless); availability of resources and our ability to build out adequate broadband capacity; our reliance on wireless network access agreements, which have facilitated our deployment of mobile technologies; our choice of suppliers and those suppliers' ability to maintain and service their product lines, which could affect the success of upgrades to, and evolution of, technology that we offer; supplier limitations and concentration and market power for products such as network equipment, TELUS TV® and mobile handsets; our expected long-term need to acquire additional spectrum capacity through future spectrum auctions and from third parties to address increasing demand for data, and our ability to utilize spectrum we acquire; deployment and operation of new fixed broadband network technologies at a reasonable cost and the availability and success of new products and services to be rolled out using such network technologies; network reliability and change management; and our deployment of self-learning tools and automation, which may change the way we interact with customers.

Capital expenditure levels and potential outlays for spectrum licences in auctions or purchases from third parties affect and are affected by: our broadband initiatives, including connecting more homes and businesses directly to fibre; our ongoing deployment of newer mobile technologies, including wireless small cells that can improve coverage and capacity; investments in network technology required to comply with laws and regulations relating to the security of cyber systems, including bans on the products and services of certain vendors; investments in network resiliency and reliability, including measures to address changes in usage resulting from restrictions imposed in response to the COVID-19 pandemic; the allocation of resources to acquisitions and future spectrum auctions held by Innovation, Science and Economic Development Canada (ISED), including the announcement of a second consultation on the auctioning of the 3800 MHz spectrum, which the Minister of Innovation, Science and Industry stated is expected to take place in 2023, and the millimetre wave spectrum auction, which is expected to commence in 2024. Our capital expenditure levels could be impacted if we do not achieve our targeted operational and financial results or if there are changes to our regulatory environment.

- Operational performance and business combination risks including: our reliance on legacy systems and our ability to implement and support new products and services and business operations in a timely manner; our ability to manage the requirements of large enterprise deals; our ability to implement effective change management for system replacements and upgrades, process redesigns and business integrations (such as our ability in a timely manner to successfully complete and integrate acquisitions into our operations and culture, complete divestitures or establish partnerships and realize expected strategic benefits, including those following compliance with any regulatory orders); our ability to identify and manage new risks inherent in new service offerings that we may provide, including as a result of acquisitions, which could result in damage to our brand, our business in the relevant area or as a whole, and additional exposure to litigation or regulatory proceedings; our ability to effectively manage the growth of our infrastructure and integrate new team members; and our reliance on third-party cloud-based computing services to deliver our IT services.

- Security and data protection including risks that malfunctions or unlawful acts could result in unauthorized access or change to, or loss or distribution of, data that may compromise the privacy of individuals and could result in financial loss and harm to our reputation and brand.

  Security threats including intentional damage, unauthorized access or attempted access to our physical assets or our IT systems and network, or those of our customers or vendors, which could prevent us from providing reliable service or result in unauthorized access to our information or that of our customers.

  Business continuity events including: our ability to maintain customer service and operate our network in the event of human error or human-caused threats, such as cyberattacks and equipment failures that could cause various degrees of network outages; technical disruptions and infrastructure breakdowns; supply chain disruptions, delays and rising costs, including as a result of government restrictions or trade actions; natural disaster threats; extreme weather events; epidemics; pandemics (including the COVID-19 pandemic); political instability in certain international locations, including war and other geopolitical developments; information security and privacy breaches, including loss or theft of data; and the completeness and effectiveness of business continuity and disaster recovery plans and responses.

- Our team including: recruitment, retention and appropriate training in a highly competitive industry (including retention of team members leading recent acquisitions in emerging areas of our business), the level of our employee engagement and impact on engagement or other aspects of our business or any unresolved collective agreements including the future outcome of collective bargaining for an agreement with the Telecommunications Workers Union, United Steelworkers Local 1944, which expired at the end of 2021, our ability to maintain our unique culture as we grow, the risk that certain independent contractors in our business could be classified as employees, and the physical and mental health of our team , which are critical to engagement and productivity.

- Environment, health and safety including: loss of employee work time as a result of illness or injury; public concerns related to radio frequency emissions; environmental issues including climate-related risks (such as extreme weather events and other natural hazards), waste and waste recycling, risks relating to fuel systems on our properties, changing government and public expectations regarding environmental matters and our responses; and challenges associated with epidemics or pandemics, including the COVID-19 pandemic and our response to it, which may add to or accentuate these factors.

Energy use including: our ability to identify , procure and implement solutions to reduce energy consumption and adopt cleaner sources of energy; our ability to identify and make suitable investments in renewable energy, including in the form of virtual power purchase agreements; our ability to continue to realize significant absolute reductions in energy use and the resulting greenhouse gas (GHG) emissions in our operations (in part as a result of programs and initiatives focused on our buildings and network); and other risks associated with achieving our goals to achieve carbon neutrality and reduce our GHG emissions by 2030.

- Real estate matters including risks associated with our real estate investments, such as financing risks and uncertain future demand, occupancy and rental rates, especially during the COVID-19 pandemic.

- Financing, debt and dividend requirements including: our ability to carry out financing activities, refinance our maturing debt, lower our net debt to EBITDA ratio to our objective range given the cash demands of spectrum auctions, and/or our ability to maintain investment-grade credit ratings. Our business plans and growth could be negatively affected if existing financing is not sufficient to cover our funding requirements.

  Lower than planned free cash flow could constrain our ability to invest in operations, reduce leverage or return capital to shareholders, and could affect our ability to sustain our dividend growth program through 2025 and any further dividend growth programs. This program may be affected by factors such as the competitive environment, fluctuations in the Canadian economy or the global economy, our earnings and free cash flow, our levels of capital expenditures and spectrum licence purchases, acquisitions, the management of our capital structure, regulatory decisions and developments, and business continuity events. Quarterly dividend decisions are subject to assessment and determination by our Board of Directors based on our financial position and outlook. Common Shares may be purchased under our normal course issuer bid (NCIB) when and if we consider it opportunistic, based on our financial position and outlook, and the market price of our Common Shares. There can be no assurance that our dividend growth program or our NCIB will be maintained, unchanged and/or completed.

- Tax matters including: interpretation of complex domestic and foreign tax laws by the relevant tax authorities that may differ from our interpretations; the timing and character of income and deductions, such as depreciation and operating expenses; tax credits or other attributes; changes in tax laws, including tax rates; tax expenses that are materially different than anticipated, including the taxability of income and deductibility of tax attributes or retroactive application of new legislation; elimination of income tax deferrals through the use of different tax year-ends for operating partnerships and corporate partners; and changes to the interpretation of tax laws, including those resulting from changes to applicable accounting standards or the adoption of more aggressive auditing practices by tax authorities, tax reassessments or adverse court decisions impacting the tax payable by us.

- The economy including: the state of the economy in Canada, which may be influenced by economic and other developments outside of Canada, including potential outcomes of future policies and actions of foreign governments and the COVID-19 pandemic, as well as public and private sector responses to the pandemic; expectations regarding future interest rates; inflation; unemployment levels; effects of volatility in oil prices; effects of low business spending (such as reducing investments and cost structure); pension investment returns and factors affecting pension benefit obligations, funding and solvency discount rates; fluctuations in exchange rates of the currencies of various countries in which we operate; sovereign credit ratings and effects on the cost of borrowing; the impact of tariffs on trade between Canada and the United States; and global implications of the dynamics of trade relationships among major world economies.

  Ability to successfully implement cost reduction initiatives and realize planned savings, net of restructuring and other costs, without losing customer service focus or negatively affecting business operations. Examples of these initiatives are: our operating efficiency and effectiveness program to drive improvements in financial results; business integrations; business product simplification; business process automation and outsourcing; offshoring and reorganizations; procurement initiatives; and real estate rationalization.

- Litigation and legal matters including: our ability to successfully respond to investigations and regulatory proceedings; our ability to defend against existing and potential claims and lawsuits (including intellectual property infringement claims and class actions based on consumer claims, data, privacy or security breaches and secondary market liability), or to negotiate and exercise indemnity rights or other protections in respect of such claims and lawsuits; and the complexity of legal compliance in domestic and foreign jurisdictions, including compliance with competition, anti-bribery and foreign corrupt practices laws.
- Foreign operations and our ability to successfully manage operations in foreign jurisdictions, including managing risks such as currency fluctuations and exposure to various economic, international trade, political and other risks of doing business globally. See also *Section 10.3 Regulatory matters* and *TELUS International's financial performance which impacts our financial performance*.
- TELUS International's financial performance which impacts our financial performance . Factors that may affect TI's financial performance are described in TI's public filings available on SEDAR and EDGAR and may include: intense competition from companies offering similar services; attracting and retaining qualified team members to support its operations; TI's ability to grow and maintain profitability if changes in technology or client expectations outpace service offerings and internal tools and processes; TI maintaining its culture as it grows; effects of economic and geopolitical conditions on its clients' businesses and demand for its services; the significant portion of TI's revenue that is dependent on a limited number of large clients; continued consolidation in many of the verticals in which TI offers services resulting in potential client loss; adverse impacts of the COVID-19 pandemic on TI's business and financial results; the adverse impact on TI's business if certain independent contractors were classified as employees, and the costs associated with defending, settling or resolving any future lawsuits (including demands for arbitration) relating to the independent contractor classification; TI's ability to successfully identify, complete, integrate and realize the benefits of acquisitions and manage associated risks; cyberattacks or unauthorized disclosure resulting in access to sensitive or confidential information and data of its clients or their end customers, which could have a negative impact on its reputation and client confidence; TI's business not developing in ways it currently anticipates due to negative public reaction to offshore outsourcing, proposed legislation or otherwise; ability to meet client expectations regarding its content moderation services being adversely impacted due to factors beyond its control and its content moderation team members suffering adverse emotional or cognitive effects in the course of performing their work; and TI's short history operating as a separate, publicly traded company. TELUS International's primary functional and reporting currency is the U.S. dollar and the contribution to our consolidated results of positive results in our digitally-led customer experiences – TELUS International (DLCX) segment may be offset by any strengthening of the Canadian dollar (our reporting currency) compared to the U.S. dollar, the European euro, the Philippine peso and the currencies of other countries in which TI operates. The trading price of the subordinate voting shares of TI (TI Subordinate Voting Shares) may be volatile and is likely to fluctuate due to a number of factors beyond its control, including actual or anticipated changes in profitability; general economic, social or political developments; changes in industry conditions; changes in governance regulation; inflation; low trading volume; the general state of the securities markets; and other material events. TI may choose to publicize targets or provide other guidance regarding its business and it may not achieve such targets. Failure to do so could also result in a decline in the trading price of the TI Subordinate Voting Shares. A decline in the trading price of the TI Subordinate Voting Shares due to these or other factors could result in a decrease in the fair value of TI multiple voting shares held by TELUS.

These risks are described in additional detail in *Section 9 General trends, outlook and assumptions, and regulatory developments and proceedings* and *Section 10 Risks and risk management* in this MD&A. Those descriptions are incorporated by reference in this cautionary statement but are not intended to be a complete list of the risks that could affect the Company.

Many of these factors are beyond our control or outside of our current expectations or knowledge. Additional risks and uncertainties that are not currently known to us or that we currently deem to be immaterial may also have a material adverse effect on our financial position, financial performance, cash flows, business or reputation. Except as otherwise indicated in this document, the forward-looking statements made herein do not reflect the potential impact of any non-recurring or special items or any mergers, acquisitions, dispositions or other business combinations or transactions that may be announced or that may occur after the date of this document.

Readers are cautioned not to place undue reliance on forward-looking statements. Forward-looking statements in this document describe our expectations, and are based on our assumptions, as at the date of this document and are subject to change after this date. Except as required by law, we disclaim any intention or obligation to update or revise any forward-looking statements.

This cautionary statement qualifies all of the forward-looking statements in this MD&A.

Management's discussion and analysis (MD&A)
February 9, 2023

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1. Introduction

The forward-looking statements in this section, including, for example, statements relating to the expected impact of the COVID-19 pandemic on our operations and financial condition, are qualified by the *Caution regarding forward-looking statements* at the beginning of this Management's discussion and analysis (MD&A).

1.1 Preparation of the MD&A

The following sections are a discussion of our consolidated financial position and financial performance for the year ended December 31, 2022, and should be read together with our December 31, 2022 audited consolidated statements of income and other comprehensive income, statements of financial position, statements of changes in owners' equity and statements of cash flows, and the related notes (collectively referred to as the Consolidated financial statements). The generally accepted accounting principles (GAAP) that we use are International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and Canadian GAAP. In this MD&A, the term IFRS refers to these standards. In our discussion, we also use certain non-GAAP and other specified financial measures to evaluate our performance, monitor compliance with debt covenants and manage our capital structure. These measures are defined, qualified and reconciled with their nearest GAAP measures, as required by National Instrument 52-112, *Non-GAAP and Other Financial Measures Disclosure*, in *Section 11.1*. All currency amounts are in Canadian dollars, unless otherwise specified.

Additional information relating to the Company, including our Annual Information Form and other filings with securities commissions or similar regulatory authorities in Canada, is available on SEDAR (**sedar.com**). Our information filed with or furnished to the Securities and Exchange Commission in the United States, including Form 40-F, is available on EDGAR (**sec.gov**). Additional information about our TELUS International (Cda) Inc. (TELUS International or TI) subsidiary, including discussion of its business and results, can be found in its public filings available on SEDAR and EDGAR.

Our disclosure controls and procedures are designed to provide reasonable assurance that all relevant information is gathered and reported to senior management on a timely basis, so that appropriate decisions can be made regarding public disclosure. This MD&A and the Consolidated financial statements were reviewed by our Audit Committee and authorized by our Board of Directors (Board) for issuance on February 9, 2023.

In this MD&A, unless otherwise indicated, results for the year ended December 31, 2022 are compared with results for the year ended December 31, 2021.

1.2 The environment in which we operate

The success of our business and the challenges we face can best be understood with reference to the environment in which we operate, including broader economic factors that affect our customers and us, and the competitive nature of our business operations.

2022 Canadian telecom industry growth	**TELUS 2022 operating revenues and other income**	**TELUS telecom subscriber connections**	**TELUS Corporation Common Share 2022 dividends declared and growth per share**
Est. 4%	$18.4 billion	18.0 million	$1.9 billion / 6.7%

COVID-19

The COVID-19 pandemic, which emerged in the first quarter of 2020, continued to have a global impact throughout 2022. We expect the pandemic to continue to affect our operations for at least the first quarter of 2023 and possibly thereafter. This will depend on both domestic and international factors, such as rates of vaccination and booster doses, as well as the potential proliferation of COVID-19 variants of concern. We are committed to prioritizing the health and safety of team members and customers.

With respect to TELUS International, we currently expect that a majority of team members will return to traditional work environments in offices and delivery locations over time when it has been deemed safe to do so by local governments and healthcare officials. However, the extent and timing of such return is expected to vary significantly by geography and practices within each office and delivery location.

Canadian telecommunications industry

As the pandemic lingered, Canadians continued to adjust to new norms, such as changes in business models and consumer behaviour, while economic growth carried on into 2022. Throughout the year, the connectivity provided by the telecommunications industry was important in maintaining economic and social activity, providing positive outcomes for Canada. We estimate that Canadian telecommunications industry revenues (including TV revenue and excluding equipment and media revenue) grew by approximately 4% in 2022, with industry mobile network revenue growth of approximately 6.8%. Mobile revenues continued to account for the largest portion of telecommunications sector revenues, as Canadians consumed more mobile data than ever, enabled by the speed and reach of mobile networks. We estimate that the Canadian mobile phone industry added approximately 1.7 million net new subscribers in 2022, compared to an estimate of approximately 1.2 million in 2021. With respect to fixed products and services, we estimate the Canadian consumer high-speed internet penetration rate grew by approximately one percentage point to 91% in 2022, and subscriber growth is expected to remain steady. Industry internet revenue growth continued, as many Canadians relied on high-speed internet for work and entertainment at home and increased the speed of their service packages. Conversely, the shift from the traditional television landscape to alternative forms of media also continued. Competitive pressures continued in both the consumer and business markets for fixed products and services, while declines in higher-margin fixed legacy voice and data services were ongoing, mainly attributable to technological substitution. (See *Section 9 General trends, outlook and assumptions, and regulatory developments and proceedings, Section 10.4 Competitive environment* and *Section 10.16 The economy*.)

TELUS technology solutions (TTech)

Across TTech, we are leveraging our leading technology and compassion to enable remarkable human outcomes. Our long-standing commitment to putting our customers first across the full range of our solutions spanning mobile, data, IP, voice, television, entertainment, video and security, delivered over our award-winning networks, has made us a distinct leader in customer service excellence and loyalty. The accolades we have earned over the years from independent, industry-leading network insight firms highlight the speed, reliability and expansiveness of our leading networks, reinforcing our commitment to provide Canadians with access to superior technology that connects us to the people, resources and information that matter most. The healthcare industry continues to move toward digitization of everyday functions within the healthcare ecosystem. We are helping Canadians and others live healthier lives by leveraging technology that enables access to health information and delivers improved health outcomes with solutions such as employer-focused healthcare. We are also developing innovative technology solutions to help feed the world, putting data to work for customers in the agriculture, food and consumer goods sectors. This efficient and effective collaboration helps ensure the quality and safety of food and consumer goods.

Digitally-led customer experiences – TELUS International (DLCX)

Technology is transforming the way businesses interact with their customers at an accelerating pace and scale and, across industries, customer experience has become a critically important competitive differentiator. DLCX clients and their customers have more information and more choices than ever before, and their expectations surrounding brand experiences and the speed at which companies must process and respond to customer interactions are changing rapidly. The proliferation of mobile devices, social media platforms and other methods of digital interaction has enabled customers to access information 24/7 and engage with companies through multiple digital channels. The COVID-19 pandemic has further accelerated the use of digital channels as the first, and sometimes only, point of customer interaction. Customers value a consistent and personalized experience across every channel when interacting with the companies that serve them. Businesses face pressure to engage with their customers across digital and human channels, and seek to do so by combining technology with an authentic human experience that demonstrates a genuine commitment to customer satisfaction.

Economic estimates

Our estimates regarding our economic and operational environment, including economic growth, unemployment and housing starts, serve as important inputs for the assumptions on which our targets are based. The extent of the impact these estimates will have on us, and the timing of that impact, will depend upon the actual outcomes in specific sectors of the Canadian economy.

	Economic growth (percentage points)			**Unemployment** (percentage points)			**Housing starts** (thousands of units)		
	Estimated gross domestic product (GDP) growth rates		Our estimated GDP growth rates[1]	Unemployment rates For the month of		Our estimated annual unemployment rates[1]	Seasonally adjusted annual rate of housing starts[2] For the month of		Our estimated annual rate of housing starts on an unadjusted basis[1]
	2023	2022	**2023**	**December 2022[3]**	December 2021[3]	**2023**	**December 2022**	December 2021	**2023**
Canada	**1.0[4]**	3.6[4]	**0.6**	**5.0**	5.9	**6.1**	**249**	236	**212**
B.C.	**1.5[5]**	3.2[5]	**0.4**	**4.2**	5.3	**5.6**	**59**	55	**34**
Alberta	**2.7[5]**	4.8[5]	**1.5**	**5.8**	7.3	**5.9**	**27**	31	**31**
Ontario	**0.5[5]**	2.6[5]	**0.3**	**5.3**	6.0	**6.6**	**109**	70	**71**
Quebec	**0.7[5]**	3.1[5]	**0.5**	**4.0**	4.6	**5.5**	**33**	52	**50**

1 Assumptions are as of October 31, 2022 and are based on a composite of estimates from Canadian banks and other sources.
2 Source: Statistics Canada. Table 34-10-0158-01 Canada Mortgage and Housing Corporation, housing starts, all areas, Canada and provinces, seasonally adjusted at annual rates, monthly (x 1,000).
3 Source: Statistics Canada Labour Force Survey, December 2022 and December 2021, respectively.
4 Source: Bank of Canada Monetary Policy Report, January 2023.
5 Source: British Columbia Ministry of Finance, First Quarterly Report, September 2022; Alberta Ministry of Treasury Board and Finance, 2022 - 23 Mid-year Fiscal Update and Economic Statement, November 2022; Ontario Ministry of Finance, 2022 Ontario Economic Outlook and Fiscal Review - Ontario's Plan to Build: A Progress Update, November 2022; and Ministère des Finances du Québec, Update on Quebec's Economic and Financial Situation – Fall 2022, December 2022, respectively.

1.3 Highlights of 2022

Fully Managed Inc. acquisition

On January 1, 2022, we acquired 100% ownership of Fully Managed Inc. for cash and contingent consideration of $124 million. Fully Managed Inc. provides managed information technology support, technology strategy and network management. The acquisition was made with a view to growing our end-to-end capabilities to support small and medium-sized business customers.

Vivint Smart Home, Inc. acquisition

On June 8, 2022, we acquired the Canadian customers, assets and operations of Vivint Smart Home, Inc. (Vivint) for $104 million. Vivint is a security business that is complementary to our existing lines of business. The investment was made with a view to leveraging our telecommunications infrastructure and expertise to continue to enhance connected home, business, security and health services for our customers.

LifeWorks Inc. acquisition

On September 1, 2022, we announced the completion of our $2.2 billion acquisition of all of the issued and outstanding common shares of LifeWorks Inc. (LifeWorks), a world leader in providing digital and in-person solutions that support the total well-being of individuals – mental, physical, financial and social – solidifying TELUS Health as one of the largest providers of digital-first health and wellness services and solutions that empower individuals to live their healthiest lives. The acquisition immediately enabled the opportunity for health services to operate and grow internationally through long-standing corporate relationships globally, with notable areas of focus in employee health and wellness programs, mental and physical health solutions, pensions and benefits management, and retirement solutions.

This transaction establishes a compelling offering for employers that will allow them to provide the best wellness experience for their employees in order to enhance talent acquisition and retention, while improving business performance. It will also provide complementary end-to-end solutions supported by our robust infrastructure of leading networks and best-in-class customer experience. With LifeWorks integrating within TELUS Health, our newly expanded organization will also be a global digital health and wellness leader, providing access to high-quality, proactive healthcare and mental wellness for employees. We are unifying digital-first solutions across the care continuum, so that we are well-positioned to improve the lives and healthcare outcomes for people around the world. Additionally, this acquisition enables continued innovation and market share growth through our solid financial backing, along with significant cross-selling synergies between our respective organizations, including TELUS International.

Business acquisition – subsequent to 2022

On October 27, 2022, we announced a definitive agreement to acquire WillowTree, a full-service digital product provider focused on end-user experiences, such as native mobile applications and unified web interfaces. On January 3, 2023, subsequent to the satisfaction of the closing conditions, WillowTree was acquired through TELUS International and it will be consolidated in our DLCX segment. Under the agreement, WillowTree was acquired for purchase consideration of approximately US$1.1 billion (approximately $1.5 billion at foreign exchange rates at the financial position date), net of assumed debt; purchase consideration is comprised of cash, US$125 million of TELUS International Subordinate Voting Shares and provisions for written put options.

Long-term debt issues

On February 28, 2022, we announced the successful closing of our second sustainability-linked bond (SLB) offering to date (which is also our inaugural U.S. SLB) issued pursuant to the SLB framework we announced on June 14, 2021. The US$900 million of senior unsecured 3.40% U.S. Dollar Sustainability-Linked Notes will mature on May 13, 2032. This bond offering supports our commitment to environmental sustainability by linking our cost of financing to the achievement of ambitious environmental, social and governance (ESG) targets. The net proceeds from this offering were used for the repayment of outstanding indebtedness, including the repayment of commercial paper, and for other general corporate purposes.

On September 8, 2022, we announced a three-tranche note offering of: $1.1 billion of senior unsecured 5.25% Sustainability-Linked Notes, Series CAG, maturing on November 15, 2032; $550 million of senior unsecured 5.65% Notes, Series CAH, maturing on September 13, 2052; and $350 million of senior unsecured 5.00% Notes, Series CAI, maturing on September 13, 2029. The net proceeds from the three-tranche offering were used for the repayment of outstanding indebtedness, including the repayment of commercial paper and the reduction of cash amounts outstanding under an arm's-length securitization trust, and for other general corporate purposes.

The Series CAG notes were issued pursuant to the SLB framework announced on June 14, 2021, linking our cost of financing to our environmental performance, and the issuance was our third bond offering under the framework. Our second SLB in Canada, and third globally, solidifies us as one of the largest SLB issuers in Canada, affirming our position as a leader in social capitalism.

Multi-year dividend growth program

On May 6, 2022, we announced our intention to target ongoing semi-annual dividend increases, with the annual increase in the range of 7 to 10%, from 2023 through to the end of 2025. This announcement further extends our dividend program, which was originally announced in May 2011 and extended for three additional years in each of May 2013, May 2016 and May 2019. Dividend decisions will continue to be subject to our Board's assessment and the determination of our financial situation and outlook on a quarterly basis. There can be no assurance that we will maintain a dividend growth program through 2025. See *Section 4.3 Liquidity and capital resources* .

Our Board of Directors

At our 2022 annual general meeting held on May 6, 2022, the nominees listed in the TELUS 2022 information circular were elected as directors of TELUS, including a new nominee, Victor Dodig.

Victor has been the President and Chief Executive Officer of the CIBC group of companies since September 2014. He brings more than 25 years of extensive business and banking experience, including leading CIBC's Wealth Management, Asset Management and Retail Banking businesses. Over his career, Victor also led several businesses with UBS and Merrill Lynch in Canada and internationally, and was a management consultant with McKinsey & Company. He serves on the board of the C.D. Howe Institute and the Business Council of Canada. Victor is a vocal advocate for inclusion in the workplace and is chair of the Inclusion and Diversity Leadership Council at CIBC and a co-chair of the BlackNorth Initiative. He is past chair of the Catalyst Canada Advisory Board and past chair of the 30% Club Canada. In 2017, Victor was recognized as a Catalyst Canada Honours Champion for his leadership in advancing gender diversity.

Consolidated highlights

Years ended December 31 ($ millions, except footnotes and unless noted otherwise)	**2022**	2021	Change
Consolidated statements of income			
Operating revenues and other income	**18,412**	17,258	6.7 %
Operating income	**2,954**	3,074	(3.9)%
Income before income taxes	**2,322**	2,278	1.9 %
Net income	**1,718**	1,698	1.2 %
Net income attributable to Common Shares	**1,615**	1,655	(2.4)%
Adjusted Net income[1]	**1,640**	1,430	14.7 %
Earnings per share (EPS) ($)			
Basic EPS	**1.16**	1.23	(5.7)%
Adjusted basic EPS[1]	**1.17**	1.07	9.3 %
Diluted EPS	**1.15**	1.22	(5.7)%
Dividends declared per Common Share ($)	**1.3557**	1.2710	6.7 %
Basic weighted-average Common Shares outstanding (millions)	**1,396**	1,346	3.7 %
Consolidated statements of cash flows			
Cash provided by operating activities	**4,811**	4,388	9.6 %
Cash used by investing activities	**(5,408)**	(5,466)	(1.1)%
Acquisitions	**(1,547)**	(468)	n/m
Capital expenditures[2]	**(3,472)**	(3,498)	(0.7)%
Cash provided by financing activities	**848**	953	(11.0)%
Other highlights			
Telecom subscriber connections[3] (thousands)	**17,971**	16,887	6.4 %
Earnings before interest, income taxes, depreciation and amortization [1] (EBITDA)	**6,406**	6,290	1.9 %
EBITDA margin[1] (%)	**34.8**	36.4	(1.6)pts.
Restructuring and other costs	**240**	186	29.0 %
Adjusted EBITDA[1]	**6,643**	6,069	9.5 %
Adjusted EBITDA margin[1] (%)	**36.1**	36.0	0.1 pt.
Free cash flow[1]	**1,274**	777	64.0 %
Net debt to EBITDA – excluding restructuring and other costs [1] (times)	**3.63**	3.17	0.46

Notations used in MD&A: n/m – not meaningful; pts. – percentage points.

1 These are non-GAAP and other specified financial measures. See *Section 11.1 Non-GAAP and other specified financial measures.*

2 Capital expenditures include assets purchased, excluding right-of-use lease assets, but not yet paid for, and consequently differ from Cash payments for capital assets, excluding spectrum licences, as reported in the Consolidated financial statements. Refer to *Note 31* of the Consolidated financial statements for further information.

3 The sum of active mobile phone subscribers, connected device subscribers, internet subscribers, residential voice subscribers, TV subscribers and security subscribers, measured at the end of the respective periods based on information in billing and other source systems. Effective January 1, 2022, on a prospective basis, following an in-depth review of our definition of a subscriber, we adjusted our connected devices subscriber base to remove 34,000 subscribers within a legacy reporting system. During the second quarter of 2022, we adjusted our cumulative security subscriber connections to add approximately 75,000 subscribers as a result of a business acquisition.

Operating highlights

- **Consolidated Operating revenues and other income** increased by $1.2 billion in 2022.

  Service revenues increased by $1.4 billion in 2022. TTech service revenue growth was driven by growth in health services revenues, higher mobile network revenues, an increase in data service revenues and growth in agriculture and consumer goods service revenues. Increased DLCX revenues resulted from growth from both expanded services for existing clients and growth from new clients.

  Equipment revenues increased by $33 million in 2022, driven by growth in fixed equipment revenues, partly offset by lower mobile equipment revenues.

  Other income decreased by $300 million in 2022, largely reflecting the non-recurrence of the $410 million gain on the disposition of our financial solutions business in the fourth quarter of 2021. Excluding the effect of this disposition, Other income increased by $110 million in 2022, reflecting the reversal of provisions for contingent consideration related to business acquisitions, decreases in provisions arising from business acquisition-related written put options, a gain on acquisition of control of LifeWorks, and higher gains on investments.

  For additional details on Operating revenues and other income, see *Section 5.4 TELUS technology solutions segment* and *Section 5.5 Digitally-led customer experiences – TELUS International segment*.

- **Operating income** decreased by $120 million in 2022. (See *Section 5.3 Consolidated operations* for additional details.)

  EBITDA, which includes restructuring and other costs, other equity (income) losses related to real estate joint ventures and the gain on disposition of our financial solutions business, increased by $116 million in 2022.

  Adjusted EBITDA, which excludes restructuring and other costs, other equity (income) losses related to real estate joint ventures and the gain on disposition of our financial solutions business, increased by $574 million in 2022. This reflected: (i) higher mobile network revenues; (ii) increased fixed data service revenues; (iii) an increase in our DLCX segment contribution; (iv) higher other income, excluding our prior year gain on the sale of our financial solutions business; and (v) contribution from our acquisition of LifeWorks on September 1, 2022. These factors were partly offset by: (i) higher employee benefits expense; (ii) higher costs related to the scaling of our digital capabilities; (iii) continued declines in fixed legacy voice and data services revenues; (iv) lower TV margins; and (v) bad debt expense returning to pre-pandemic levels, driven by macroeconomic pressures compared to the prior period, which saw historically low bad debt expense. (See *Section 5.3 Consolidated operations* for additional details.)

- **Income before income taxes** increased by $44 million in 2022 as a result of lower Financing costs, which more than offset lower Operating income. The decrease in Financing costs largely resulted from the virtual power purchase agreements unrealized change in forward element and capitalized long-term debt interest costs for 3500 MHz spectrum licences. (See *Financing costs* in *Section 5.3*.)

- **Income tax** expense increased by $24 million in 2022. The effective income tax rate increased from 25.5% to 26.0% in 2022, largely due to adjustments recognized in the current period for income taxes of prior periods.

- **Net income attributable to Common Shares** decreased by $40 million in 2022, reflecting the after-tax impacts of lower Operating income and lower Financing costs.

  Adjusted Net income excludes the effects of restructuring and other costs, income tax-related adjustments, other equity (income) losses related to real estate joint ventures, virtual power purchase agreements unrealized change in forward element, long-term debt prepayment premium, and the gain on disposition of our financial solutions business. Adjusted Net income increased by $210 million or 14.7% in 2022.

- **Basic EPS** decreased by $0.07 or 5.7% in 2022, reflecting the after-tax impacts of lower Operating income and lower Financing costs, as well as the effect of a higher number of Common Shares outstanding.

Adjusted basic EPS excludes the effects of restructuring and other costs, income tax-related adjustments, other equity (income) losses related to real estate joint ventures, virtual power purchase agreements unrealized change in forward element, long-term debt prepayment premium, and the gain on disposition of our financial solutions business. Adjusted basic EPS increased by $0.10 or 9.3% in 2022.

- **Dividends declared per Common Share** were $1.3557 in 2022, an increase of 6.7% from 2021. On February 8, 2023, the Board declared a first quarter dividend of $0.3511 per share on our issued and outstanding Common Shares, payable on April 3, 2023, to shareholders of record at the close of business on March 10, 2023. The first quarter dividend increased by $0.0237 per share or 7.2% from the $0.3274 per share dividend declared one year earlier, consistent with our multi-year dividend growth program described in *Section 4.3 Liquidity and capital resources* .

- **During 2022, our total telecom subscriber connections** increased by 1,084,000 or 6.4%. This reflected an increase of 4.3% in mobile phone subscribers, 15.7% in connected device subscribers, 6.3% in internet subscribers, 4.7% in TV subscribers and 21.6% in security subscribers, partly offset by a decline of 2.4% in residential voice subscribers. (See *Section 5.4 TELUS technology solutions segment* for additional details.)

Liquidity and capital resource highlights

- **Cash provided by operating activities** increased by $423 million in 2022, primarily driven by growth in EBITDA, lower income taxes paid and other working capital changes, partly offset by an increase in interest paid. (See *Section 7.2 Cash provided by operating activities*.)

- **Cash used by investing activities** decreased by $58 million in 2022, largely attributable to the effect of the fourth quarter 2021 payments for the 3500 MHz spectrum licences acquired in the 2021 spectrum auction, partly offset by: (i) an increase in cash payments for business acquisitions; (ii) an increase in cash payments for capital assets, excluding spectrum licences; and (iii) the effect of the proceeds on the 2021 disposition of our financial solutions business. Acquisitions increased by $1,079 million in 2022, primarily reflecting the acquisition of LifeWorks. Capital expenditures decreased by $26 million in 2022, primarily due to a planned slowdown of fibre build consistent with our annual build target. (See *Section 7.3 Cash used by investing activities*.)

- **Cash provided by financing activities** decreased by $105 million in 2022, primarily reflecting the effects of the first quarter 2021 equity issuance and the first quarter 2021 proceeds from the TI initial public offering, partly offset by an increase in our issuances of long-term debt, net of redemptions and repayment. (See *Section 7.4 Cash provided by financing activities.*)

- **Net debt to EBITDA – excluding restructuring and other costs** ratio was 3.63 times at December 31, 2022, up from 3.17 times at December 31, 2021, as the effect of the increase in net debt exceeded the effect of the increase in EBITDA – excluding restructuring and other costs, notwithstanding the COVID-19 pandemic impacts that have reduced EBITDA. As at December 31, 2022, the acquisition of spectrum licences increased the ratio by approximately 0.47 and business acquisitions over the past 12 months increased the ratio by approximately 0.20, while business dispositions over the same period decreased the ratio by approximately 0.28. (See *Section 4.3 Liquidity and capital resources* and *Section 7.5 Liquidity and capital resource measures*.)

- **Free cash flow** increased by $497 million in 2022, primarily reflecting higher EBITDA and lower income taxes paid, partly offset by an increase in cash interest paid and the timing related to device subsidy repayments and associated revenue recognition and our TELUS Easy Payment® device financing program. Our definition of free cash flow, for which there is no industry alignment, is unaffected by accounting changes that do not impact cash, such as IFRS 15 and IFRS 16.

1.4 Performance targets (key performance measures)

In 2022, we achieved all four of our consolidated financial targets. Our original targets were announced on February 10, 2022. On November 4, 2022, we updated our financial targets for the acquisition of LifeWorks, which closed on September 1, 2022, and for lower mobile equipment revenue, as well as to account for TELUS International's updated outlook.

We met our consolidated operating revenues target. Growth in our mobile phones and connected devices subscriber bases and improved ARPU were contributing factors. We also experienced growth in fixed data service revenues resulting from increased internet and data services, in addition to internet, security and TV subscriber growth, and business acquisitions. DLCX operating revenues increased, due to expanded services for existing clients and growth from new clients. Although mobile equipment revenue decreased, fixed equipment revenue improved, attributable to higher sales volumes. Health services revenues also increased, driven by business acquisitions, including LifeWorks, as well as organic growth.

We achieved our Adjusted EBITDA target as a result of higher mobile network revenue, reflecting growth in our mobile phones and connected devices subscriber bases and improved ARPU. Higher fixed data services revenues also contributed to the achievement of this target, driven by growth in our internet, security and TV subscriber bases and business acquisitions. Additionally, increased DLCX contribution as well as the contribution from our LifeWorks acquisition supported target achievement.

Our free cash flow target was met, attributable to EBITDA growth and strong cash flow management, including our disciplined focus on profitable loading and effective inventory management to drive strong growth in customer net additions.

Our capital expenditures in 2022 met our consolidated target, as we continued our investments in our broadband build to connect more homes and businesses directly to our fibre-optic infrastructure, enabling us to further expand our broadband footprint including in many rural and Indigenous communities. In addition, we accelerated investments in our 5G network build, allowing us to expand coverage to approximately 83% of the Canadian population at December 31, 2022. Other capital investments enabled us to support continuing subscriber growth, deliver on our digitization strategy, diversify our product offerings, and enhance our systems reliability and operational efficiency.

Our capital structure financial policies and report on financing and capital structure management plans are included in *Section 4.3*.

The following scorecard compares TELUS' performance to our consolidated 2022 targets.

Scorecard

	2022 performance		
	Consolidated targets[1] and growth	**Actual results and growth**	Result
Operating revenues	Approximately 8%[1a]	**$18.3 billion 8.6%**	ü
Net income[2]	n/a	**$1.7 billion 1.2%**	n/a
Adjusted EBITDA	Growth of 9 to 10%[1b]	**$6.6 billion 9.5%**	ü
Cash provided by operating activities[2]	n/a	**$4.8 billion 9.6%**	n/a
Free cash flow	Approximately $1.3 billion[1c]	**$1.3 billion**	ü
Capital expenditures (excluding spectrum licences)	Approximately $3.475 billion[1d]	**$3.472 billion**	ü

ü – met target

n/a – not applicable

1 Represents the 2022 revised targets that were announced on November 4, 2022 to reflect the inclusion of our acquisition of LifeWorks, lower mobile equipment revenue and TELUS International's updated outlook.

a. The original target for Operating revenues was growth of 8 to 10%.
b. The original target for Adjusted EBITDA was growth of 8 to 10%.
c. The original target for free cash flow was $1.0 billion to $1.2 billion.
d. The original target for capital expenditures was approximately $3.4 billion.

2. As a result of applying National Instrument 52-112, these measures are presented as the most directly comparable and similar financial measures to Adjusted EBITDA and free cash flow, respectively, and were not part of our targets for 2022.

We made the following key assumptions when we announced the 2022 targets in February 2022.

Assumptions for 2022 targets and results

- Our economic assumptions are based on a composite of estimates from Canadian banks and other sources. Our original assumptions for 2022 economic growth in Canada, B.C., Alberta, Ontario and Quebec were 4.3%, 4.2%, 4.4%, 4.5% and 3.7%, respectively.

  In our first quarter 2022 MD&A, we revised our 2022 assumptions for economic growth in Canada, B.C., Alberta, Ontario and Quebec to 3.9%, 4.1%, 5.1%, 3.8% and 3.1%, respectively. In our third quarter 2022 MD&A, we further revised our 2022 assumptions for economic growth assumptions in Canada, B.C., Alberta, Ontario and Quebec to 3.2%, 2.9%, 4.7%, 3.1% and 3.4%, respectively.
- With respect to annual unemployment rates, our original assumptions for 2022 in Canada, B.C., Alberta, Ontario and Quebec were 6.1%, 5.2%, 7.1%, 6.1% and 5.3%, respectively.

  In our first quarter 2022 MD&A, we revised our 2022 assumptions for the annual unemployment rate in Canada, B.C., Alberta, Ontario and Quebec to 5.4%, 4.8%, 6.4%, 5.8% and 4.4%, respectively. In our third quarter 2022 MD&A, we further revised our 2022 assumptions for the annual unemployment rate in Canada, B.C., Alberta, Ontario and Quebec to 5.4%, 4.9%, 5.8%, 5.7% and 4.5%, respectively.
- With respect to the pace of housing starts, our original assumptions for 2022 on an unadjusted basis in Canada, B.C., Alberta, Ontario and Quebec were 224,000 units, 39,000 units, 30,000 units, 83,000 units and 55,000 units, respectively.

  In our first quarter 2022 MD&A, we revised our 2022 assumptions for the pace of housing starts on an unadjusted basis in Canada, B.C., Alberta, Ontario and Quebec to 240,000 units, 40,000 units, 32,000 units, 87,000 units and 59,000 units, respectively. In our third quarter 2022 MD&A, we further revised our 2022 assumptions for the pace of housing starts on an unadjusted basis in Canada, B.C., Alberta, Ontario and Quebec to 258,000 units, 39,000 units, 37,000 units, 87,000 units and 61,000 units, respectively.
- Our original assumption for 2022 restructuring and other costs was approximately $150 million. In our third quarter 2022 MD&A, we revised our 2022 assumption for restructuring and other costs to approximately $200 million to reflect the inclusion of our LifeWorks acquisition and other integration costs associated with business acquisitions. Actual 2022 restructuring and other costs were $240 million, as we incurred higher than expected costs for continuing operational effectiveness initiatives, with margin enhancement initiatives to mitigate pressures related to intense competition, technological substitution, repricing of our services, increasing subscriber growth and retention costs, and integration costs associated with business acquisitions.

Confirmed:

- No material adverse regulatory rulings or government actions against TELUS. See *Section 9.4* for further information.
- Continued intense mobile products and services competition and fixed products and services competition in both consumer and business markets.
- Continued increase in mobile phone penetration in the Canadian market.
- Ongoing subscriber adoption of, and upgrades to, data-intensive smartphones, as customers seek more mobile connectivity to the internet at faster speeds.
- Mobile products and services revenue growth resulting from improvements in subscriber loading, with continued competitive pressure on blended average revenue per subscriber per month (ARPU). Roaming revenues from business and consumer travel returned to pre-pandemic levels.
- Continued pressure on mobile products and services acquisition and retention expenses, dependent on gross loading and customer renewal volumes, competitive intensity and customer preferences, as well as continued connected devices growth.

- Continued growth in fixed products and services data revenue, reflecting an increase in internet, TV and security subscribers, speed upgrades, rate plans with larger data buckets or endless data usage, and expansion of our broadband infrastructure, healthcare solutions, agriculture and consumer goods solutions and home and business security offerings.
- Continued erosion of residential voice revenues, resulting from technological substitution and greater use of inclusive long distance.
- Continued growth of DLCX revenue and EBITDA, generated by expanded services for existing and new clients and strategic business acquisitions.
- Continued focus on our customers first initiatives and maintaining our customers' likelihood-to-recommend.
- Our original assumption for 2022 net Cash interest paid was approximately $700 million to $750 million. In our third quarter 2022 MD&A, we revised our 2022 assumption for net Cash interest paid to approximately $790 million to $810 million to reflect the inclusion of our LifeWorks acquisition. Actual 2022 net Cash interest paid was $799 million.
- As revised in our third quarter 2022 MD&A, our assumptions for employee defined benefit pension plans for 2022: current service costs of approximately $98 million recorded in Employee benefits expense and interest expense of approximately $8 million recorded in Financing costs; a rate of 4.95% for discounting the obligation and a rate of 3.10% for current service costs for employee defined benefit pension plan accounting purposes; and defined benefit pension plan funding of approximately $41 million.

  Actual results were: $96 million recorded in Employee benefits expense for current service costs, $3 million recorded in Employee benefits expense for past service costs and interest expense of $8 million recorded in Financing costs; a rate of 5.05% for discounting the obligation and a rate of 5.05% for current service costs for employee defined benefit pension plan accounting purposes; and defined benefit pension plan funding of $44 million.
- Our assumption for 2022 Depreciation and Amortization of intangible assets was approximately $3.45 billion to $3.55 billion. Actual 2022 Depreciation and Amortization of intangible assets was $3.45 billion.
- Our assumption for 2022 income taxes was computed at an applicable statutory rate of 25.2 to 25.8%, and cash income tax payments of approximately $500 million to $580 million. Our actual results reflected a statutory income tax rate of 25.6% and cash income tax payments in respect of net income of $519 million.
- Our original assumption was for stabilization in the U.S. dollar to Canadian dollar average exchange rate, which was US$1.00: C$1.25 in 2021. In our third quarter 2022 MD&A, we assumed ongoing fluctuations in the Canadian dollar to U.S. dollar average exchange rate. The U.S. dollar to Canadian dollar average exchange rate was US$1.00: C$1.30 in 2022 and closed at US$1.00: C$1.35 on December 31, 2022, compared to US$1.00: C$1.27 on December 31, 2021.
- Small and medium-sized businesses (SMB) continued to be negatively affected by pandemic impacts primarily during the first quarter and throughout the year.
- Bad debt expense returned to pre-pandemic levels, driven by macroeconomic pressures in combination with the easing of government funding programs that supported consumers' ability to pay.
- We were able to operate our retail stores at pre-pandemic levels, allowing us to serve our customers in person, in addition to the digital capabilities that have enabled us to continue serving our customers during the pandemic.
- We experienced continued growth of health services revenue and contribution to EBITDA generated by strategic business acquisitions, including LifeWorks, expanding the breadth of our health offerings. Since the initial onset of the pandemic, we have experienced a slow recovery in our organic TELUS Health business.

- Our international operations were impacted by the recoveries in other global economies based on the availability and distribution of vaccines and their effectiveness on their respective populations, and regional lockdown measures, as well as foreign exchange fluctuations. We also experienced continuing macroeconomic uncertainty.
- Our agriculture and consumer goods services business continued to expand through organic growth.
- We continued our digitization efforts to simply how our customers do business with us, introduced new products and services, responded to customer and market needs, and provided highly reliable service.

2. Core business and strategy

2.1 Core business

We provide a wide range of telecommunications technology solutions, including mobile and fixed voice and data telecommunications services and products, healthcare software and technology solutions (including employee and family assistance programs and benefits administration), agriculture and consumer goods services (software, data management and data analytics-driven smart-food chain and consumer goods technologies) and digitally-led customer experiences, as well as related equipment. Data services include: internet protocol; television; hosting, managed information technology and cloud-based services; and home and business security. Our TELUS International subsidiary provides digital customer experience and digital-enablement transformation solutions, and designs, builds and delivers next-generation digital solutions, including artificial intelligence and content management, to enhance the customer experience across targeted industry verticals. We currently earn the majority of our revenue from access to, and usage of, our telecommunications infrastructure, and from providing services and products that facilitate access to, and usage of, our infrastructure, in addition to equipment revenue.

2.2 Strategic imperatives

Since 2000, we have maintained a proven national growth strategy. Our strategic intent is to unleash the power of the internet to deliver the best solutions to Canadians at home, in the workplace and on the move.

We also developed six strategic imperatives in 2000 that remain relevant for future growth, despite changing regulatory, technological and competitive environments. Our consistent focus on these imperatives guides our actions and contributes to the achievement of our financial goals. To advance these long-term strategic imperatives and address near-term opportunities and challenges, we confirm or set new corporate priorities each year, as further described in *Section 3*. Our six strategic imperatives are listed below.

- Building national capabilities across data, IP, voice and wireless
- Providing integrated solutions that differentiate TELUS from our competitors
- Partnering, acquiring and divesting to accelerate the implementation of our strategy and focus our resources on core business
- Focusing relentlessly on the growth markets of data, IP and wireless
- Going to market as one team under a common brand, executing a single strategy
- Investing in internal capabilities to build a high-performance culture and efficient operation.

3. Corporate priorities

We confirm or set new corporate priorities each year to advance our long-term strategic imperatives (see *Section 2.2*) and address near-term opportunities and challenges. The following table provides a discussion of activities and initiatives that relate to our 2022 corporate priorities.

Elevating our customers, communities and social purpose by honouring our brand promise, Let's make the future friendly™

- In November 2022, the Commission for Complaints for Telecom-television Services issued its annual report for the 12-month period from August 1, 2021 to July 31, 2022, and TELUS again received the fewest customer complaints among national carriers, while Koodo® again received the fewest complaints among national flanker brands. Additionally, TELUS had the highest resolution rate of complaints of any national carrier at 89.7%.

- Each year, we conduct a Pulsecheck engagement survey to gather confidential team member feedback about TELUS as a place to work in order to measure our progress in creating a high-performance culture. Following each survey, leaders share results with team members and use fair process to build and refine action plans focused on high-priority areas where improvement is required based on Pulsecheck results. In 2022, we achieved an engagement score of 83%, which is an encouraging accomplishment against the backdrop of the highly competitive and dynamic environment in which we work and reinforces the strength of the culture our team members have built together. TELUS is the most engaged organization globally compared to organizations of our size and composition according to our survey provider, Kincentric.

- Throughout 2022, as part of our unwavering commitment to put our customers and communities first, we enabled $6.6 million in community giving for humanitarian and emergency relief around the world through cash and in-kind contributions from TELUS, our team members and customers, as well as TELUS Friendly Future Foundation®. Our global aid in 2022 included helping those impacted by Hurricane Fiona in Atlantic Canada, Hurricane Ian in Florida, the flooding in Pakistan, the humanitarian crisis in Ukraine and the unrest in Iran.

- Throughout 2022, we continued to leverage our Connecting for Good ® programs to provide support for marginalized individuals. In line with our commitment to enable human connections and to bridge digital divides, we have provided support for 342,000 individuals since the launch of our programs.

    - During the year, we welcomed 15,500 new households to our Internet for Good ® program. Since we launched the program in 2016, more than 46,500 households and close to 150,000 low-income family members and seniors, in-need persons with disabilities and youth leaving foster care have all benefited from subsidized internet.

        - In January and February 2022, we expanded Internet for Good to thousands of low-income seniors in B.C. and Alberta, as well as Eastern Quebec, providing them with the resources and connectivity they need to succeed.

    - Our Mobility for Good® program offers free or subsidized smartphones and mobile phone rate plans to all youth aging out of foster care and to qualifying low-income seniors across Canada. In 2022, we added over 10,800 youth, seniors and other marginalized Canadians to the program. Since we launched Mobility for Good in 2017, the program has provided support for 43,000 individuals.

        - To address the humanitarian crisis in Ukraine, with the backing of partner organizations supporting newcomers from Ukraine, the Mobility for Good program provided over 3,300 free SIM cards with $100 prepaid vouchers to recently arrived Ukrainians facing financial challenges in Canada.

        - In the fourth quarter of 2022, we expanded the Mobility for Good for Indigenous Women at Risk of, or Surviving Violence program to the province of Ontario in partnership with two Indigenous-led organizations, Native Women's Resource Centre of Toronto and Native Child and Family Services of Toronto. Since we launched the program in 2021, we have been able to provide support to nearly 1,000 women.

    - Our Health for Good® mobile health clinics, now serving 23 communities across Canada, supported more than 47,000 patient visits during the year. Since the program's inception, we have facilitated more than 143,000 patient visits, bringing primary and mental healthcare to individuals experiencing homelessness.

        - In the second quarter of 2022, we launched a new Health for Good mobile care clinic in Calgary, in partnership with The Alex.

  - During the year, our Tech for Good® program provided access to personalized one-on-one training, support and customized recommendations on mobile devices and related assistive technology and/or access to discounted mobile plans for nearly 1,800 Canadians living with disabilities. Since the program's inception, we have provided professional assistance for 6,500 Canadians living with disabilities to help them independently use or control their mobile device and/or the TELUS Wireless Accessibility Discount.

- In 2022, TELUS Friendly Future Foundation and Canadian TELUS Community Boards directed their financial support to charitable initiatives that help youth and marginalized populations. During its 2022 fiscal year, the Foundation had a direct impact on the lives of more than one million youth by granting $10.6 million to 548 projects delivered by registered charities. Since its inception in 2018, the Foundation has provided nearly $36 million in cash donations to our communities, helping 13.7 million youth reach their full potential.

- Our TELUS Community Boards entrust local leaders to make recommendations on the allocation of grants in their communities. These grants support registered charities that offer health, education or technology programs that help youth thrive.

  - In the first quarter of 2022, we expanded our Community Boards in Western Canada. The TELUS Vancouver Community Board expanded to include Vancouver Coastal communities and was renamed the TELUS Vancouver and Coastal Community Board. The TELUS Thompson Okanagan Community Board expanded to include Dawson Creek, Fort St. John, Prince George, Quesnel, Cranbrook and surrounding communities and was renamed the TELUS Interior and Northern B.C. Community Board. The TELUS Manitoba Community Board expanded to include Saskatchewan and was renamed the TELUS Manitoba and Saskatchewan Community Board.

  - In December 2022, we launched the TELUS North Carolina Community Board, which builds on the efforts of team members from TELUS Agriculture & Consumer Goods, who have been giving back across the state for over 20 years. The board will direct grants totalling more than US$1 million over the next four years to youth programs with a focus on health, education, the environment and technology.

  - Since 2005, our 19 TELUS Community Boards worldwide have contributed $100 million in cash donations to more than 8,000 initiatives, providing resources and support for underserved citizens, especially young people, around the world.

- We continued to help individuals stay safe in our digital world in 2022 through our TELUS Wise® program. More than 112,000 individuals in Canada and around the world participated in virtual TELUS Wise workshops and events during the year to improve digital literacy and online safety, bringing the total number of participants to more than 563,000 since the program launched in 2013.

  - In March 2022, we were recognized by Brand Finance as having the most valuable telecom brand in Canada, with our brand value growing by 23% to $10.1 billion, according to the Brand Finance Canada 100 report for 2022.

  - In May 2022, we were named the Most Trusted Telecom brand in Canada for the fourth consecutive year by Canadian consumers in the Gustavson Brand Trust Index presented by the Peter B. Gustavson School of Business at the University of Victoria.

  - Also in May, we received the BEST Award for excellence in employee learning and development from the Association for Talent Development for the 17th consecutive year, making us the only organization to receive this award 17 times.

  - In May, driven by the passion and generosity of our TELUS team, we hosted our 17th annual TELUS Days of Giving® across 20 countries. Overall, more than 65,000 team members, retirees, family and friends volunteered around the world, helping to drive 1.44 million hours of global volunteerism this year.

- For the second consecutive year, TELUS was named Canada's Most Respected Mobile Service Provider in Canada's Most Respected Corporation Awards Program, ranking first out of 13 other mobile service providers. Koodo ranked second overall for this year's award. The award recognized our reputation across customer service excellence, community giving, team culture, diversity, equity and inclusion efforts, as well as overall brand trust by the Canadian public.
- Since launching in 2020, TELUS Pollinator Fund for Good™ has invested nearly $40 million in debt and equity securities of 26 socially responsible and innovative startups, of which 42% are led by women and 58% are led by Indigenous and racialized founders. In 2022 alone, the Fund closed investments in 13 new socially innovative for-profit startups that are transforming healthcare, caring for our planet, supporting responsible agriculture and enabling inclusive communities.
    - In May 2022, the Fund was named as a finalist in Fast Company's 2022 World Changing Ideas Awards.
- In July 2022, we celebrated the opening of TELUS Sky, our new state-of-the-art headquarters in downtown Calgary. TELUS Sky stands 60 storeys tall and contains 750,000 square feet of office and retail space, including 326 rental homes, and is built to Leadership in Energy and Environmental Design (LEED) platinum standards. With the completion of TELUS Sky, we occupied the largest LEED footprint in North America, including TELUS Garden Vancouver, TELUS Harbour Toronto, TELUS House Ottawa and Place TELUS Quebec.
- In November 2022, we were recognized with two gold awards at Excellence Canada's 2022 Canada Awards for Excellence, winning in the Healthy Workplace and Mental Health at Work categories. We are the only telecommunications company to be recognized in both categories in the same year, for our leadership and organizational commitment to mental health and well-being in the workplace.
- The TELUS Indigenous Communities Fund was launched in November 2021 and offers grants for Indigenous-led social, health and community programs. Since its inception, the Fund has committed $300,000 in cash donations to 15 Indigenous-led community programs supporting food security, cultural revitalization, health, mental health and well-being.
- In November 2022, we released our fourth annual Indigenous Reconciliation and Connectivity Report, holding ourselves accountable to the actions laid out in our 2021 Indigenous Reconciliation Action Plan (IRAP) and detailing how we embed Reconciliation within our business, while sharing inspiring stories of connectivity and modern technology enabling transformative outcomes for Indigenous Peoples.
- In addition to our network expansion into Indigenous communities, we continued to make meaningful progress towards our IRAP including by: establishing an Indigenous Advisory Council with four inaugural members; forming a three-year partnership with the Moose Hide Campaign; realizing a 300% increase over 2021 in Indigenous-supporting volunteerism; and digitizing the Witness Blanket to amplify the truths of Residential School Survivors with a $1 million commitment from TELUS and TELUS Friendly Future Foundation.
- During the year, we received recognition for our global leadership in sustainability, corporate citizenship, social purpose, and environmental and social reporting, including:
    - In January 2022, we were included in the Corporate Knights 2022 Global 100 Most Sustainable Corporations in the World for the 10th time since inception of the recognition in 2005. Additionally, in June 2022, we were named to the Corporate Knights Best 50 Corporate Citizens in Canada for the 16th time and we improved our position on the list, ranking in the top 10.
    - In September 2022, we won the Loyalty360 Best in Class Award for our corporate social responsibility and social impact program excellence.
    - At the World Sustainability Awards 2022 held in Munich during the fourth quarter of 2022, we received the Sustainability Excellence Award for our global leadership and commitment to building a better, more sustainable future.

  - We were recognized at the Global Good Awards 2022 in London, U.K., with a bronze award for Global Good Company of the Year.
  - In December 2022, we were named to the Dow Jones Sustainability North America Index for the 22nd consecutive year.
- We were recognized by Mediacorp Canada Inc. throughout 2022 by being named one of: Canada's Top Employers for Young People (2022) in February, Canada's Best Diversity Employers (2022) in March, Canada's Greenest Employers (2022) in April, and Canada's Top 100 Employers (2023) in November.
- Throughout 2022, we led our national peers in consumer likelihood-to-recommend (L2R) for both the premium and flanker mobile tiers. Our L2R was also ahead of our largest Western Canadian cable TV competitor.
- Our renewable energy virtual power purchase agreements, including three solar facilities and one wind facility in Alberta, produced 77 GWh in the fourth quarter of 2022 and 246 GWh in 2022.

Leveraging TELUS' world-leading technology to drive superior growth across mobile, home and business services

- We continued to invest in our leading-edge broadband technology, which has enabled the success of our internet, TV and security offerings and business services, as well as our mobility solutions, and helped us deploy our 5G technology in 2020.
  - At December 31, 2022, our 4G LTE technology covered 99% of Canada's population and our LTE advanced technology covered over 96% of Canada's population.
  - Our 5G network connected over 30.8 million Canadians, representing approximately 83% of Canada's population at December 31, 2022.
  - As at December 31, 2022, we had connected approximately 3.0 million households and businesses in B.C., Alberta and Eastern Quebec with fibre-optic cable, which provided these premises with immediate access to our fibre-optic infrastructure. This is up from over 2.7 million households and businesses at December 31, 2021.
- We were recognized with various accolades from independent global analytics company Opensignal throughout 2022. These results make us Canada's most awarded network by Opensignal for the 11th consecutive time.
  - In the *Mobile Network Experience Canada* report released in February 2022, we were recognized as being first for Video Experience, Games Experience, Voice App Experience and Upload Speed Experience, and we tied for first in Download Speed Experience and 4G Coverage Experience.
  - In the *5G Experience Report Canada* report also released in February 2022, we tied for first in 5G Video Experience, 5G Voice App Experience and 5G Download Speed.
  - In the *Mobile Network Experience: Canada Report (August 2022)* , we earned the top spot in four categories (Excellent Consistent Quality, Core Consistent Quality, Games Experience and Voice App Experience), and tied for first in two categories (Video Experience and 4G Coverage Experience).
  - In the *Canada 5G Experience Report (August 2022)*, we earned top recognition in the 5G Video Experience category, and tied for first in two categories (5G Voice App Experience and 5G Download Speed).
  - In the *5G Global Mobile Network Experience Awards 2022* released in September 2022, TELUS was noted as a 5G Global High Performer for 5G Reach.
- We were recognized by U.S.-based Ookla for our network performance in 2022.

  - We won the award for North America's Fastest Mobile Network in January 2022, according to results from tests taken with Speedtest by Ookla for Q3-Q4 2021.
  - According to Ookla's Speedtest Intelligence, we delivered the fastest median download speeds among top providers in Canada during the first, second and third quarters of 2022, while tying for fastest median download speed in the fourth quarter of 2022.
  - We were named Canada's Fastest Mobile Network for Q3-Q4 2021 (*January 2022*) and Q1-Q2 2022 (*July 2022*), marking 10 consecutive times that our mobile network has earned this recognition from Ookla.
- In Canada-based Tutela's report entitled *Canada: State of Mobile Experience March 2022*, we were awarded the four national awards for Excellent Consistent Quality, Core Consistent Quality, 5G Excellent Consistent Quality and 5G Core Consistent Quality, based on data from September 1, 2021 to February 28, 2022.
- In U.S.-based PCMag's report *The Fastest ISPs of 2022: Canada*, released in June 2022, we were ranked as the fastest nationwide internet service provider (ISP) in Canada among major ISPs for the third consecutive year. Among all major providers across Canada, the testers at PCMag experienced peak download speeds on the TELUS PureFibre® network of up to 2,500 Mbps, and upload speeds more than 30% faster than any other widely available plans in Canada.
- In January 2022, we announced our multi-year contract with Sandvine, which will enable us to use Sandvine's application and network intelligence solutions on Google Cloud to further assist us in monitoring and managing expected growth in mobile data and video traffic across our network.
- In January 2022, we announced a five-year partnership with the University of Ottawa (uOttawa) to transform the campus into a 5G-connected innovation hub. In addition to this collaboration fuelling multidisciplinary research to advance global health and life-saving diagnostics and treatments and cybersecurity, it will also transform uOttawa campuses and enrich the student experience through new curriculums and teaching methods as students participate in cutting-edge research leveraging the power of 5G.
- In February 2022, we announced that we are partnering with Google Cloud and NXN Digital to make Canadian cities safer, greener and smarter. This strategic alignment combines our leading networks with Google Cloud's infrastructure and data analytics, and NXN Digital's smart-city-as-a-service platform, to enable cities and districts of any size to improve the lives of their citizens through initiatives such as controlling traffic signals to reduce congestion and emissions, and utilizing data analytics that create smarter, more efficient city planning.
- In March 2022, together with Samsung Networks, we announced the successful deployment of Canada's first next-generation Mission Critical Push-to-X (MCPTX) services. Deployed over our leading networks, this new MCPTX solution will equip Canada's first responders with the information and data they need to more accurately assess emergency situations, improve responsiveness and operational efficiency, and drive better public safety outcomes.
- In March 2022, we announced that we will be utilizing our Smart Hub technology and leading 5G network to bring fixed wireless internet speeds of up to 100 Mbps to rural communities across B.C. and Alberta. By the end of the year, we provided this technology to 60 rural communities. Smart Hub uses a fixed wireless connection that is powered by our 5G network to deliver faster home internet speeds, making this an innovative alternative for customers living in remote communities or areas that are more challenging to serve with a traditional broadband connection.
- In March 2022, together with the Vector Institute, we announced the launch of the energy optimization system, which uses artificial intelligence (AI) to reduce climate impacts from data centres. This development uses model-based reinforcement learning to fine-tune newly-installed heating, ventilation and air conditioning (HVAC) systems across network locations, allowing for energy-efficient temperature control where our pilot tests have shown a reduction of approximately 12 to 15% in annual electricity consumption. This new algorithm will be open sourced as a contribution to the energy conservation community to leverage AI to create better outcomes for Canadians and our environment.

- In April 2022, we were recognized as one of the *Best B2B Brands* in Canada in 2022 by Report on Business, ranking sixth out of 79 companies in Canada, up from eighth in 2021. This is a testament to our team's commitment to leverage our social purpose to create remarkable human outcomes while delivering exceptional experiences in the business-to-business (B2B) space.

- In May 2022, we announced a strategic collaboration with Taoglas Waste Technologies to combine our Smart City solutions with the Taoglas Waste Insights software to allow for cities to enhance the operation of waste management systems. These smart waste solutions present practical commercial benefits and, more importantly, make a lasting positive impact on the environment.

- In June 2022, our #StandWithOwners program returned for the third consecutive year, recommitting $1 million to help businesses across Canada with funding, localized advertising and technology prizes.

- In June 2022, we deployed new 3500 MHz spectrum on our next-generation 5G mobile network to further support our country's economic growth and competitiveness, bringing enhanced capacity, low latency and even faster speed to our customers in Toronto, Montreal, Ottawa, Edmonton and Victoria.

- In October 2022, we announced our collaboration with the Peel Regional Police Service to advance 5G innovation and deploy technologies that will keep our communities safe. This association will provide greater connection while in the field, advance the next generation of 9-1-1 services and connect mental health services within the community as well as equip first responders with improved multimedia tools and real-time data, enabling them to better assess emergency situations and provide urgent support.

Scaling our innovative digital capabilities in TELUS Health and TELUS Agriculture & Consumer Goods to build assets of consequence

TELUS Health

- As described in *Section 1.3*, we announced the completion of the acquisition of LifeWorks Inc. on September 1, 2022, expanding the global footprint of TELUS Health, now supporting corporate clients in more than 160 countries, covering 68 million lives and growing worldwide. This acquisition will significantly accelerate our vision of employer-focused healthcare, increasing access to high-quality, proactive healthcare and mental wellness for employees by unifying digital-first solutions across the care continuum.

- During the ongoing COVID-19 pandemic, TELUS Health MyCare™ and TELUS Health Virtual Care benefited from significant adoption. These solutions helped Canadians stay safe at home and avoid higher-risk environments such as clinics and emergency rooms wherever possible and, in turn, freed up healthcare system capacity to respond to the pandemic. Our two virtual care offerings provide millions of Canadians with the opportunity to seek primary care and mental healthcare, virtually, across the country and also reach Canadians who do not have access to a family doctor or who seek medical care after hours. During the third quarter of 2022, we also launched TELUS Health MyCare Wellness, a subscription service that offers unlimited access to live, expert-led wellness workshops, as well as on-demand wellness content and exclusive members-only perks.

- Our LivingWell Companion® personal emergency response service (PERS) continues to support the health and well-being of seniors across Canada. With COVID-19 disproportionately impacting the elderly, LivingWell Companion helps seniors stay connected to emergency support and offers a remote caregiving solution to those who may be unable to physically support their elderly loved ones. It also includes TELUS Health Companion on Apple Watch (available in English and French across Canada), which is a 24/7 emergency monitoring service provided through TELUS Health's LivingWell Companion national response service combined with Apple Watch's Fall Detection capabilities.

- Throughout the pandemic, the TELUS Healthy Living Network ® has been providing Optik TV ® customers with informative and compelling content related to COVID-19 prevention and well-being, and helping them to stay active and healthy at home with over 1,600 leading fitness, yoga, nutrition and mental health titles available for free, for rent or to own. It also includes leading mental health content from Calm, providing support to Canadians as they deal with the stresses brought on by the pandemic. We offer free content to all Optik TV and Pik TV® subscribers, as well as additional premium content via our Calm Optik TV theme pack, which includes guided meditations, breathing exercises and Calm's Sleep Stories (bedtime stories for adults). We are Calm's only Canadian telecom partner, and the first to bring Calm's content to a TV service and offer subscriptions through redemptions of TELUS Rewards® loyalty points.

- In January 2022, we officially launched TELUS Health Virtual Pharmacy, a patient-focused service designed to improve medication management by ensuring timely delivery of prescriptions direct to a patient's home, providing unlimited access to virtual pharmacist consults, and offering tools to help manage dosing compliance. This virtual pharmacy service allows users to have unlimited one-on-one video and phone consultations with pharmacists from the comfort of their home, while also providing them with tools to keep track of their family's medications through the service's online dashboard.

- In March 2022, we acquired Sprout Wellness Solutions, a holistic digital health and wellness solution designed to educate, engage and inspire people to improve their health through behavioural change. The solution is available as part of the TELUS Health suite of services for Canadian employers to empower their employees, through their benefits plan, to live healthier lives.

- In July 2022, we announced the opening of a new mental health clinic in downtown Montreal. In response to a high number of individuals waiting for mental health support in Quebec, the new clinic is accepting new clients and offering appointments and individualized programming with trained and compassionate psychologists, counsellors and life coaches.

- In August 2022, we launched TELUS Health MyPet, a new virtual veterinary care service app that brings dog and cat owners virtual access to provincially licensed vets. TELUS Health MyPet vets provide care for anything from nutritional management and parasite control to behavioural challenges, and can prescribe certain medications. TELUS Health MyPet ensures that pet owners who live in remote areas, or whose pets do not travel well in vehicles, still have access to care without leaving the comfort of home. The initial launch was in B.C. with plans to expand into other provinces over time.
- In November 2022, we announced a strategic initiative to provide TELUS Health's full suite of total health and well-being solutions to all of Walmart Canada's more than 100,000 associates. This robust suite of health services will provide Walmart Canada associates and their families with confidential access to hundreds of health professionals from a variety of disciplines to support every step of their healthcare journey.
- In December 2022, we announced a new collaboration with Desjardins Insurance that will bring TELUS Health's leading health and well-being services to members and other eligible individuals from group insurance plans administered by Desjardins.

TELUS Agriculture & Consumer Goods

- As part of our efforts to impact the food and consumer goods supply chains to be more resilient and agile, our team has focused efforts on integrating acquisitions that closed in the second half of 2021, aligning synergies across go-to-market and various corporate functions.
- During the first quarter of 2022, we released the first version of our agriculture data exchange platform, which allows our customers to leverage connections to farm machinery, weather and other data sources utilizing a single sign-on. This securely streamlines customer access and storage of data in our cloud platform. The platform has since launched commercially and is serving our global clients daily.
- During the second quarter of 2022, we launched our new trade promotion management, optimization and analytics (TPx) solution, and have begun transitioning customers onto our platform with plans to continue transitioning more of our current customers throughout the year. The TPx solution allows food merchants to maximize profitability while minimizing waste and inefficiencies.
- TELUS Agriculture is broadening its business strategy to deliver data insights and a wide range of integrated digital solutions to customers beyond the agricultural sector. In July 2022, we evolved the name of our agriculture unit to TELUS Agriculture & Consumer Goods as a signal of our commitment, building a unified TELUS brand that fully supports our strategic intent to link producers to consumers.

Scaling our innovative digital capabilities in TELUS International to build an asset of consequence

- As described in *Section 1.3*, we closed our acquisition of WillowTree in January 2023. WillowTree, a full-service digital product provider that is focused on end-user experiences, brings key tech talent and capabilities to TELUS International's portfolio of next-generation solutions, and further augments its digital consulting and innovative client-centric software development capabilities. Additionally, WillowTree enhances TI's ability to accelerate TELUS' own ongoing digital transformation and support key product development across our business, particularly within health and agriculture and consumer goods.
- During the first quarter of 2022, TI announced a collaboration with Automation Anywhere, a global leader in robotic process automation (RPA), to simplify the delivery and migration of automation solutions on Google Cloud. As a platinum preferred partner and managed services provider of Automation Anywhere, TI is enabling the end-to-end development of RPA solutions on Google Cloud to improve business tasks with more speed, accuracy and efficiency.
- In July 2022, TI officially opened its state-of-the-art site in Ballina, Ireland, which supports its ability to create, annotate and enhance data to enable better AI via human intelligence, further strengthening TI's global leadership in AI data solutions.
- In August 2022, TI opened its new site in the emerging business district of Pavia, Iloilo in the Philippines. This is its eighth site in the Philippines and second site outside of Metro Manila.

- During the Clinton Global Initiative September 2022 meeting, TI joined Everest Group's Commitment to Action to support their global goal of growing the impact sourcing workforce from its current level of 350,000 full-time employees to half a million in three years by connecting marginalized individuals to new jobs working alongside service providers, governments, and non-governmental organizations in collaborative efforts.
- In December 2022, TI announced the launch of SPACE by TELUS International – a new virtual recruitment platform that provides job seekers with a fully immersive experience in a fun and interactive digital environment.
- TELUS increasingly benefits from the lower TI cost structure and receives growing amounts of value-generating digital, AI, telecommunications, health and agriculture and consumer goods solutions from TELUS International, while being able to maintain control over the quality of the associated services delivered.
- TI remains top of mind for clients and peers, winning various awards in recognition of its digital capabilities leadership in the customer experience (CX) market and culture. In 2022, TI was:
  - Ranked a Leader in the NelsonHall 2022 NEAT Assessment for CX operations transformation. It was also ranked a Leader across all three of the evaluation's subcategories for revenue generation, CX improvement and cost optimization.
  - Included on the IAOP Global Outsourcing 100 list for the sixth consecutive year. The list reflects the best outsourcing providers across size and growth, customer references, awards and certifications, programs for innovation and corporate social responsibility.
  - For the second year in a row, won an AI Breakthrough Award for 2022. TI was recognized as a top company in the AI market for its intelligent TELUS International assistant, which was named Best Informational Bot in the Virtual Agents & Bots category based on a variety of considerations, including innovation, design and user-experience, as well as overall technological advancement.
  - Named a Star Performer on the 2022 Everest Group Trust and Safety, Content Moderation PEAK Matrix, highlighting TELUS International's improvement in market adoption and market share, as well as the company's ability to scale, and its enhanced language capabilities and provision of localized services. TI placed seventh on the Everest Group BPS Top 50 for 2022, a global list of the 50 largest third-party providers based on their BPS revenues and year-on-year growth.
  - Named a Leader by Everest Group in the category of Customer Experience Management (CXM) in the Americas – Service Provider Landscape with PEAK Matrix Assessment for 2022. Notably, TI was one of only six providers recognized as a Leader in this year's edition (and out of 37 providers in total under consideration), ranked across the categories of market success, vision and strategy, service focus and capabilities, digital and technological solutions, domain investments and client feedback. Additionally, for the first time, Everest Group named TI a Star Performer in its 2022 Everest Group PEAK Matrix for CXM in Europe, the Middle East and Africa (EMEA).
  - Named a winner of the 2022 Excellence in Customer Service Award in the Organization of the Year category by the Business Intelligence Group. The award recognized TI's superior performance in helping companies better communicate with their customers and provide a differentiated level of customer service.
  - The winner in the Infrastructure category of Verint's Engage 2022 Integration Challenge for its work on integrating Verint's Google Cloud Platform-based solution with TI's Contact Center as a Service (CCaaS) platform known as CC360.
  - Recognized, along with its client *refurbed* (a green tech scale-up), with a 2022 Stevie Award for Sales and Customer Service in the Frontline Customer Service Team of the Year category. Since 2020, TELUS International has supported *refurbed* in its growth and expansion through the delivery of an exceptional customer experience.
  - Included on Forbes' list of Best Employers for Diversity in 2022. Informed by a survey of over 60,000 people, including TELUS International's U.S. employees, the evaluation was based on four different criteria: direct recommendations, indirect recommendations, diversity among top executives/board and diversity engagement indicators.

- The winner of Mogul's Top 100 Companies for Diverse Representation in 2022 award, recognizing the company's leadership in implementing practices, investing in resources and tools to hire diverse talent and placing diverse leaders across the organization.

Our 2023 corporate priorities are set out in the table below.

2023 corporate priorities

- Elevating our customers, communities and social purpose by honouring our brand promise, Let's make the future friendly
- Leveraging TELUS' world-leading technology to drive superior growth across mobile, home and business services
- Scaling our innovative digital capabilities in TELUS International, TELUS Health and TELUS Agriculture & Consumer Goods to build assets of consequence.

4. Capabilities

The forward-looking statements in this section, including statements regarding our dividend growth program and our financial objectives in *Section 4.3*, are qualified by the *Caution regarding forward-looking statements* at the beginning of this MD&A.

4.1 Principal markets addressed and competition

TELUS technology solutions (TTech): Mobile products and services for consumers and businesses across Canada. Fixed products and services, including residential services in British Columbia, Alberta and Eastern Quebec; business services across Canada; automation and security solutions across Canada; global healthcare and well-being solutions; and global agriculture and consumer goods solutions

Our mobile products and services

- Data and voice – Fast internet access (via our 4G and 5G network available to over 99% and approximately 83% of Canadians, respectively) for video, social networking, messaging and mobile applications, such as My TELUS, TELUS SmartHome, Optik TV, Pik TV and virtual care apps; mobile voice service with features such as Call Control; clear and reliable voice services, including TELUS Business Connect®; and international roaming.
- Devices – The latest smartphones, tablets, mobile internet keys, mobile Wi-Fi devices, machine-to-machine (M2M) modems, digital life devices and wearable technology, such as smart watches and our LivingWell Companion.
- Suite of Internet of Things (IoT) solutions, including managed connectivity services, to support Canadian businesses, including device estate management, asset tracking, fleet management, connected worker, remote monitoring, digital signage, premises security, smart hospital solutions, intelligent traffic solutions and data analytics.

Our fixed products and services

- Internet – Comprehensive high-speed internet access with TELUS PureFibre; fixed high-speed internet access (HSIA) service, with email and a comprehensive suite of security solutions; and wireless HSIA, with reliable Wi-Fi and cloud storage. We offer multiple plans, including plans with 2.5 Gbps symmetrical download and upload speeds.
- Television – High-definition entertainment service with Optik TV and Pik TV. Optik TV offers extensive content options, including 4K and 4K HDR live TV, on-demand content and streaming services such as Prime Video (included in the Amazon Prime membership), Netflix, YouTube and hayu as well as our Stream+ offering. Optik TV also delivers innovative features, including a voice assistant that allows customers to control their TV, a wireless digital box, large PVR capacity and the ability to restart live TV in progress or from the past 30 hours. In addition, our Optik TV and TELUS TV+ apps allow customers to watch live TV, set recordings and access on-demand content from a smartphone, tablet, computer or Apple TV. Pik TV delivers a streamlined offer for customers through Apple TV and select Android TV devices. It is also accessible through an internet browser or our Android and iOS mobile applications. Pik TV embraces the changing environment, where content is increasingly available from over-the-top (OTT) services.

- Voice – Reliable fixed phone service with long distance and calling features such as Call Control; wireless home phone; and voice over IP (VoIP) supporting voice services into the future.
- Home and business security and automation – Real-time 24/7 central monitoring station, guard response service (where available), and wireless and hard-wired security technology, integrated with smart internet-connected devices. These services are enabling smart homes and smart businesses by allowing customers to remotely monitor and manage their premises via cameras, smoke detectors, lights, door locks, environmental controls, appliances and other systems for enhanced security, comfort, convenience and energy efficiency.
- Secured IP connectivity for businesses – Converged voice, video and data services and internet access, offered on a high-performing network. Also includes software-defined wide area network (SD-WAN) and secure access service edge (SASE) offerings.
- Cloud and managed information technology (IT) services – Suite of hybrid IT solutions offers traditional and cloud technologies, network connectivity, security, managed IT and cloud-based advisory services.
- Security consulting and managed services – Cloud-based and on-premises solutions ensuring security for data, email, websites, networks and applications.
- Unified Communications conferencing and collaboration – Full range of equipment and application solutions, including Unified Communications as a Service (UCaaS), to support meetings and webcasts by means of phone, video and internet. Recent acquisitions are bolstering our capabilities in the small and mid-market business segments.
- Healthcare – Our core segments of focus in the global marketplace are: employers (small, medium and large enterprise), payors (both insurers and public sector), providers (including physicians, clinicians, pharmacists) and consumer solutions. We offer a variety of integrated health and well-being products, solutions and services, including virtual care (comprehensive primary care, mental health support, wellness offerings for employees and citizens, pet care), remote patient monitoring and personal emergency response services, medication management (virtual pharmacy, pharmacy management systems), health records management (personal health records, electronic medical records (EMR)), claims management solutions, and curation of health content. Upon our acquisition of LifeWorks, we expanded the global footprint of TELUS Health, primarily with respect to employer and employee-focused well-being, including well-being, health and productivity solutions (including employee and family assistance programs (EFAP), internet-based cognitive behavioural therapy (iCBT) and absence and disability management), corporate reward, recognition and perks programs, pension and benefits administrative solutions, and retirement and financial solutions.
- Agriculture and consumer goods – Agronomy record-keeping and recommendations, rebate management services, supplier management, animal health solutions, food traceability and quality assurance, cold chain tracking, data management solutions and software solutions for trade promotion management, optimization and analytics (TPx), retail execution, supply chain solutions and analytics capabilities.

Our capabilities supporting mobile and fixed products and services

- Licensed gross national mobile spectrum holdings averaging 198 MHz.
- Coast-to-coast digital 4G LTE access technology and growing 5G deployment:
  - Overall coverage of 99% of Canada's population, with LTE advanced (LTE-A) technology covering more than 96% of Canada's population and 5G covering approximately 83% of Canada's population at December 31, 2022. Coverage includes domestic network sharing agreements.
  - Manufacturer's rated download speeds: 5G, up to 3 Gbps; LTE-A, up to 1.5 Gbps; LTE, up to 150 Mbps; HSPA+, up to 42 Mbps. Average expected speeds: 5G, up to 450 Mbps; LTE-A, up to 390 Mbps; LTE, up to 45 Mbps; HSPA+, up to 14 Mbps.[1]

1 Network speeds vary with location, signal and customer device. Compatible device required.

  - Reverts to LTE technology and speeds when customers are outside 5G coverage areas.
  - International voice and data roaming capabilities in more than 225 destinations, including voice over LTE (VoLTE) roaming and 5G roaming. As of the date of this MD&A, VoLTE roaming is available in 61 international destinations and 5G roaming is available in 72 international destinations.

- IoT technology:
  - LTE-machine (LTE-M) technology across Canada and 5G at selected sites, which supports large quantities of devices that continually collect and transmit data, or that transmit data in infrequent short bursts, depending on the requirement.
  - Multi-service multi-billing capabilities provide the ability to separately classify, rate and bill data traffic across IoT devices.
  - Specialized IoT solutions that support municipalities, construction, utilities and transportation.
- Ongoing connection of households and businesses directly to fibre-optic cable; approximately 3.0 million households and businesses connected with TELUS PureFibre in B.C., Alberta and Eastern Quebec at December 31, 2022.
- Broadcasting distribution licences allowing us to offer television services in incumbent territories, as well as licences to offer on-demand services.
- Security technology to support central monitoring and guard response service (where available), integrated with automated smart devices. Field services capabilities to install, upgrade and repair security technology at customers' premises.
- An IP-based national network overlaying an extensive switched network in B.C., Alberta and Eastern Quebec, as well as global interconnection arrangements.
- Seven data centres in six communities directly connected to the national TELUS IP network, creating an advanced and regionally diverse computing infrastructure in Canada.
- Provide access for businesses across Canada through our extensive managed fibre network, and product capabilities supported by our national delivery teams.
- Technology solutions to assist regional health authorities, hospitals, insurers, consumers and employers; as well as solutions to improve connectivity and collaboration among healthcare providers, including physicians, nurses, pharmacists and physiotherapists. As a result of our LifeWorks acquisition, we have augmented our capabilities in the personalized continuum of care we offer to employers and their employees.
- Technology solutions to assist agribusinesses, farmers, ranchers, commodity aggregators, processors, distributors, retailers and consumer packaged goods companies in sustainably improving the efficiency, traceability and responsiveness of the food system.
- Our leading customer service generates increased customer loyalty and lowers churn rates for mobile and fixed services. Having our TI team members assist with customer service strengthens our ability to continue delivering an exceptional customer experience.

Competition overview for mobile products and services

- Facilities-based national competitors Rogers Wireless and Bell Mobility, as well as provincial or regional telecommunications companies Shaw, Quebecor, SaskTel, Eastlink, Tbaytel and Xplornet.
- Fixed wireless services.
- Resellers of competitors' mobile networks.
- Services offered by cable and mobile competitors over mobile and metropolitan Wi-Fi networks.
- Competitors for our IoT solutions include other providers of LTE and LTE-M network capabilities, IoT connectivity tools and platforms, and automated vehicle location and transportation solutions.

Competition overview for fixed products and services

- Cable competitors for internet, telephone and entertainment services, such as Shaw Communications (in B.C. and Alberta) and Cogeco Cable and Videotron (in Eastern Quebec).
- Substitution of mobile services, including our own mobile offerings, for residential local and long distance voice services. In B.C. and Alberta, the percentage of households with mobile-only telephone services (among all providers, including TELUS) was estimated to be 63% in 2022, compared to 60% in 2021. In Eastern Quebec, the percentage of households (with services provided by TELUS) with mobile-only telephone services was estimated to be 39% in 2022, compared to 39% in 2021.
- Our national telecommunications competitors Rogers Communications Inc. and BCE Inc. also offer telecommunications services for business and enterprise customers, as do various suppliers that are increasingly selling directly to customers.
- Competitors for home and business security range from local to national companies, such as BCE Inc., Rogers Communications Inc., Chubb-Edwards, Stanley Security and Fluent Home. Competitors also include do-it-yourself security providers such as Lorex and home automation service providers such as Ring, Nest and Wyze.
- Various other small, non-traditional companies offering OTT business solutions, including SD-WAN and UCaaS solutions. These competitors are more prevalent in the small and medium-sized business segments.
- Various others offering VoIP-based local and long distance, as well as internet and data services, or reselling those services.
- OTT and direct-to-consumer voice and/or entertainment services.
- Satellite-based entertainment and internet services offered by BCE Inc., Shaw Communications, Xplornet, Starlink and Telesat.
- Competitors for TELUS Health include: providers of EMR and pharmacy management products, such as Omnimed, Familiprix, Medfar, Fillware, ARI and Logipharm. Competitors also include systems integrators; health service providers, such as Loblaw, McKesson and the Jean Coutu Group, that have also become vertically integrated and own a mix of health services delivery, IT solutions and related services; and potentially, global providers, such as EPIC and Cerner, that could achieve an expanded Canadian footprint. Competitors for virtual care services include Tia Health, CloudMD, MD Connected, AppleTree VC, Cover Health, Dialogue, Maple, Homewood, Vetster, MarsVCA and Smart.Vet. Competitors for TELUS Health's corporate and preventative health service offerings include Medcan, Cleveland Clinic, Loblaw and Wellpoint. Competitors for our acquired LifeWorks business in the employer and employee-focused well-being space include: EFAP competitors such as Dialogue and Homewood in Canada, and Compsych, WPO and Magellan in the U.S. LifeWorks also competes against digital mental health players in the U.S. including Lyra, Modern Health and Virgin Pulse. Pension and benefits administration and retirement and financial solutions competitors include Alight, Willis Towers Watson, Fidelity, Conduent, Aon and Mercer, among others.

- TELUS Agriculture & Consumer Goods is unique in that we are a global provider of agriculture and food technology and data solutions, serving customers across the entire food value chain, from farm to fork. Our ability to provide solutions across the chain provides us with the ability to drive insights through connecting data at various stages of production. The chain broadly displays strong competition across a high volume of smaller competitors. TELUS Agriculture & Consumer Goods does have competitors at each stage along the chain:
    - In the animal health business, competitors include companies such as Performance Livestock Analytics (a part of Zoetis).
    - In the food, beverage and consumer goods business, competitors include Accenture, Oracle and Kantar's trade promotion management solutions.
    - Competitors for our agribusiness solutions range from local to global companies, such as AgData, Proagrica, Farmers Edge and FoodLogiQ.

Digitally-led customer experiences – TELUS International (DLCX): We are a digital customer experience innovator that designs, builds and delivers high-tech, high-touch next-generation solutions, including artificial intelligence (AI) and content moderation, for global and disruptive brands.

Our products and services

- Our services support the full lifecycle of our clients' digital transformation journeys, enabling them to more quickly embrace next-generation digital technologies to deliver better business outcomes.
- AI data solutions – AI with human-powered data backed by the latest AI training data technology. Our data annotation solutions cover 500 languages and dialects across all major data types, including sensor fusion for advanced computer vision models.
- Customer experience (CX) – Our CX solutions include work from home, customer care, tech support, sales growth, collections and healthcare/patient experience.
- Digital experience (DX) – Our DX solutions include AI and bots, omnichannel CX, mobility, cloud contact centre, platform transformation and UX and UI design.
- Trust and safety – Our solutions include social media and content moderation, along with fraud prevention and detection services such as know your customer, anti-money laundering, identity verification and fraud investigation.
- Advisory services – Specialized services are available for digital strategy, CX process consulting, data and customer analytics, workforce management, learning excellence and business and process transformation.
- IT lifecycle – Solutions include cloud and platform services, application development and management, quality assurance (QA) and testing, system operations, IT service desk, IoT and enterprise platform services.
- Back office and automation – Solutions cover robotic process automation (RPA), talent acquisition, finance and accounting and supply chain/procurement outsourcing.
- We believe we are uniquely positioned to serve these markets and access significant market opportunities due to the overall industry growth rate, low penetration to date and our existing strong experience in this sector of the market.
- We serve client demands that have experienced considerable growth in recent years, such as content moderation, which includes review and compliance services applied to user-generated content on social media and other digital platforms. The necessity of moderating content on digital platforms has prompted enterprises to seek specialized services that can help them accommodate changes in an uncertain, highly-regulated environment. AI data solutions, including advanced computer vision models, are additional offerings experiencing growing demand.

Our capabilities

We believe we have the right combination of people, capabilities and technology to help companies address the entire spectrum of designing, building and delivering integrated end-to-end customer experience systems.

Strategy and innovation – Understand and define client needs to innovate and develop plans . With our intuitive digital design approach, we help our clients design next-generation business practices based not only on transforming technology, but also on transforming processes and culture.

- Next-generation digital strategy
- Ideation on innovation
- UX/UI design
- CX process consulting, including customer, employee and system journey mapping.

Next-gen tech and IT services – Building digital customer experience systems using next-gen technologies . Our clients often need to re-engineer their customer experience systems to provide a seamless, contextual, consistent and personalized customer experience across all channels – digital or human. To do this, they need to modernize their core systems and applications, while at the same time build new digital solutions that leverage technologies such as cloud, mobile, AI, automation, IoT, analytics and more. The key services underlying our next-gen tech and IT services solution are:

- Engineering, application development and QA
- Data annotation, AI/ML and intelligent automation – including RPA and chatbots
    - We assist our clients to improve customer experience with data annotation in domains such as search relevance, image/video labelling for smart cities, audio transcription and facial recognition to our clients who utilize AI technologies. We also use AI-based conversation bots in customer engagement situations to augment or simulate human interactions, enabling 24/7 personalized responses to customers. Through TIAI Data Solutions, we collect, annotate and validate data. in text, images, videos and audio in more than 500 languages and dialects, including for computer vision, for technology companies in social media, search, retail and mobile.
    - We use advanced analytics and AI techniques to analyze structured and unstructured consumer datasets to provide a unified data view of end-customers' entire transaction history with the client, and derive real-time insights from it to provide a personalized customer experience.
    - Intelligent Insights is a diagnostic platform tool that aligns human and digital workforce to manage the end-to-end lifecycle of digital co-workers.
- Managed cloud services – including migration, implementation and managed services for public cloud, private cloud and multi-cloud hybrid environments
- Workforce transformation.

CX process and delivery – Delivering exceptional customer experience . We use our customer experience process expertise, as well as our highly skilled, empathetic and engaged teams, to provide exceptional, integrated customer experiences. Our global delivery platform enables us to service clients across geographies and customize the delivery strategy according to their evolving needs.

- Managed solutions, including learning services, workforce management, contact centre

- Learning excellence solutions
- Workforce management services
- Contact Centre-as-a-Service
- Omnichannel customer experience, including care, sales and tech support
- 360-degree customer analytics.

Trust and safety

We combine automated digital moderation tools with human support to provide a robust trust and safety framework to monitor our clients' digital businesses. Our customizable and scalable digital content management solutions can also help clients boost their social media presence, increase their user base and attract more customers through social and eCommerce channels.

Adjacent to content moderation and part of our broader trust and safety program, fraud prevention has become more critical across all industries. Our service offering is focused on promoting ethical conduct, identification verification, and profile validations combating asset misappropriation, managing fraudulent statements and preventing corruption or any other unlawful activity such as account takeovers.

Competition overview

- The sectors in which we compete are global, fragmented and rapidly evolving. We face competition primarily from:
  - In-house technology and customer experience management teams
  - Digital transformation services providers such as Endava, EPAM and Globant
  - Globally diversified IT and BPO service providers such as Accenture, Cognizant, Genpact and WNS
  - Customer experience providers such as TaskUs, Teleperformance S.A. and TTEC
  - Single-threaded data annotation providers such as Appen.
- We believe that the main competitive factors in our business include digital capabilities, comprehensiveness of offerings, vertical and process expertise, global delivery capabilities, team member engagement and retention, reputation, track record and financial stability. We believe that we compete favourably with respect to each of these factors.

4.2 Operational resources

Resources

Our team

- We had approximately 108,500 employees at December 31, 2022, including 73,300 from TI. Of our 108,500 employees, 34,700 were located in Canada and 73,800 were located internationally. We also use external consultants and contractors, including crowdsourced providers through TELUS International AI Data Solutions (TIAI).
- Approximately 7,515 of our employees are covered by collective agreements. The agreement with the Telecommunications Workers Union, United Steelworkers Local 1944 (TWU), which covers approximately 5,880 employees, expired on December 31, 2021. The expired contract remains in effect while the parties are bargaining, until a new agreement is reached. See *Section 10.11* for further details.
- The agreement with the Syndicat québécois des employés de TELUS (SQET), which covers approximately 700 employees in Quebec, expired on December 31, 2022. Bargaining commenced in January 2023 and is scheduled to continue into the second quarter of 2023. The agreement with the Syndicat des agents de maîtrise de TELUS (SAMT), which covers approximately 540 employees in Quebec, expired on March 31, 2022. Collective bargaining commenced in March 2022 and continued throughout 2022. Further collective bargaining dates are scheduled in the first quarter of 2023. Our TELUS Employer Solutions Inc. subsidiary is signatory to a collective agreement with the B.C. Government and Services Employees' Union, which covers fewer than 100 employees and expires on July 31, 2023.
- Approximately 335 employees within the ADT Security Services Canada, Inc. subsidiary (ADT Canada) are unionized. These employees are covered by 12 separate collective agreements between ADT Canada and a number of different unions in multiple provinces. The expiry dates of these collective agreements vary.
- TI has access to labour across 30 countries for both management as well as support. Digital solutions are primarily resourced from North America, India, Philippines, Central America and Europe.
- Our objective is to attract, develop and retain talented employees in Canada and internationally. We achieve this objective by investing in our people throughout their careers, and by offering diverse and inclusive employment prospects and development opportunities.
- Team member engagement was measured again through our annual fall Pulsecheck survey, resulting in an engagement score of 83%, which is an encouraging accomplishment against the backdrop of the highly competitive and dynamic environment in which we work and reinforces the strength of the culture our team members have built together. TELUS is the most engaged organization globally compared to organizations of our size and composition according to our survey provider, Kincentric.
- In our team member surveys, we continue to include questions to assess our team's health and well-being and gather their insights about our work environment, including changes due to the COVID-19 pandemic. Key highlights include team members confirming their belief that their safety is a priority for their leaders; their leader is providing the support they need during this extraordinary time; and their work arrangements allow them to collaborate productively while also allowing them to meet the needs of customers.
- Having engaged teams leads to a better team member experience, which in turn drives an improved customer service experience – our customers are more satisfied, resulting in a lower churn rate with our products and services.
- In 2022, reinforcement of our culture continued to focus on diversity and inclusion, human capital development and team member engagement, through:
    - Leveraging our strong culture with a focus on listening to team members
    - Putting customers first and leaders engaging their teams through our fair process engagement model, and

Resources
Our team (continued)
• Utilizing Pulsecheck feedback, including our inclusion index results, to build and create action plans for improvements. • We aim to attract and retain key team members through both monetary and non-monetary approaches. Our compensation and benefits program is designed to support our high-performance culture and is both market-driven and performance-based. Where required, we implement targeted retention solutions for team members with critical skills or talents that are scarce in the marketplace, and we have a succession planning process to identify top talent for senior-level positions. • For further details related to our team, see the description under *Mitigation* in *Section 10.11 Our team*.

Our major brands and distribution channels

- TELUS – A national communications and information technology company serving customers across mobile, data, IP, voice, television, entertainment, video and security, driven by a social purpose to connect all Canadians for good.
- Koodo Mobile – A national provider of postpaid and prepaid mobile voice and data services with a broad distribution network, including TELUS-owned stores, dealers and third-party electronics retailers.
- Public Mobile – A prepaid mobile service provider with web-based and physical distribution, providing customers with a SIM-only service.
- Mobile Klinik – A provider of device performance and professional smartphone and tablet repair offering high-quality, certified pre-owned mobile devices.
- Optik TV and Pik TV – High-definition entertainment services offering television shows, on-demand content and streaming services.
- TELUS PureFibre – Our next-generation fibre-optic network, which delivers fast internet and provides the backbone for our 5G network.
- TELUS SmartHome Security and TELUS Secure Business – Full-service security offerings for residential and business customers.
- TELUS International – A digital customer experience innovator that designs, builds and delivers high-tech, high-touch next-generation solutions, including AI and content moderation, for global and disruptive brands.
- TELUS Health – Supporting our customers and solving some of the most pressing issues facing citizens, patients, healthcare professionals, employers and employees.
- TELUS Agriculture & Consumer Goods – A global provider of agriculture and food technology and data solutions, serving customers across the food value chain.
- TELUS Ventures – A corporate venture capital fund that has invested in more than 85 market-transforming companies since 2001.
- GoCo – An agile entity that brings next-generation unified communications and managed network solutions to the business market in a highly differentiated and entrepreneurial manner.
- Social purpose initiatives – TELUS Wise (national digital safety education program), TELUS Pollinator Fund for Good (impact fund), and Connecting for Good programs that help bridge the digital divide: Mobility for Good (free or low-cost mobility plans and phones), Internet for Good (low-cost internet plans), Tech for Good (support and training, including assistive technology for Canadians with disabilities), and Health for Good (mobile health clinics that bring care to those experiencing homelessness).

Resources

Our major brands and distribution channels (continued)

- Our sales and support distribution channels:
  - Mobile services are supported through a broad network of TELUS-owned and branded stores, including our 50% ownership of the kiosk channel WOW! Mobile, and an extensive distribution network of exclusive dealers and large third-party national retail partners (e.g. Best Buy, Walmart and London Drugs), as well as online self-serve applications, intuitive virtual-assistant chatbots, mass marketing campaigns and customer care telephone agents. Through Mobile Klinik, we offer professional smartphone and tablet repair, refurbishment and resale.
  - Fixed residential services (including automation and security) are supported through TELUS-owned and branded stores, customer care telephone agents, independent dealers and agents, digital home technicians and partners and online and TV-based self-serve applications.
  - Through telus.com, we sell mobile products and services (including digital accessories), fixed products and services, automation and security, health and business products and services. We provide online account management tools (e.g. My TELUS), enabling customers to manage their accounts through our website or mobile applications, as well as online chats for customer support. We also provide video calling solutions to enable installations without having technicians enter a customer's premises.
  - National direct-to-consumer sales team, dedicated to rapid expansion and retention of our customer base through face-to-face and virtual conversations.
  - Business services, including healthcare and security, across mobile and fixed service offerings are supported through certain dedicated stores for business, TELUS sales representatives, product specialists, independent dealers, direct business channels and online self-serve applications for small and medium-sized businesses.
  - TELUS International's solutions are supported through sales representatives, client relationship management teams, data annotation and content moderation teams, and digital engineers, developers and architects.
  - TELUS Health provides some of its services – personal health records and home health monitoring – in partnership with provincial governments. Through our LifeWorks acquisition, we improve lives by supporting the whole person's well-being of mental, financial, social and physical health, combining technology and deep expertise in mental health via our Total Mental Health offering. We also provide EFAP and absence and disability management services through certain channel partners (including insurance companies). In addition, LifeWorks partners with certain provincial governments to provide certain well-being services.
  - TELUS Agriculture & Consumer Goods' solutions are supported through online self-serve applications, sales representatives and customer relationship management teams.

Resources

Our technology, systems and properties

- We are a technology-enabled company with a multitude of IT systems and processes. We are focused on driving innovation and making generational investments to deliver state-of-the-art broadband solutions in an increasingly digital society.
- Broadband consumer and business networks
  - We launched our 4G LTE network in 2012, and today it covers 99% of Canada's population. This network evolved in 2017 to adopt LTE-A technology, which now covers more than 96% of Canada's population and offers peak theoretical speeds of up to 1.5 Gbps. Our LTE CAT-M1 IoT network covers 96% of Canada's population. See *Leveraging TELUS' world-leading technology to drive superior growth across mobile, home and business services* in *Section 3 Corporate priorities* for additional information.
  - We have made significant investments in heterogeneous network (HetNet) technology, one of the key building blocks for 5G. HetNet combines multiple types of cells, such as outdoor macrocells and microcells, as well as indoor pico cells, to enhance coverage and capacity in crowded urban areas and inside buildings. By taking continuous strides to evolve our small-cell technology concurrent with the evolution of network technologies to LTE-A pro (i.e. 4.5G), in 2017, we became the first operator in Canada to introduce licensed assisted access (LAA) small cells for both outdoor and indoor environments, capable of speeds of up to 970 Mbps. In 2019, we continued advancing LAA technology with speeds of up to 1.2 Gbps, and we have deployed more than 400 LAA sites to date.
  - In 2018, we became the first operator globally to introduce LTE FDD massive multiple-input-multiple-output (MIMO) 32TRx technology on the 2600 MHz band as part of the LTE-A pro technology evolution, and in 2020, we introduced dual-band massive MIMO technology in the 1900 MHz and AWS bands, also a global first. This technology further enhances the capacity of our wireless infrastructure, enables a stronger customer experience and helps to sustain our long-term wireless leadership.
  - In 2019, we progressed the virtualization of our core network infrastructure with the voice core, providing a stepping stone into 5G service readiness. The network virtualization improves our network scalability, resiliency and cost efficiency.
  - In 2020, we launched our 5G technology capable of speeds of up to 1.7 Gbps.
  - In 2021, we increased the speeds of our 5G network, capable of up to 1.9 Gbps, through the deployment of incremental 5G spectrum.
  - In 2022, our 5G network evolved and is now capable of up to 3 Gbps. Our 5G network covered approximately 83% of Canada's population by December 31, 2022.
  - Our 5G coverage is foundational, as it will enable the advancement of new 5G capabilities such as network slicing, multi-access edge computing (MEC) and low-latency critical communications. A key enhancement to our 5G network in 2021 was the beginning of the deployment of the 3.5 GHz spectrum with MIMO technology. By the end of 2022, our 3.5 GHz footprint reached 40% of the Canadian population.

Resources

Our technology, systems and properties (continued)

- Our investments to deploy our PureFibre technology have brought fibre-optic connectivity further into our infrastructure and directly to homes and businesses. At the end of 2022, approximately 3.0 million homes and businesses in communities across B.C., Alberta and Quebec had access to ultra-fast, symmetrical internet speeds of 150 Mbps up to 1 Gbps, and approximately 2.0 million premises in B.C. and Alberta had access to symmetrical internet speeds of up to 2.5 Gbps with TELUS PureFibre. Recognizing the need for highly reliable connectivity with low latency throughput to support emerging services such as virtualized networks and IoT applications, we have also begun rolling out new equipment for enhanced speeds and services.

    - We continue to deploy the next evolution of our fixed IP and optical core/edge technology, smart edge architecture. This architecture enables significant automation and per-port cost improvement to support network growth and evolution.

    - We continue to roll out our third-generation national dense wavelength division multiplexing transport backbone (packet transport 3.0) colourless, directionless and contentionless (CDC) network overlay that is connected from B.C. to Quebec and into the U.S. This architecture allows network growth without the need for costly re-generation, enables optimal optical rerouting during a fibre cut and improves network growth costs.

    - In 2022, we continued evolving our PureFibre and HSIA technologies to deliver a superior customer experience, propelling our market leadership in home and business services by launching 2.5 Gbps symmetrical service to major markets in B.C. and Alberta while continuing to bring broadband network speeds to thousands of homes in rural and Indigenous communities in B.C., Alberta and Quebec.

    - In 2022, we continued to bring broadband network speeds to homes in rural and Indigenous communities in B.C., Alberta and Quebec, enabling connectivity to approximately 34,500 premises across 140 communities, including 12 Indigenous lands, and providing 14 kilometres of highway coverage. Cumulative to date, we have enabled 692,000 rural premises with PureFibre across 304 communities, including 144 Indigenous lands.

    - In 2022, we were awarded $257 million in government subsidies that will help bring PureFibre to over 20,000 premises spread across more than 175 rural communities, including over 100 Indigenous lands, between now and 2026. This included a landmark project worth $105 million in funding that we won to support the connection of over 6,000 rural and Indigenous premises in Northwestern Alberta to the PureFibre network by the end of 2026.

    - In 2022, we acquired Fully Managed Inc. to continue building upon our differentiated Business capabilities with cloud-based software and remote network monitoring technology that enables customer assistance without the need for on-site support personnel. This acquisition also included its senior care division, which offers effortless automation for senior care providers looking to modernize critical processes.

    - We continue to evolve our world-class emergency services to harness the power of IP through our implementation of next-generation 9-1-1.

    - We have continued to innovate for our customers through our Optik TV and Pik TV platforms. By investing in the cloudification of video infrastructure and innovative applications, we are continuing to advance our priority of enabling "anytime, everywhere" access to content and entertainment, thereby continuing to deliver an exceptional customer experience.

    - In 2022, we launched Wi-Fi Plus, a new service that ensures reliable Wi-Fi coverage in every corner of a home, with professional installation, ongoing expert support, and network security for the peace of mind of our internet customers. Additionally, we rolled out Wi-Fi 6 capabilities to 170,000 customers, and soft launched Wi-Fi 6E in one community.

Resources

Our technology, systems and properties (continued)

- In 2022, we introduced self-install capabilities for our internet services in B.C. and Alberta, to enable an easy and hassle-free installation experience without requiring a technician visit.
- In 2022, we expanded our PureFibre network to a number of older condominium buildings in B.C. and Alberta through micro distribution point unit (DPU) technology. This enables condominium residents to enjoy PureFibre speeds without major modification to their buildings' electrical network.
- We are continually enhancing our customer applications across Pik TV, Optik TV, TELUS SmartHome and TELUS Connect, giving customers increasing control over their services and devices.

- We are continuing to monitor traffic requirements and invest in our network to maintain service and support to Canadians:
  - Expanding streaming capacity for Optik TV video-on-demand and new solutions to enable scaling to support continued increases in video-on-demand and broadcast viewing consumption.
  - Continuing to migrate voice traffic from legacy 3G with 87% of calls now processed as VoLTE.
  - Augmenting our wireless network to support a 38% year-over-year increase in mobility traffic and a 10% year-over-year increase in wireless HSIA traffic in 2022.
  - Deploying mission critical environment pods (self-contained units with HVAC and power) to quickly provision our critical network equipment and reduce the risk of equipment outages.
- Real estate – Our network facilities are constructed under or along streets and highways, pursuant to rights-of-way granted by the owners of land, including municipalities and the Crown, or on freehold land we own.
  - Our real estate properties (owned or leased) also include administrative office space and mixed-use office, commercial and residential properties, all of which may be developed through joint ventures, as well as other real estate development projects that advance our social purpose, work centres and space for telecommunications equipment. Some buildings are constructed on leasehold land and the majority of wireless radio antennae are on towers that are situated on lands or are on buildings held under leases or licences with varying terms. We currently participate in two real estate joint ventures. (See *Section 7.11*.)
  - Plans to redevelop real estate assets will require regulatory approvals and also the need to work cohesively with our network teams to manage reliability and operational business considerations.
- Intangible assets – Our intangible assets include spectrum licences from Innovation, Science and Economic Development Canada (ISED), which are essential to providing mobile services. We have assets averaging 198 MHz nationally. We have deployed 600 MHz, 700 MHz, 2300 MHz, 2500 MHz, 1900 MHz, AWS and 850 MHz spectrum to evolve our wireless infrastructure. Further, we began our work to operationalize our recently acquired 3500 MHz spectrum in the latter part of 2021 and will continue doing so in the coming years. We intend to continue acquiring spectrum within the rules set out by ISED to meet our future capacity requirements.

Resources

Our technology, systems and properties (continued)

- Intellectual property, which we own or have been granted the right to use, is an essential asset for us. Intellectual property enables us to be known and recognized in the marketplace through our brand style, trade dress, domain names and trademarks. It protects our know-how and software, systems, processes and methods of doing business through copyrights, patents and confidential information, including trade secrets. It also helps us to improve our competitiveness by fostering an innovative work environment. Each form of intellectual property is important to our success. For instance, the TELUS brand plays a key role in product positioning and our Company's reputation. To protect our intellectual property assets, we rely on a combination of legal protections afforded under copyright, trademark, patent and other intellectual property laws, as well as contractual provisions under licensing arrangements. We aim to maximize the value of our intangible assets in the areas of innovation and invention by ensuring that they are appropriately used, protected and valued. Further information on our tangible and intangible assets can be found in *Section 8.1 Critical accounting estimates and judgments* .

- Our broadcasting distribution licences enable us to provide entertainment services. See *Broadcasting-related issues* in *Section 9.4*, which discusses developments relating to these licences.

- Future technologies – In addition to evolving our existing infrastructure, we are investing in the technologies of the future that will serve as the foundation to provide next-generation services to Canadians.

  - We continue to invest in enabling systems such as our Jasper connected device platform (CDP) and our dedicated machine-to-machine virtual evolved packet core (M2M vEPC) to support IoT applications, where the ease of onboarding partners is crucial for emerging services such as connected vehicles, fleet management and more.

  - We continue to invest in both technology and talent across TELUS to harness the competitive capabilities, flexibility and resilience of cloud and digital technology. Our ongoing digitization efforts enable TELUS to rapidly introduce new products and services, swiftly respond to customer and market needs, and provide highly reliable service.

  - Advancing our drive to simplify and consolidate systems across several fronts, such as unlocking customer relationship management (CRM)/billing systems in Quebec with LivingWell Companion and SmartHome products now supported for Quebec incumbent local exchange carrier (ILEC) and new fibre customers, opening new Quebec territory growth opportunities, automating copper to fibre (C2F) processes to create a one-click C2F order, reducing call handling time and billing errors, and completing copper on CRM/billing system trials, each paving the way for consolidating consumer ordering into one system stack. Manual migrations of Quebec customers to our shared national systems started in 2021 and we expect to be substantially complete by the end of 2023.

Resources

Our technology, systems and properties (continued)

- Modernizing our enterprise communication platform to be fully cloud-enabled and to improve system redundancy while processing millions of messages, including mobile eBill short message service (SMS) reminders, Koodo data threshold SMS and upsell messages, and mobile number portability messages.
- We completed the migration of our internet customers to our new cloud-based email platform. This service, leveraging our partnership with Google, provides an exceptional customer experience, improved reliability and expanded features for our customers.
- Reducing manual work through automation and advancing Agile and DevOps capabilities:
  - Leading to improved agility, cost to serve and speed to market, while also driving reliability, including expanding test automation capabilities
  - Scaling deploy-on-demand release frameworks, enabling faster speed to market and mitigating risks early in the release cycle, expanding automated software development and self-serve test data management capabilities to improve quality of software
  - Standardizing test case and defect management toolset, mitigating reliability risk related to unsupported tools.
- Improving our data analytics and telemetry capabilities to deliver business outcomes through enhanced customer targeting, visualization and business intelligence tools, while also making significant accuracy and reliability enhancements to our geo-analytics platform to support new and personalized/targeted market campaigns.

- Through TI, we are a digital customer experience innovator that designs, builds and delivers high-tech, high-touch next-generation solutions, including AI and content moderation, for global and disruptive brands, as described in *Section 4.1*. These services are provided from facilities located in North and Central America, Europe and Asia.
- Through TELUS Health's services – such as pharmacy management, EMRs (including mobile EMRs), electronic health records, personal health records, clinical information systems, remote patient monitoring, virtual care offerings and online claims settlement management software solutions, including the online renewal of prescriptions, e-prescribing services and MedDialog® – TELUS Health facilitates the integration of electronic health records from the home to the doctor's office to the hospital, making critical health information available to healthcare providers over our broadband network.
  - Through its TELUS Health Care Centres, TELUS Health also provides executive benefits, occupational health, employee health and wellness services and individual preventive health services. With preventive health assessments, 24/7 virtual care support and health specialists, TELUS Health Care Centres provide proactive health services to individuals and their families.
  - Through the LifeWorks acquisition, we bolstered our technology solutions for employer and employee-focused well-being through the provision of global well-being and EFAP services, iCBT, absence and disability management, workers' compensation, and retirement and financial administrative solutions.
- Our TELUS Agriculture & Consumer Goods technology solutions meaningfully impact primary production and sustainability across the food value chain, by empowering value chain participants with solutions that leverage advanced data systems and AI to streamline operations, improve food traceability, and provide consumers with fresher and healthier food.

4.3 Liquidity and capital resources

Capital structure financial policies

Our objective when managing financial capital is to maintain a flexible capital structure that optimizes the cost and availability of capital at acceptable risk.

In our definition of financial capital, we include Common equity (excluding Accumulated other comprehensive income), non-controlling interests, Long-term debt (including long-term credit facilities, commercial paper backstopped by long-term credit facilities and any hedging assets or liabilities associated with Long-term debt items, net of amounts recognized in Accumulated other comprehensive income), Cash and temporary investments, and Short-term borrowings, including those arising from securitized trade receivables.

We manage our financial capital structure and make adjustments to it in light of changes in economic conditions and the risk characteristics of our business. In order to maintain or adjust our financial capital structure, we may adjust the amount of dividends paid to holders of Common Shares, purchase Common Shares for cancellation pursuant to normal course issuer bid (NCIB) programs, issue new shares (including Common Shares and TELUS International Subordinate Voting Shares), issue new debt, issue new debt to replace existing debt with different characteristics, and/or increase or decrease the amount of trade receivables sold to an arm's-length securitization trust.

We monitor financial capital utilizing a number of measures, including our net debt to EBITDA – excluding restructuring and other costs ratio, coverage ratios and dividend payout ratios. (See definitions in *Section 11.1 Non-GAAP and other specified financial measures*.)

Financing and capital structure management plans

Report on financing and capital structure management plans

Pay dividends to the holders of the common shares of TELUS Corporation (Common Shares) under our multi-year dividend growth program

- In May 2022, we announced our intention to target ongoing semi-annual dividend increases, with the annual increase in the range of 7 to 10% from 2023 through to the end of 2025, thereby extending the policy first announced in May 2011. Notwithstanding this target, dividend decisions will continue to be subject to our Board's assessment and the determination of our financial position and outlook on a quarterly basis. Our long-term Common Share dividend payout ratio guideline is 60 to 75% of free cash flow on a prospective basis. (See *Section 7.5 Liquidity and capital resource measures*.) There can be no assurance that we will maintain a dividend growth program or that it will be unchanged through 2025. (See *Caution regarding forward-looking statements – Lower than planned free cash flow could constrain our ability to invest in operations, reduce leverage or return capital to shareholders, and could affect our ability to sustain our dividend growth program through 2025 and any further dividend growth programs* and *Section 10.14 Financing, debt and dividends*.)
- Dividends declared in 2022 totalled $1.3557 per share, an increase of $0.0847 per share or 6.7% compared to the dividends declared in 2021. On February 8, 2023, the Board elected to declare a first quarter dividend of $0.3511 per share, payable on April 3, 2023, to shareholders of record at the close of business on March 10, 2023. The first quarter dividend for 2023 reflects a cumulative increase of $0.0237 per share or 7.2% from the $0.3274 per share dividend declared one year earlier.
- Our dividend reinvestment and share purchase (DRISP) plan trustee acquired shares from Treasury for the DRISP plan, rather than acquiring Common Shares in the stock market. We may, at our discretion, offer Common Shares at a discount of up to 5% from the market price under the DRISP. Effective with the dividends paid beginning on October 1, 2019, we offered Common Shares from Treasury at a discount of 2%. During 2022, our DRISP plan trustee acquired from Treasury approximately 23 million dividend reinvestment Common Shares for $658 million. For the dividends paid on January 3, 2023, the DRISP participation rate, calculated as the DRISP investment of $185 million (including the employee share purchase plan) as a percentage of gross dividends, was approximately 37%.
- TELUS International currently intends to retain all available funds and any future earnings to support operations and to finance the growth and development of its business.

Purchase Common Shares

- In June 2022, we received approval from the Toronto Stock Exchange (TSX) for a new NCIB program (2022 NCIB) to purchase and cancel up to 10 million Common Shares for an aggregate purchase price of up to $250 million over a 12-month period, from June 6, 2022, to June 5, 2023, through the facilities of the TSX, the New York Stock Exchange and alternative Canadian trading systems or as otherwise permitted by applicable securities laws. TELUS will purchase Common Shares only when and if we consider it opportunistic, subject to any purchases that may be made under automatic share purchase plans (ASPP). As of February 9, 2023, we have not completed any transactions pursuant to our 2022 NCIB.
- We may also enter into an ASPP with a broker for the purpose of permitting us to purchase our Common Shares under our NCIB at times when we would not be permitted to trade in our shares, including regularly scheduled quarterly blackout periods. Such purchases will be determined by the broker in its sole discretion based on parameters that we have established prior to any blackout period, in accordance with TSX rules and applicable securities laws.

Use proceeds from securitized trade receivables (Short-term borrowings), bank facilities and commercial paper as needed, to supplement free cash flow and meet other cash requirements

- Our issued and outstanding commercial paper was $1.5 billion at December 31, 2022, all of which was denominated in U.S. dollars (US$1.1 billion), compared to $1.9 billion (US$1.5 billion) at December 31, 2021.
- Net draws due to a syndicate of financial institutions (excluding TELUS Corporation) on the TI credit facility were US$689 million at December 31, 2022, compared to US$854 million at December 31, 2021. The TI credit facility is non-recourse to TELUS Corporation. Concurrent with the acquisition of WillowTree, as set out in *Note 18(d)* of the Consolidated financial statements, TI drew down US$363 million and US$600 million of its available credit facility revolving components and term loan components, respectively.
- Proceeds from securitized trade receivables were $100 million at December 31, 2022, unchanged from December 31, 2021.

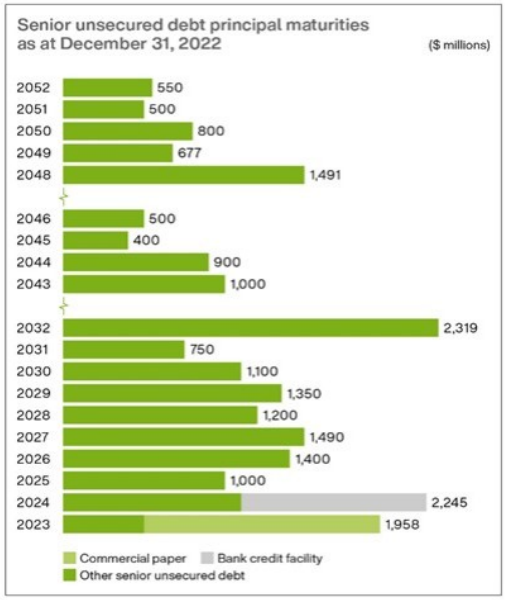
Maintain compliance with financial objectives

- Maintain investment-grade credit ratings – On February 9, 2023, investment-grade credit ratings from the four rating agencies that cover TELUS were in the desired range. (See *Section 7.8 Credit ratings*.)
- Net debt to EBITDA – excluding restructuring and other costs ratio of 2.20 to 2.70 times – As measured at December 31, 2022, this ratio was 3.63 times, outside of the objective range, primarily due to the acquisition of spectrum licences as spectrum is our largest indefinite life asset, the net effect of business dispositions and business acquisitions, which increased the ratio, and the impacts of the COVID-19 pandemic. Given the cash demands of the 2019 600 MHz, the 2021 3500 MHz and upcoming spectrum auctions, as well as the inability to predict impacts of the COVID-19 pandemic, the assessment of the guideline and timing of return to the objective range remains to be determined; however, it is our intent to return to a ratio below 2.70 times in the medium term (following the spectrum auction in 2021, and the spectrum auctions upcoming in 2023 and 2024), consistent with our long-term strategy. (See *Section 7.5 Liquidity and capital resource measures*.)
- Common Share dividend payout ratio of 60 to 75% of free cash flow on a prospective basis – Our objective range is on a prospective basis. The Common Share dividend payout ratio[1] we present in this MD&A is a historical measure utilizing the dividends declared in the most recent four quarters, net of dividend reinvestment plan effects, and free cash flow, and is disclosed for illustrative purposes in evaluating our target guideline. As at December 31, 2022, the ratio was 95%, outside of the objective range, primarily due to: (i) our planned accelerated capital expenditures program to support our broadband capital investments, the build-out of our TELUS PureFibre infrastructure and the acceleration of our 5G network roll-out; and (ii) the reduction in EBITDA caused by the pandemic. Excluding the effects of our accelerated capital expenditures program of $823 million for the most recent four quarters, as at December 31, 2022, the ratio was 61%. (See *Section 7.5 Liquidity and capital resource measures* .)
- Generally maintain a minimum of $1 billion in available liquidity – As at December 31, 2022, our available liquidity [1] was approximately $2.8 billion. (See *Section 7.6 Credit facilities* and *Liquidity risk* in *Section 7.9*.)

1 These are non-GAAP and other specified financial measures. See *Section 11.1 Non-GAAP and other specified financial measures*.

Financing and capital structure management plans for 2023

At the end of 2022, our senior unsecured debt (excluding unamortized discount) was $21.6 billion. For our long-term debt, the weighted average term to maturity was approximately 12.1 years (excluding commercial paper, TELUS bank credit facilities, the revolving components of the TI credit facility, lease liabilities and other long-term debt). Our weighted average interest rate on long-term debt (excluding commercial paper, TELUS bank credit facilities, the revolving components of the TI credit facility, lease liabilities and other long-term debt) was 4.03% at December 31, 2022, up from 3.72% one year ago. Aside from Short-term borrowings of $100 million, commercial paper of $1.5 billion (US$1.1 billion), the $1.1 billion bank credit facility, of which $1.1 billion was drawn at December 31, 2022 (see *Section 7.6* for further details), the utilized revolving component of the TI credit facility (excluding TELUS Corporation) of $179 million (US$132 million) and lease liabilities of $2.3 billion, all of our debt was on a fixed-rate basis.



During 2023, we may issue notes to fund spectrum purchases, to accelerate future debt reduction by prepaying certain notes, to refinance maturing debt or to use for general corporate purposes. Anticipated free cash flow and sources of capital are expected to be more than sufficient to meet requirements. For the related risk discussion, see *Section 10.14 Financing, debt and dividends.*

4.4 Disclosure controls and procedures, changes in internal control over financial reporting and limitations on scope of design

Disclosure controls and procedures

Disclosure controls and procedures are designed to provide reasonable assurance that all relevant information is gathered and reported to senior management, including the President and Chief Executive Officer (CEO) and the Executive Vice-President and Chief Financial Officer (CFO), on a timely basis so that appropriate decisions can be made regarding public disclosure.

The CEO and the CFO have assessed the effectiveness of our disclosure controls and procedures related to the preparation of this MD&A and the December 31, 2022, Consolidated financial statements. They have concluded that our disclosure controls and procedures were effective, at a level of reasonable assurance, in ensuring that material information relating to TELUS and its consolidated subsidiaries would be made known to them by others within those entities, particularly during the period in which the MD&A and the Consolidated financial statements were being prepared.

Internal control over financial reporting

Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with IFRS-IASB and the requirements of the Securities and Exchange Commission in the United States, as applicable. TELUS' CEO and CFO have assessed the effectiveness of our internal control over financial reporting as of December 31, 2022, in accordance with the criteria established in *Internal Control – Integrated Framework (2013)*, issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, TELUS' CEO and CFO have concluded that our internal control over financial reporting is effective as of December 31, 2022, and have certified TELUS' annual filings within our annual report on Form 40-F, as required by the United States' *Sarbanes-Oxley Act of 2002*, and TELUS' Annual Information Form, as required by National Instrument 52-109 *Certification of Disclosure in Issuers' Annual and Interim Filings* .

Deloitte LLP, our auditor, has audited our internal control over financial reporting as of December 31, 2022.

Changes in internal control over financial reporting

There were no changes in internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting in 2022.

Limitations on scope of design

In our assessment of the scope of disclosure controls and procedures and internal control over financial reporting, we have excluded the controls, policies and procedures of LifeWorks, which was acquired on September 1, 2022, the operating results of which are included in the Consolidated financial statements from the acquisition date. The scope limitation is in accordance with National Instrument 52-109 *Certification of Disclosure in Issuers' Annual and Interim Filings* , which allows an issuer to limit its design of internal controls over financial reporting and disclosure controls and procedures to exclude the controls, policies and procedures of a company acquired not more than 365 days before the end of the financial period to which the certificate relates.

From September 1, 2022 (the acquisition date) to December 31, 2022, LifeWorks has contributed revenues of $350 million and generated net loss of $5 million. As at December 31, 2022, LifeWorks' current assets and current liabilities represented approximately 5% and 11% of TELUS' consolidated current assets and current liabilities, respectively, while LifeWorks' non-current assets and non-current liabilities represented approximately 7% and 6% of TELUS' consolidated non-current assets and non-current liabilities, respectively. The amounts recognized for the assets acquired and liabilities assumed as at the acquisition date are described in *Note 18* of the Consolidated financial statements.

5. Discussion of operations

This section contains forward-looking statements, including those with respect to mobile phone average revenue per subscriber per month (ARPU) growth, products and services trends regarding loading and retention spending, equipment margins, subscriber growth and various future trends. There can be no assurance that we have accurately identified these trends based on past results or that these trends will continue, in particular given uncertainty with regard to the COVID-19 pandemic and associated economic impacts. See *Caution regarding forward-looking statements* at the beginning of this MD&A.

5.1 General

Operating segments are components of an entity that engage in business activities from which they earn revenues and incur expenses (including revenues and expenses related to transactions with the other component(s)), the operations of which can be clearly distinguished and for which the operating results, and in particular, Adjusted EBITDA, are regularly reviewed by a chief operating decision-maker to make resource allocation decisions and to assess performance. Effective September 1, 2022, we embarked upon the modification of our internal and external reporting processes, systems and internal controls concurrent with the acquisition and integration of LifeWorks, as referenced in *Note 18(b)* of the Consolidated financial statements, and correspondingly are assessing our segmented reporting structure. Segmented information in *Note 5* of the Consolidated financial statements is regularly reported to our CEO (our chief operating decision-maker).

The TELUS technology solutions (TTech) segment includes: network revenues and equipment sales arising from mobile technologies; data revenues (which include internet protocol; television; hosting, managed information technology and cloud-based services; and home and business security); healthcare software and technology solutions (including employee and family assistance programs and benefits administration); agriculture and consumer goods services (software, data management and data analytics-driven smart food-chain and consumer goods technologies); voice and other telecommunications services revenues; and equipment sales.

The digitally-led customer experiences – TELUS International (DLCX) segment, which has the U.S. dollar as its primary functional currency, is comprised of digital customer experience and digital-enablement transformation solutions, including artificial intelligence (AI) and content management, provided by TELUS International.

Selected annual information

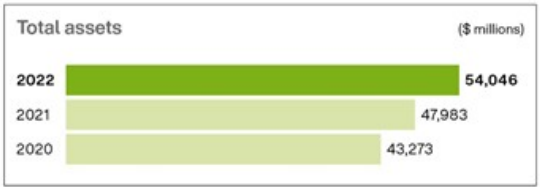
Years ended December 31 ($ in millions, except per share amounts)	**2022**	2021	2020
Operating revenues and other income	**18,412**	17,258	15,463
Net income	**1,718**	1,698	1,260
Net income attributable to TELUS Corporation Common Shares (Common Shares)	**1,615**	1,655	1,207
Net income per Common Share			
Basic earnings per share (EPS)	**1.16**	1.23	0.95
Diluted EPS	**1.15**	1.22	0.94
Dividends declared per Common Share	**1.3557**	1.2710	1.18495

At December 31 ($ millions)	**2022**	2021	2020
Total assets	**54,046**	47,983	43,273
Current maturities of long-term debt	**2,541**	2,927	1,432
Non-current financial liabilities[1]			
Provisions	**201**	51	54
Long-term debt	**22,496**	17,925	18,856
Other long-term financial liabilities	**161**	181	236
Total non-current financial liabilities	**22,858**	18,157	19,146
Deferred income taxes	**4,437**	4,045	3,718
Common equity	**16,569**	15,116	12,040

1 In our specific current instance, financial liabilities do not include liabilities that are excluded by definition (e.g. employee benefits and share-based compensation liabilities) or liabilities that do not involve a future outlay of economic resources (e.g. deferred recognition of customer activation and connection fees; deferred gains on sale-leaseback of buildings).

Operating revenues and other income: Consolidated Operating revenues and other income increased by $1,154 million in 2022 and $1,795 million in 2021. These increases were largely attributable to increased health services revenues, higher mobile and fixed data service revenues, greater agriculture and consumer goods revenues, and growth in DLCX operating revenues.

Total assets: Growth in Total assets includes increases in Property, plant and equipment and Intangible assets, which increased by a combined $2,851 million in 2022 and $3,349 million in 2021. These increases resulted primarily from business acquisitions, our ongoing investments in broadband infrastructure, connecting additional homes and businesses directly to our fibre-optic technology and accelerating our 5G network build. See *Section 7.3 Cash provided by investing activities*.



For changes in **Long-term debt**, see *Section 6 Changes in financial position* and *Section 7.4 Cash provided by financing activities*.

5.2 Summary of consolidated quarterly results, trends and fourth quarter recap

Summary of quarterly results

($ millions, except per share amounts)	2022 Q4	2022 Q3	2022 Q2	2022 Q1	2021 Q4	2021 Q3	2021 Q2	2021 Q1
Operating revenues and other income[1]	**5,058**	**4,671**	**4,401**	**4,282**	4,872	4,251	4,111	4,024
Operating expenses								
Goods and services purchased[2]	**2,082**	**1,794**	**1,637**	**1,594**	1,882	1,660	1,609	1,548
Employee benefits expense[2]	**1,378**	**1,231**	**1,171**	**1,119**	1,108	1,095	1,051	1,015
Depreciation and amortization	**929**	**850**	**831**	**842**	830	804	793	789
Total operating expenses	**4,389**	**3,875**	**3,639**	**3,555**	3,820	3,559	3,453	3,352
Operating income	**669**	**796**	**762**	**727**	1,052	692	658	672
Financing costs before long-term debt prepayment premium	**322**	**34**	**97**	**179**	192	184	203	207
Long-term debt prepayment premium	**—**	**—**	**—**	**—**	—	10	—	—
Income before income taxes	**347**	**762**	**665**	**548**	860	498	455	465
Income taxes	**82**	**211**	**167**	**144**	197	140	111	132
Net income	**265**	**551**	**498**	**404**	663	358	344	333
Net income attributable to Common Shares	**248**	**514**	**468**	**385**	644	345	335	331
Net income per Common Share:								
Basic EPS	**0.17**	**0.37**	**0.34**	**0.28**	0.47	0.25	0.25	0.25
Adjusted basic EPS[3]	**0.23**	**0.34**	**0.32**	**0.30**	0.23	0.29	0.26	0.27
Diluted EPS	**0.17**	**0.37**	**0.34**	**0.28**	0.47	0.25	0.25	0.25
Dividends declared per Common Share	**0.3511**	**0.3386**	**0.3386**	**0.3274**	0.3274	0.3162	0.3162	0.3112
Additional information:								
EBITDA	**1,598**	**1,646**	**1,593**	**1,569**	1,882	1,496	1,451	1,461
Restructuring and other costs	**94**	**78**	**29**	**39**	44	63	38	41
Other equity (income) losses related to real estate joint ventures	**(3)**	**—**	**—**	**—**	1	—	1	1
Gain on disposition of financial solutions business	**—**	**—**	**—**	**—**	410	—	—	—
Adjusted EBITDA	**1,689**	**1,724**	**1,622**	**1,608**	1,517	1,559	1,490	1,503
Cash provided by operating activities	**1,126**	**1,300**	**1,250**	**1,135**	896	1,309	1,244	939
Free cash flow	**323**	**331**	**205**	**415**	43	203	210	321

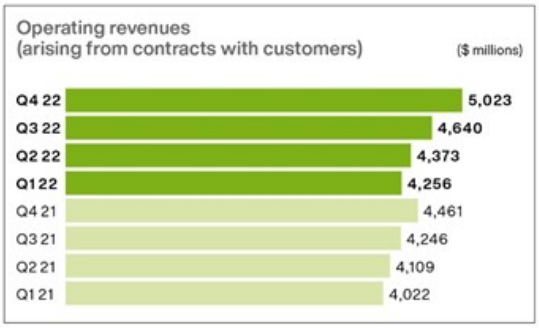
1 In the fourth quarter of 2021, we recorded a gain on disposition of our financial solutions business of $410 million.
2 Goods and services purchased and Employee benefits expense amounts include restructuring and other costs.
3 See *Section 11.1 Non-GAAP and other specified financial measures*.

Trends

COVID-19 was characterized as a pandemic in March 2020 and has had significant impacts on our business. The pandemic prevents us, our customers and our suppliers from operating in traditional manners of business in certain areas. While we expect the pandemic to continue to affect our operations and we expect it to continue to do so for at least the first quarter of 2023 and possibly thereafter, we have adapted, and continue to adapt, to future modes of operating.

The trend of year-over-year increases in consolidated revenue reflects TTech growth, including: (i) mobile network revenue generated from an increase in our subscriber base, including growth of Internet of Things (IoT) connections, supported by the progressive recovery of roaming revenues from COVID-19 impacts; (ii) fixed data services growth across consumer and business lines in internet revenues, TV revenues, home and business security revenues, and other advanced application offerings; (iii) health revenues, including collaborative health records, pharmacy management and virtual pharmacy solutions and our virtual care solutions, as well as employee and family assistance programs and benefits administration following our acquisition of LifeWorks Inc. (LifeWorks) in the third quarter of 2022; and (iv) agriculture and consumer goods services growth driven by business acquisitions and our digital solutions and data analytics. Increasing consolidated revenue has been partly offset by declining equipment revenue attributed to lower volumes of new contracts from the improving durability of devices, growing adoption of device financing arrangements and suppressed handset contract volumes. Consolidated revenue has also been affected by other pandemic impacts, such as the temporary closure of our TELUS Health Care Centres in 2020, which began operating at reduced volume in 2021 and the early part of 2022, a reduction in health benefits management claims resulting from reduced activity, and business customers faced with reduced and/or closed operations. Consolidated revenue would also be impacted by inflationary pressures and monetary policy. Increased internet and data services and TV service revenues are being generated by subscriber growth and higher internet revenue per customer. There has also been increased customer adoption of our home and business security services and we have been successfully bundling mobility and home services. Other income in the fourth quarter of 2021 included a gain of $410 million on disposition of our financial solutions business. For additional information on mobile and fixed revenue and subscriber trends, see *Section 5.4 TELUS technology solutions segment*. LifeWorks has not had a material impact on trends over the past eight quarters, as it was acquired on September 1, 2022.

Year-over-year increases in consolidated revenue also reflect growth in DLCX revenue from a combination of organic external customer growth and business acquisitions.



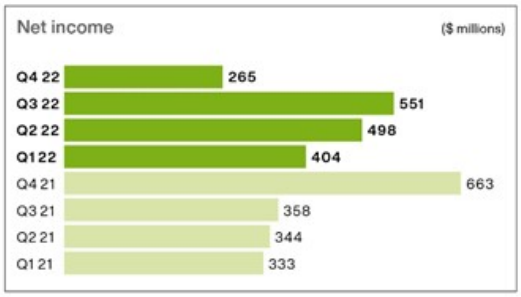
The trend of year-over-year increases in Goods and services purchased reflects increased expenses to support growth in our DLCX business, our subscriber base and business acquisitions; increased fixed data product costs of sales associated with a growing subscriber base; experienced and anticipated higher operating costs associated with growth related to scaling our health offerings, agriculture and consumer goods services and digital capabilities; and inflationary pressures. TELUS International AI Data Solutions (TIAI) utilizes contracted labour in servicing its customers as compared to solely utilizing employees, and these contracted services have contributed to year-over-year increases in Goods and services purchased.

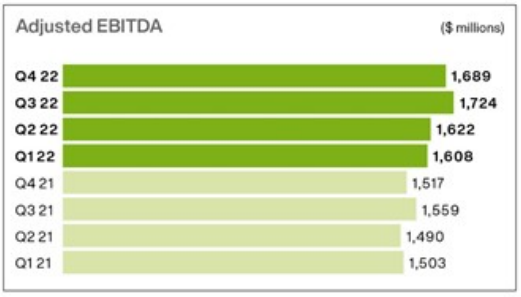
The trend of year-over-year increases in net Employee benefits expense reflects increases in the number of employees related to business acquisitions, including those supporting revenue growth in our DLCX segment, health offerings, agriculture and consumer goods offerings and our other complementary businesses. This has been partly offset by moderating salaries expense resulting from reductions in the number of full-time equivalent (FTE) domestic employees, excluding business acquisitions, related in part to absorbed vacancies as we continued to digitize our customer service. We experienced year-over-year increases in net Employee benefits expense in 2022 related to merit-based compensation increases, including an April 2022 compensation program increase.

The trend of year-over-year increases in Depreciation and amortization reflects increases related to capital assets acquired in business acquisitions; growth in capital assets in support of the expansion of our broadband footprint, including our generational investment to connect homes and businesses to TELUS PureFibre and 5G technology coverage; and growth in internet, TV and security subscriber loading. The investments in our fibre-optic technology also support our technology strategy to improve coverage and capacity, including the ongoing build-out of our 5G network.

The trend of general year-over-year increases in Financing costs reflects greater long-term debt outstanding, mainly associated with our investments in spectrum, fibre and mobile technology, as well as business acquisitions. Financing costs include a long-term debt prepayment premium of $10 million in the third quarter of 2021. Moreover, Financing costs are net of capitalized interest related to spectrum licences acquired during the 600 MHz spectrum auction, which we commenced deploying into our existing network in 2021, and during the 3500 MHz spectrum auction. Financing costs also include Interest accretion on provisions (asset retirement obligations and written put options) and Employee defined benefit plans net interest. Additionally, for the eight periods shown, Financing costs include varying amounts of foreign exchange gains or losses, varying amounts of interest income and, effective for the second quarter of 2022, virtual power purchase agreements unrealized change in forward element.

The trend in Net income reflects the items noted above, as well as adjustments recognized in the current periods for income taxes of prior periods. Historically, the trend in basic EPS has reflected trends in Net income. For further discussion of trends, see *Section 5.4 TELUS technology solutions segment* and *Section 5.5 Digitally-led customer experiences – TELUS International segment*.





Fourth quarter recap

Results for the fourth quarter of 2022 (three-month period ended December 31, 2022) are discussed in our February 9, 2023 news release and are compared with results from the fourth quarter of 2021 (three-month period ended December 31, 2021).

- Consolidated Operating revenues and other income were $5,058 million in the fourth quarter of 2021, an increase of $186 million.
  - Service revenues were $4,286 million in the fourth quarter of 2022, an increase of $481 million. TTech service revenue growth was driven by: (i) growth in health services revenues driven by business acquisitions, including our acquisition of LifeWorks on September 1, 2022, as well as organic growth; (ii) higher mobile network revenues, including growth in our mobile phone and connected devices subscriber bases, in addition to increased mobile phone ARPU; (iii) an increase in data service revenues, driven by business acquisitions, internet and security subscriber growth, higher revenue per internet customer and TV subscriber growth; and (iv) growth in agriculture and consumer goods services revenues. These factors were partly offset by: (i) continued declines in fixed legacy voice and data services revenues; and (ii) lower TV revenues due to an increased mix of customers selecting smaller TV combination packages and technological substitution. Growth in DLCX operating revenues resulted from expanded services for existing clients and growth from new clients. In DLCX, on a year-over-year basis, the favourable currency impact from the strengthening of the U.S. dollar against the Canadian dollar more than offset the strengthening of the U.S. dollar against the European euro, which had an unfavourable foreign currency impact on European euro-denominated operating results.
  - Equipment revenues were $737 million in the fourth quarter of 2022, an increase of $81 million, driven by higher mobile equipment revenues that reflected higher contract volumes attributable to successful efforts during the seasonal promotional periods and the impact of higher-value smartphones in the sales mix, as well as higher fixed equipment revenues from increased sales volumes and lower discounts on business and consumer premises equipment.

- Other income was $35 million in the fourth quarter of 2022, a decrease of $376 million, largely reflecting the non-recurrence of the $410 million gain on the disposition of our financial solutions business in the fourth quarter of 2021. Excluding the effect of this disposition, Other income increased by $34 million in the fourth quarter of 2022, reflecting a decrease in provisions arising from business acquisition-related written put options and higher gains on investments.

- Consolidated operating expenses were $4,389 million in the fourth quarter of 2022, an increase of $569 million.

  - Goods and services purchased were $2,082 million in the fourth quarter of 2022, an increase of $200 million, driven by: (i) higher costs associated with business acquisitions, as well as costs associated with scaling our health and agriculture and consumer goods businesses; (ii) higher mobile equipment sales expense resulting from higher mobile handset contract volumes, in addition to higher-value smartphones in the sales mix; (iii) DLCX business growth, which included higher contractor costs from expansion in TIAI and the strengthening of the U.S. dollar against the Canadian dollar on a year-over-year basis; (iv) higher non-labour-related restructuring costs; (v) higher product and service costs supporting growth across our subscriber connections, including TV subscribers; (vi) higher costs related to the scaling of our digital capabilities, inclusive of increased subscription-based licences; and (vii) bad debt expense returning to pre-pandemic levels, driven by macroeconomic pressures compared to the prior period, which saw historically low bad debt expense. These increases were partly offset by lower advertising and promotional costs.

  - Employee benefits expense was $1,378 million in the fourth quarter of 2022, an increase of $270 million, largely due to: (i) higher compensation and benefit costs resulting from an increase in the number of employees related to business acquisitions; (ii) merit-based compensation increases; and (iii) increased employee benefits expense in our DLCX segment, driven by business growth, and foreign exchange impacts caused by the strengthening of the U.S. dollar against the Canadian dollar more than offsetting other foreign currencies weakening against the U.S. dollar, partly mitigated by lower share-based compensation due to a decrease in the TI share price. These factors were partly offset by higher capitalized labour costs.

  - Depreciation was $589 million in the fourth quarter of 2022, an increase of $44 million, primarily due to growth in capital assets over the past 12 months, including our expanded broadband footprint and business acquisitions, as well as asset retirement activity, which generated accelerated depreciation on those assets.

  - Amortization of intangible assets was $340 million in the fourth quarter of 2022, an increase of $55 million, arising from business acquisitions and higher expenditures associated with the intangible asset base over the past 12 months.

  - Financing costs were $322 million in the fourth quarter of 2022, an increase of $130 million, mainly due to the following factors:

  - Interest expense was $265 million in the fourth quarter of 2022, an increase of $75 million, largely resulting from the change in gross interest expense on long-term debt, excluding lease liabilities. Gross interest expense on long-term debt, excluding lease liabilities, was $234 million in the fourth quarter of 2022, an increase of $66 million, primarily driven by an increase in average long-term debt balances outstanding, attributable in part to business acquisitions.

  - Virtual power purchase agreements unrealized change in forward element was an expense of $38 million in the fourth quarter of 2022, and represents the estimated unrealized amount recorded from our virtual power purchase agreements (VPPAs) with renewable energy projects as of December 31, 2022.

  - Foreign exchange losses were $23 million in the fourth quarter of 2022, a change of $26 million, primarily reflecting changes in the value of the European euro relative to the Canadian dollar, as well as the Canadian dollar relative to the U.S. dollar.

  - Income tax expense was $82 million in the fourth quarter of 2022, a decrease of $115 million. The effective tax rate increased from 22.9 to 23.5% in the fourth quarter of 2022, primarily due to the non-taxable portion of the gain on the disposition of our financial solutions business, which was partially offset by lower adjustments to prior period income taxes.

- EBITDA, which includes restructuring and other costs, other equity (income) losses related to real estate joint ventures and the gain on disposition of our financial solutions business, was $1,598 million in the fourth quarter of 2022, a decrease of $284 million.

- Adjusted EBITDA, which excludes restructuring and other costs, other equity (income) losses related to real estate joint ventures and the gain on disposition of our financial solutions business, was $1,689 million in the fourth quarter of 2022, an increase of $172 million or 11.3%. This reflects: (i) higher mobile network revenues, including growth in our mobile phone and connected devices subscriber bases, in addition to ARPU growth; (ii) increased fixed data services revenues driven by business acquisitions, internet and security subscriber growth, higher revenue per internet customer and TV subscriber growth; (iii) contribution from our acquisition of LifeWorks on September 1, 2022; (iv) an increase in our DLCX segment contribution; and (v) higher other income, excluding our prior year gain on sale of our financial solutions business. These factors were partly offset by: (i) higher employee benefits expense; (ii) higher costs related to the scaling of our digital capabilities, inclusive of increased subscription-based licences; (iii) continued declines in fixed legacy voice and data services revenues; (iv) lower TV margins due to rising content costs, an increased mix of customers selecting smaller TV combination packages and technological substitution; and (v) bad debt expense returning to pre-pandemic levels.

- Net income attributable to Common Shares was $248 million in the fourth quarter of 2022, a decrease of $396 million, reflecting the after-tax impacts of lower Operating income and higher Financing costs. Adjusted Net income excludes the effects of restructuring and other costs, income tax-related adjustments, other equity (income) losses related to real estate joint ventures, virtual power purchase agreements unrealized change in forward element, and the gain on disposition of our financial solutions business. Adjusted Net income in the fourth quarter of 2022 was $333 million, an increase of $2 million or 0.6%.

- Basic EPS was $0.17 in the fourth quarter of 2022, a decrease of $0.30, reflecting the after-tax impacts of lower Operating income and higher Financing costs, as well as the effect of a higher number of Common Shares outstanding. Adjusted basic EPS excludes the effects of restructuring and other costs, income tax-related adjustments, other equity (income) losses related to real estate joint ventures, virtual power purchase agreements unrealized change in forward element, and the gain on disposition of our financial solutions business. Adjusted basic EPS was $0.23 in the fourth quarter of 2022, unchanged compared to the fourth quarter of 2021.

- Cash provided by operating activities was $1,126 million in the fourth quarter of 2022, an increase of $230 million, largely driven by growth in Adjusted EBITDA and lower restructuring and other costs disbursements net of expense, related to improving our overall cost structure and operational efficiency.

- Cash used by investing activities was $854 million in the fourth quarter of 2022, a decrease of $1,135 million, largely attributable to the effect of the fourth quarter 2021 payments for the 3500 MHz spectrum licences acquired in the 2021 spectrum auction, partly offset by the effect of the proceeds on the 2021 disposition of our financial solutions business. Capital expenditures were $660 million in the fourth quarter of 2022, a decrease of $249 million. This decrease was driven by TTech, which experienced $239 million of the decrease, mainly due to a planned slowdown of fibre build consistent with our annual build target, compared to the acceleration of investments in 2021, as well as a reduction in the purchase of proprietary software licenses.

- Cash used by financing activities was $738 million in the fourth quarter of 2022, an increase of $690 million, primarily reflecting greater redemptions and repayment of long-term debt, net of issuances.

- Free cash flow was $323 million in the fourth quarter of 2022, an increase of $280 million, primarily reflecting the reduction in capital expenditures.

5.3 Consolidated operations

The following is a discussion of our consolidated financial performance. Segment information in *Note 5* of the Consolidated financial statements is regularly reported to our CEO. We discuss the performance of our segments in *Section 5.4 TELUS technology solutions segment* and *Section 5.5 Digitally-led customer experiences – TELUS International segment*.



Operating revenues

Years ended December 31 ($ in millions)	**2022**	2021	Change
Operating revenues			
Service	**15,956**	14,535	9.8 %
Equipment	**2,336**	2,303	1.4 %
Operating revenues (arising from contracts with customers)	**18,292**	16,838	8.6 %
Other income	**120**	420	(71.4)%
Operating revenues and other income	**18,412**	17,258	6.7 %

Consolidated Operating revenues and other income increased by $1,154 million in 2022. Excluding the effect of the disposition of our financial solutions business in 2021, consolidated Operating revenues and other income increased by $1,564 million in 2022.

- **Service revenues** increased by $1,421 million in 2022. TTech service revenue growth was driven by: (i) growth in health services revenues driven by business acquisitions, including our acquisition of LifeWorks on September 1, 2022, as well as organic growth; (ii) higher mobile network revenues, including growth in our mobile phone and connected devices subscriber bases, in addition to increased mobile phone ARPU; (iii) an increase in data service revenues, driven by internet and security subscriber growth, business acquisitions, higher revenue per internet customer and TV subscriber growth; and (iv) growth in agriculture and consumer goods services revenues driven by business acquisitions and organic contributions. These factors were partly offset by: (i) continued declines in fixed legacy voice and data services revenues; and (ii) lower TV revenues due to an increased mix of customers selecting smaller TV combination packages and technological substitution. Growth in DLCX operating revenues resulted from expanded services for existing clients and growth from new clients. The strengthening of the U.S. dollar against the European euro had an unfavourable foreign currency impact on our European euro-denominated operating results and more than offset the favourable currency impact from the strengthening of the U.S. dollar against the Canadian dollar.

- **Equipment revenues** increased by $33 million in 2022, driven by growth in fixed equipment revenues resulting from higher sales volumes, lower discounts on business and consumer premises equipment and higher-value smartphones in the sales mix. This was partly offset by lower mobile equipment revenues due to lower mobile handset contract volumes and a greater mix of bring-your-own-device customer additions.

- **Other income** decreased by $300 million in 2022, largely reflecting the non-recurrence of the $410 million gain on the disposition of our financial solutions business in the fourth quarter of 2021. Excluding the effect of this disposition, Other income increased by $110 million in 2022, reflecting the reversal of provisions for contingent consideration related to business acquisitions, decreases in provisions arising from business acquisition-related written put options, a gain on acquisition of control of LifeWorks and higher gains on investments.

Operating expenses

Years ended December 31 ($ in millions)	**2022**	2021	Change
Goods and services purchased	**7,107**	6,699	6.1 %
Employee benefits expense	**4,899**	4,269	14.8 %
Depreciation	**2,226**	2,126	4.7 %
Amortization of intangible assets	**1,226**	1,090	12.5 %
Operating expenses	**15,458**	14,184	9.0 %

Consolidated operating expenses increased by $1,274 million in 2022.

- **Goods and services purchased** increased by $408 million in 2022, driven by: (i) higher costs associated with business acquisitions, as well as costs associated with scaling our health and agriculture and consumer goods businesses; (ii) higher product and service costs supporting growth across our subscriber connections, including TV subscribers; (iii) DLCX business growth, which included higher contractor costs from expansion in TIAI and the strengthening of the U.S. dollar against the Canadian dollar; (iv) higher costs related to the scaling of our digital capabilities, inclusive of increased subscription-based licences; (v) higher-value smartphones in the sales mix; (vi) higher non-labour-related restructuring costs; (vii) bad debt expense returning to pre-pandemic levels; and (viii) higher roaming expense associated with an increase in roaming revenues from increased international travel volumes. These increases were partly offset by: (i) lower mobile equipment sales expense resulting from lower mobile handset contract volumes; (ii) lower commissions expense associated with an increase in the mix of digital sales and lower mobile handset upgrade volumes; and (iii) lower advertising and promotional costs.

- **Employee benefits expense** increased by $630 million in 2022, largely due to: (i) higher compensation and benefit costs resulting from an increase in the number of employees related to business acquisitions; (ii) merit-based compensation increases; and (iii) increased employee benefits expense in our DLCX segment, driven by business growth, and foreign exchange impacts caused by the strengthening of the U.S. dollar against the Canadian dollar more than offsetting other foreign currencies weakening against the U.S. dollar, partly mitigated by lower share-based compensation due to a decrease in the TI share price. These factors were partly offset by higher capitalized labour costs .

- **Depreciation** increased by $100 million in 2022, primarily due to growth in capital assets over the past 12 months, including our expanded broadband footprint and business acquisitions, as well as asset retirement activity, which generated accelerated depreciation on those assets.

- **Amortization of intangible assets** increased by $136 million in 2022, arising from business acquisitions and higher expenditures associated with the intangible asset base over the past 12 months.

Operating income

Years ended December 31 ($ in millions)	**2022**	2021	Change
TTech EBITDA[1] (see *Section 5.4*)	**5,697**	5,735	(0.6)%
DLCX EBITDA[1] (see *Section 5.5*)	**709**	555	27.7 %
EBITDA	**6,406**	6,290	1.9 %
Depreciation and amortization (discussed above)	**(3,452)**	(3,216)	7.3 %
Operating income (consolidated earnings before interest and income taxes (EBIT))	**2,954**	3,074	(3.9)%

1 See *Section 11.1 Non-GAAP and other specified financial measures* .

Operating income decreased by $120 million in 2022, while EBITDA increased by $116 million in 2022.

Adjusted EBITDA

Years ended December 31 ($ in millions)	**2022**	2021	Change
TTech Adjusted EBITDA[1] (see *Section 5.4*)	**5,874**	5,476	7.3 %
DLCX Adjusted EBITDA[1,2] (see *Section 5.5*)	**769**	593	29.5 %
Adjusted EBITDA	**6,643**	6,069	9.5 %

1 See *Section 11.1 Non-GAAP and other specified financial measures*.
2 For certain financial metrics, there are definitional differences between TELUS and TELUS International reporting. These differences largely arise from TELUS International adopting definitions consistent with practice in its industry.

Adjusted EBITDA increased by $574 million or 9.5% in 2022, reflecting: (i) higher mobile network revenues, including growth in our mobile phone and connected devices subscriber bases, in addition to ARPU growth; (ii) increased fixed data services revenues driven by internet and security subscriber growth, business acquisitions, and higher revenue per internet customer and TV subscriber growth; (iii) an increase in our DLCX segment contribution; (iv) higher other income, excluding our prior year gain on the sale of our financial solutions business; and (v) contribution from our acquisition of LifeWorks on September 1, 2022. These factors were partly offset by: (i) higher employee benefits expense; (ii) higher costs related to the scaling of our digital capabilities, inclusive of increased subscription-based licences; (iii) continued declines in fixed legacy voice and data services revenues; (iv) lower TV margins due to rising content costs, an increased mix of customers selecting smaller TV combination packages and technological substitution; and (v) bad debt expense returning to pre-pandemic levels.

Financing costs

Years ended December 31 ($ in millions)	**2022**	2021	Change
Interest on long-term debt, excluding lease liabilities – gross	**779**	683	14.1 %
Interest on long-term debt, excluding lease liabilities – capitalized	**(30)**	(3)	n/m
Interest on lease liabilities	**74**	66	12.1 %
Interest on short-term borrowings and other	**16**	15	6.7 %
Interest accretion on provisions	**20**	18	11.1 %
Long-term debt prepayment premium	**—**	10	(100.0)%
Interest expense	**859**	789	8.9 %
Employee defined benefit plans net interest	**8**	26	(69.2)%
Foreign exchange gains	**(25)**	(3)	n/m
Virtual power purchase agreements unrealized change in forward element	**(193)**	—	n/m
Interest income	**(17)**	(16)	6.3 %
Financing costs	**632**	796	(20.6)%

Financing costs decreased by $164 million in 2022, mainly due to the following factors:

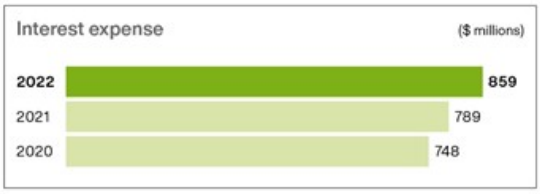
- **Interest expense** increased by $70 million in 2022, resulting from:
  - Gross interest expense on long-term debt, excluding lease liabilities, increased by $96 million in 2022, primarily driven by an increase in average long-term debt balances outstanding, attributable in part to business acquisitions. Our weighted average interest rate on long-term debt (excluding commercial paper, TELUS bank credit facilities, the revolving components of the TI credit facility, lease liabilities and other long-term debt) was 4.03% at December 31, 2022, compared to 3.72% one year earlier. (See *Long-term debt issued* and *Redemptions and repayments of long-term debt* in *Section 7.4*.)
  - Capitalized long-term debt interest, excluding lease liabilities, is in respect of debt incurred for the purchase of spectrum licences during the 3500 MHz spectrum auction held in June to July 2021 by Innovation, Science and Economic Development Canada (ISED).

- In the third quarter of 2021, we recorded a long-term debt prepayment premium of $10 million before income taxes related to the early redemption of all of our $1 billion Notes, Series CT.

- **Employee defined benefit plans net interest** decreased by $18 million in 2022, primarily due to the decrease in the defined benefit plan deficit as at December 31, 2021 to $190 million (net of the plan asset ceiling limit of $179 million), compared to the defined benefit plan deficit of $913 million (net of the plan asset ceiling limit of $123 million) one year earlier, partly offset by an increase in the discount rate.

- **Foreign exchange gains** changed by $22 million in 2022, primarily reflecting changes in the value of the Canadian dollar relative to the U.S. dollar, as well as the European euro relative to the Canadian dollar.

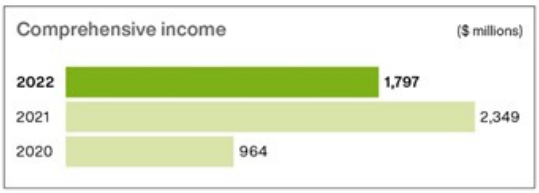
- **Virtual power purchase agreements unrealized change in forward element** represents the estimated unrealized amount recorded from our VPPAs with renewable energy projects as of December 31, 2022. We have entered into VPPAs with renewable energy projects that develop solar and wind power facilities as part of our commitment to reduce our carbon footprint.



Income taxes

Years ended December 31 ($ in millions, except tax rates)	**2022**	2021	Change
Income taxes computed at applicable statutory rates (%)	**25.6**	25.8	(0.2) pts.
Adjustments recognized in the current period for income taxes of prior periods (%)	**0.5**	(0.3)	0.8 pts.
Non-deductible amounts (%)	**0.1**	1.0	(0.9) pts.
Gain on disposition (%)	**—**	(2.0)	2.0 pts.
Other (%)	**(0.2)**	1.0	(1.2) pts.
Effective tax rate (%)	**26.0**	25.5	0.5 pts.
Income tax computed at applicable statutory rates	**595**	589	1.0 %
Adjustments recognized in the current period for income taxes of prior periods	**11**	(8)	n/m
Non-deductible amounts	**1**	23	(95.7)%
Gain on disposition	**—**	(46)	(100.0)%
Other	**(3)**	22	(113.6)%
Income taxes	**604**	580	4.1 %

Total income tax expense increased by $24 million in 2022. The effective tax rate increased from 25.5% to 26.0% in 2022, largely due to adjustments recognized in the current period for income taxes of prior periods.



Comprehensive income

Years ended December 31 ($ in millions)	**2022**	2021	Change
Net income	**1,718**	1,698	1.2 %
Other comprehensive income (net of income taxes):			
Items that may be subsequently reclassified to income	**(60)**	(6)	n/m
Items never subsequently reclassified to income	**139**	657	(78.8)%
Comprehensive income	**1,797**	2,349	(23.5)%

Comprehensive income decreased by $552 million in 2022, largely as a result of employee defined benefit plans re-measurement amounts in excess of the effect of limiting net defined benefit assets to the asset ceilings, as well as the change in the realized fair value of derivatives designated as cash flow hedges in excess of the change in the unrealized fair value, partly offset by the foreign currency translation adjustment arising from translating financial statements of foreign operations. Items that may subsequently be reclassified to income are composed of changes in the unrealized fair value of derivatives designated as cash flow hedges and foreign currency translation adjustments arising from translating financial statements of foreign operations. Items never subsequently reclassified to income are composed of employee defined benefit plans re-measurement amounts and changes in measurement of investment financial assets.

5.4 TELUS technology solutions segment

Mobile phone subscribers	**Connected device subscribers**	**Internet subscribers**	**TV subscribers**	**Security subscribers**	**Healthcare lives covered**
2022: 9,691,000	**2022: 2,468,000**	**2022: 2,413,000**	**2022: 1,325,000**	**2022: 978,000**	**2022: 67,700,000**
2021: 9,290,000	2021: 2,134,000	2021: 2,271,000	2021: 1,265,000	2021: 804,000	2021: 20,600,000
+ 4.3%	+ 15.7%	+ 6.3%	+ 4.7%	+ 21.6%	n/m

TTech trends and seasonality

Over the past eight quarters, the COVID-19 pandemic has impacted our business and we are not able to estimate its ultimate duration or the extent of its impact. The pandemic prevents us, our customers and our suppliers from operating in the normal course of business in certain areas, and we expect it to continue to affect our operations and we expect it to continue to do so for at least the first quarter of 2023 and possibly thereafter. For example, with the uncertainty surrounding COVID-19 variants, seasonal fluctuations in the spread of COVID-19, global population vaccine uptake, and government and land border restrictions, consumer and business travel volumes are uncertain, which impacts roaming revenues. As well, some of our business customers have been experiencing, and in some instances continue to experience, reduced and/or closed operations. Additionally, our health and wellness offerings have been impacted, as TELUS Health Care Centres operated at reduced volumes throughout 2021 and the early part of 2022. Impacts directly associated with the pandemic, such as the reduction of roaming revenues and health services (including TELUS Health Care Centres and health benefits management offerings) may be temporary in nature, and these services and related revenues may return to pre-pandemic levels. TTech revenue would also be impacted by inflationary pressures and monetary policy.

The historical trend over the past eight quarters in mobile network revenue primarily reflects growth in our mobile phone subscriber base, as well as an increase in IoT connections. Supplementing this, the trend of mobile phone ARPU growth is buttressed by the progressive recovery of international roaming revenues from pandemic impacts, which is also ameliorating domestic ARPU declines. Furthermore, overall domestic ARPU declines are largely attributable to changing industry dynamics, as customers have been able to gain access to higher network speeds and larger allotments of data for a given price point.

Mobile equipment revenue has been declining as a result of lower volumes of new contracts due to: (i) the improving durability and increasing cost of popular devices that result in customers deferring upgrades; (ii) growing adoption of device financing arrangements, which provide transparency of full device cost details and result in customers deferring device upgrades; and (iii) the effects of the pandemic on customers, the industry and the Canadian economy. These factors are offset by an increase of higher-value smartphones in the sales mix.

The general trend of year-over-year increases in mobile phone subscriber net additions is attributable to: (i) our low churn rate, which reflects our customers first efforts, upgrade volume programs and our focus on building, maintaining and enhancing our reliable, high-quality network; (ii) the success of our promotions, including the bundling of our mobility and home services; (iii) the effects of market growth arising from a growing population, changing population demographics and an increasing number of customers with multiple devices; and (iv) continuous improvements in the speed, performance and reliability of our network, as well as our enhanced digital capabilities. Additionally, the pandemic has caused customers to change their behaviour, for instance by reducing travel and making fewer visits to retail outlets, thereby reducing churn.

Our connected device subscriber base has been growing, primarily in response to our expanded IoT offerings. Our spectrum investments and capital expenditures on network improvements increase capacity, reliability and coverage, allowing us to grow revenue through net additions of new mobile phone and connected devices subscribers.

Growth in our internet subscriber base has been supported by our continued investments in building out our fibre-optic infrastructure, supplemented by our low customer churn rate. The total number of TV subscribers has increased (in contrast to market-reported declines in traditional television viewing habits), reflecting net subscriber additions in response to our diverse and flexible product offerings, combined with our low customer churn rate. Our security subscriber base growth is increasing as a result of organic growth and business acquisitions, including our acquisition of Vivint Smart Home, Inc. (Vivint) in the second quarter of 2022. Our home services growth is also attributable to the adoption of our bundling of home services, as well as the bundling of mobility and home services to meet the demand for multiple services per home. Adoption increases our services per home and positively impacts churn for most services, in addition to the effectiveness of our self-install and virtual install models. Residential voice subscriber losses have decelerated as a result of the success of our bundled services and lower-priced offerings, as well as strong retention efforts to mitigate the ongoing substitution to mobile and internet-based services.

The trend of growing fixed data services revenues is attributable to the sustained demand for faster internet speeds and larger bandwidth, as well as our diverse suite of TV, home and business security offerings and other advanced applications which are enabled by investments in our fibre-optic footprint. The trend of declining legacy fixed voice revenues is due to technological substitution and intensification of competition in the small and medium-sized business market; however, we are mitigating this trend with our bundled product offerings, lower-priced offerings and successful retention efforts. The migration of business product and service offerings to IP services and the entry of new competitors have yielded inherently lower margins compared to some legacy business product and service offerings; however, we are continually refining and diversifying our portfolio of innovative business offerings.

The trend of growth in health services revenues has been propelled by the acquisition of LifeWorks in the third quarter of 2022, as well as our organic health offerings, which include: virtual care and virtual pharmacy solutions, collaborative health records, health benefits management, personal health monitoring solutions, and employee and family assistance programs and benefits administration. The LifeWorks acquisition immediately enabled the opportunity for health services to operate and grow internationally through long-standing corporate relationships globally, with notable areas of focus in employee health and wellness programs, mental and physical health solutions, pensions and benefits management, and retirement solutions. Inclusive of LifeWorks, we are well-positioned to continue improving health and wellness outcomes for people around the world. Our competencies and assets in health, combined with the trend in digitization and automation, position us well to bolster the global healthcare system in a complementary fashion. With our technology heritage, we see the trend moving the healthcare system to improved efficiency and outcomes through better insights. We also believe Canadians will have greater control of their healthcare outcomes through the integration of disparate data (better flow of information across the system) and consent-based management. While the pandemic disrupted the operations of our TELUS Health Care Centres throughout 2021 and the early part of 2022, our diversified virtual care offerings continued to grow to meet the healthcare needs of Canadians and drive better health outcomes, including the accelerated adoption of virtual consultations, as reflected in the growing number of virtual care members. Our health benefits management solution is affected by the number of lives covered and the number of benefit claims, which were disrupted by the pandemic.

The trend of growth in agriculture and consumer goods services is attributable to business acquisitions, as well as an expansion of our solutions and organic growth in an effort to meet the growing demand for digital solutions in the agriculture industry. Through our global team and cloud-based solutions, we are able to service our diverse client base, including growers, producers, agronomists, advisors, processors and retailers, by helping to drive more effective and agile decision-making that will address changing consumer demands, improve profitability and generate a better flow of information across the value chain. This improves the safety and sustainability of our food system, as well as the way other goods are produced, distributed and consumed.

TTech operating indicators

At December 31	**2022**	2021	Change
Subscriber connections (thousands):			
Mobile phone	**9,691**	9,290	4.3 %
Connected device[1]	**2,468**	2,134	15.7 %
Internet	**2,413**	2,271	6.3 %
TV	**1,325**	1,265	4.7 %
Residential voice	**1,096**	1,123	(2.4)%
Security[2]	**978**	804	21.6 %
Total telecom subscriber connections	**17,971**	16,887	6.4 %
LTE population coverage[3] (millions)	**37.0**	37.0	— %
5G population coverage[3] (millions)	**30.8**	26.2	17.6 %

Years ended December 31	**2022**	2021	Change
Mobile phone gross additions (thousands):	**1,475**	1,353	9.0 %
Subscriber connection net additions (losses) (thousands):			
Mobile phone	**401**	367	9.3 %
Connected device	**368**	338	8.9 %
Internet	**142**	149	(4.7)%
TV	**60**	50	20.0 %
Residential voice	**(27)**	(41)	34.1 %
Security	**99**	97	2.1 %
Total telecom subscriber connection net additions	**1,043**	960	8.6 %
Mobile phone ARPU, per month[4] ($)	**58.10**	57.07	1.8 %
Mobile phone churn, per month[5] (%)	**0.95**	0.91	0.04 pts.

Health services (millions)

At December 31	**2022**	2021	Change
Healthcare lives covered[6]	**67.7**	20.6	n/m
Virtual care members	**4.5**	2.8	60.7 %

Years ended December 31	**2022**	2021	Change
Digital health transactions	**580.5**	551.1	5.3 %

1 Effective January 1, 2022, on a prospective basis, following an in-depth review of our definition of a subscriber, we adjusted our connected devices subscriber base to remove 34,000 subscribers within a legacy reporting system.
2 During the second quarter of 2022, we adjusted our cumulative security subscriber connections to add approximately 75,000 subscribers as a result of a business acquisition.
3 Including network access agreements with other Canadian carriers.
4 This is an other specified financial measure. See *Section 11.1 Non-GAAP and other specified financial measures*. This is an industry measure useful in assessing operating performance of a mobile products and services company, but is not a measure defined under IFRS-IASB.
5 See *Section 11.2 Operating indicators*.
6 During the third quarter of 2022, we added 36.9 million healthcare lives covered as a result of the LifeWorks acquisition.

- **Mobile phone gross additions** were 1,475,000 in 2022, an increase of 122,000, driven by higher levels of retail traffic as pandemic-related restrictions had lessened when compared to the prior year; successful promotions, particularly during the competitively heightened seasonal periods; expanded channels, including leveraging Mobile Klinik as a channel for our certified pre-owned device inventory; and the enhanced capabilities of our digital footprint, inclusive of increased self-serve functions.

- Our **mobile phone churn rate** was 0.95% in 2022, compared to 0.91% in 2021, remaining relatively low, reflecting the success of our continued focus on customer retention through promotions and bundled offerings, partly offset by heightened competitive intensity during the seasonal promotional periods, as well as higher levels of retail traffic as pandemic-related restrictions had lessened when compared to the prior year, in addition to increased travel-related prepaid deactivations.

- **Mobile phone net additions** were 401,000 in 2022, an increase of 34,000, driven by higher mobile phone gross additions, partly offset by higher mobile phone churn, as described above. We continue to focus on profitable growth and away from lower economic loading in the mobile phone market, while continuing to focus on executing customers first initiatives and retention programs, and our leading network quality.

- **Mobile phone ARPU** was $58.10 in 2022, an increase of $1.03 or 1.8%, largely due to roaming improvements as a result of increased international travel volumes. Roaming improvements were partially offset by: (i) lower overage revenues as customers continue to adopt larger or unlimited data and voice allotments in their rate plans; (ii) the impact of the competitive environment putting pressure on base rate plan prices in the current and prior periods; and (iii) a greater uptake of family discounts and bundling credits we offer to our customers, which helps us drive lower churn and greater lifetime value across our mobile and fixed products and services.

- **Connected device net additions** were 368,000 in 2022, an increase of 30,000, attributable to successful promotions of consumer and non-IoT connected devices during the seasonal promotional periods. Overall, connected devices net additions are driven by our IoT connections.

- **Internet net additions** were 142,000 in 2022, a decrease of 7,000, reflecting a modestly higher churn rate compared to relatively low churn rates during heightened pandemic restrictions in the prior year, in addition to the impact of macroeconomic pressures on consumer purchasing decisions. These factors were partly offset by our success in driving strong gross additions through bundled product offerings.

- **TV net additions** were 60,000 in 2022, an increase of 10,000, mainly attributable to our diverse offerings and strong loading in the business market, partly offset by a modestly higher churn rate due to the factors discussed above for internet.

- **Residential voice net losses** were 27,000 in 2022, compared to net losses of 41,000 in 2021. The residential voice subscriber losses continue to reflect the trend of substitution to mobile and internet-based services, largely mitigated by our expanding fibre footprint and bundled product offerings, as well as our strong retention efforts, including lower-priced offerings.

- **Security net additions** were 99,000 in 2022, an increase of 2,000, reflecting strong growth in new connections driven by demand for our bundled product offerings and diverse suite of products and services, partly offset by a modestly higher churn rate due to the factors discussed above for internet. Our continued focus on connecting more homes and businesses directly to fibre, expanding and enhancing our addressable high-speed internet and Optik TV footprint, and bundling these services together, contributed to combined internet, TV and security subscriber growth of 376,000 over the past 12 months, including the addition of 75,000 customers from our second quarter 2022 acquisition of Vivint.

- **Healthcare lives covered** were 67.7 million as of the end of 2022, an increase of 47.1 million over the past 12 months, mainly due to the addition of 36.9 million lives covered from our third quarter acquisition of LifeWorks, as well as healthy post-acquisition growth from population increases across all of our regions. Organically, lives covered also increased due to continued demand for virtual solutions, an increase in coverage related to elective health services, and an increase in value-added services, including vaccination solutions.

- **Virtual care members** were 4.5 million as of the end of 2022, an increase of 1.7 million over the past 12 months, attributable to the continued adoption of virtual solutions that keep Canadians and others safely connected to health and wellness care.

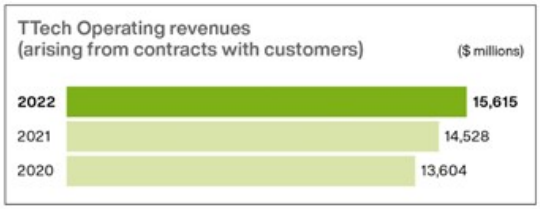
- **Digital health transactions** were 580.5 million in 2022, an increase of 29.4 million, largely driven by higher adjudication transactions, as plan members continue to increase their use of elective health services with pandemic restrictions easing, as well as an increase in healthcare lives covered.

Operating revenues and other income – TTech segment

Years ended December 31 ($ in millions)	**2022**	2021	Change
Mobile network revenue	**6,591**	6,208	6.2 %
Mobile equipment and other service revenues	**2,132**	2,124	0.4 %
Fixed data services[1]	**4,351**	4,135	5.2 %
Fixed voice services	**793**	843	(5.9)%
Fixed equipment and other service revenues	**481**	411	17.0 %
Health services	**913**	521	75.2 %
Agriculture and consumer goods services	**354**	286	23.8 %
Operating revenues (arising from contracts with customers)	**15,615**	14,528	7.5 %
Other income[2]	**120**	420	(71.4)%
External Operating revenues and other income [2]	**15,735**	14,948	5.3 %
Intersegment revenues	**17**	18	(5.6)%
TTech Operating revenues and other income [2]	**15,752**	14,966	5.3 %

1 Excludes health services and agriculture and consumer goods services.
2 Includes a gain of $410 million on the disposition of our financial solutions business in the fourth quarter of 2021. Excluding the effect of the 2021 financial solutions business disposition, TTech Operating revenues and other income increased by 8.2% in 2022.

TTech Operating revenues and other income increased by $786 million in 2022. Excluding the effect of the disposition of our financial solutions business in 2021, TTech Operating revenues and other income increased by $1,196 million in 2022.



Mobile network revenue increased by $383 million or 6.2% in 2022, reflecting growth of 4.3% and 15.7% in the mobile phones and connected devices subscriber bases, respectively, over the past 12 months, in addition to higher ARPU predominantly due to roaming improvements, as described above.

Mobile equipment and other service revenues increased by $8 million in 2022, attributable to the impact of higher-value smartphones in the sales mix. This was partly offset by lower mobile handset contract volumes as a result of changes in customer preferences to hold onto devices for longer periods of time, and a greater mix of bring-your-own-device customer additions. Overall, throughout most of the year, switching activity was largely muted industry-wide, with the exception of the fourth quarter of 2022.

Fixed data services revenues increased by $216 million in 2022. The increase was driven by: (i) increased internet and data service revenues, reflecting a 6.3% increase in our internet subscribers over the past 12 months, in addition to higher revenue per customer as a result of internet speed upgrades, internet rate plans with larger allotted data amounts, and rate changes; (ii) business acquisitions; and (iii) increased revenues from home security driven by expanded services and customer growth of 21.6% over the past 12 months. This growth was partially offset by: (i) the impact of the fourth quarter 2021 disposition of our financial solutions business; (ii) lower TV revenues, reflecting an increased mix of customers selecting smaller TV combination packages and technological substitution, largely moderated by subscriber growth of 4.7% over the past 12 months; and (iii) the ongoing decline in legacy data service revenues.

Fixed voice services revenues decreased by $50 million in 2022, reflecting the ongoing decline in legacy voice revenues as a result of technological substitution and price plan changes. Declines were partly mitigated by the success of our bundled product offerings, retention efforts and the migration from legacy to IP services offerings.

Fixed equipment and other service revenues increased by $70 million in 2022, reflecting higher sales volumes and lower discounts on business and consumer premises equipment, along with higher other services revenue.

Health services revenues increased by $392 million in 2022, driven by: (i) our acquisition of LifeWorks on September 1, 2022; (ii) higher revenues as a result of the continued adoption of our virtual solutions, inclusive of organic growth and business acquisitions; and (iii) growth in health benefits management services, with plan members continuing to increase their use of elective health services, as well as an increase in the number of lives covered, partly offset by rate changes associated with a contract renewal.

Agriculture and consumer goods services revenues increased by $68 million in 2022, largely reflecting the impacts of business acquisitions, particularly with increased revenues from Software-as-a-Service (SaaS)-based revenue management software for consumer goods manufacturers, in addition to organic contributions from increased animal health pharmacy and research revenues. Our agriculture and consumer goods revenues are largely earned in U.S. dollars, and in 2022 compared to 2021, the Canadian dollar weakened against the U.S. dollar, resulting in higher reported revenues in the year.

Other income decreased by $300 million in 2022, largely reflecting the non-recurrence of the $410 million gain on disposition of our financial solutions business in the fourth quarter of 2021. Excluding the effect of this disposition, Other income increased by $110 million in 2022, reflecting the reversal of provisions for contingent consideration related to business acquisitions, decreases in provisions arising from business acquisition-related written put options, a gain on acquisition of control of LifeWorks, and higher gains on investments.

Intersegment revenues represent services provided to the DLCX segment that are eliminated upon consolidation, together with the associated DLCX expenses.

Direct contribution – TTech segment

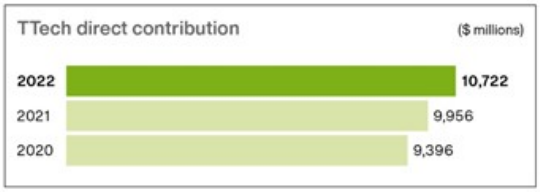
	Mobile products and services			Fixed products and services[1]			Total TTech		
Years ended December 31 ($in millions)	**2022**	2021	Change	**2022**	2021	Change	**2022**	2021	Change
REVENUES									
Service	**6,697**	6,297	6.4 %	**6,582**	5,928	11.0 %	**13,279**	12,225	8.6 %
Equipment	**2,026**	2,042	(0.8)%	**310**	261	18.8 %	**2,336**	2,303	1.4 %
Operating revenues (arising from contracts with customers)	**8,723**	8,339	4.6 %	**6,892**	6,189	11.4 %	**15,615**	14,528	7.5 %
EXPENSES									
Direct expenses	**2,792**	2,802	(0.3)%	**2,101**	1,771	18.7 %	**4,893**	4,572	7.0 %
Direct contribution	**5,931**	5,537	7.1 %	**4,791**	4,418	8.4 %	**10,722**	9,956	7.7 %

1 Includes health services and agriculture and consumer goods services.

The direct expenses included in the direct contribution calculations in the preceding table represent a component of the Goods and services purchased and Employee benefits expense totals included in the table below and have been calculated in accordance with the accounting policies used to prepare the totals presented in the financial statements. TTech direct contribution increased by $766 million or 7.7% in 2022.

TTech mobile products and services direct contribution increased by $394 million or 7.1% in 2022, largely reflecting higher network revenues, higher equipment margins and lower commissions expense associated with an increased mix of digital sales and lower mobile handset upgrade volumes. These were partly offset by higher roaming expense associated with an increase in roaming revenues and higher international travel volumes.

TTech fixed products and services direct contribution increased by $373 million or 8.4% in 2022, reflecting growth in health and agriculture and consumer goods services, inclusive of business acquisitions and organic growth, as well as margins for internet and data. These were partly offset by declining legacy voice and data margins, as well as declining TV margins.



Operating expenses – TTech segment

Years ended December 31 ($ in millions)	**2022**	2021	Change
Goods and services purchased[1]	**7,016**	6,593	6.4 %
Employee benefits expense[1]	**3,039**	2,638	15.2 %
TTech operating expenses	**10,055**	9,231	8.9 %

1 Includes restructuring and other costs.

TTech operating expenses increased by $824 million in 2022.

Goods and services purchased increased by $423 million in 2022, reflecting: (i) higher costs related to business acquisitions, as well as costs associated with scaling our health and agriculture and consumer goods businesses; (ii) higher product and service costs in support of our growing subscriber connections, including TV subscribers; (iii) higher costs related to the scaling of our digital capabilities, inclusive of increased subscription-based licences; (iv) higher-value smartphones in the sales mix; (v) higher non-labour-related restructuring costs; (vi) bad debt expense returning to pre-pandemic levels; and (vii) higher roaming expense associated with an increase in roaming revenues and higher international travel volumes. The increase was partly offset by: (i) lower mobile equipment sales expense due to lower mobile handset contract volumes; (ii) lower commissions expense associated with an increased mix of digital sales and lower mobile handset upgrade volumes; and (iii) lower advertising and promotional costs.

Employee benefits expense increased by $401 million in 2022, primarily due to higher compensation and benefits costs , reflecting an increase in the number of employees related to business acquisitions and merit-based compensation increases. These increases were partly offset by higher capitalized labour costs.

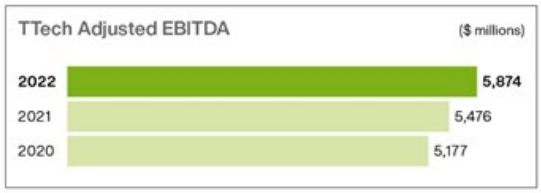
EBITDA – TTech segment

Years ended December 31 ($ in millions, except margins)	**2022**	2021	Change
EBITDA	**5,697**	5,735	(0.6)%
Add restructuring and other costs included in EBITDA	**180**	148	n/m
(Deduct) add other equity (income) losses related to real estate joint ventures	**(3)**	3	n/m
Deduct gain on disposition of financial solutions business	**—**	(410)	n/m
Adjusted EBITDA	**5,874**	5,476	7.3 %
EBITDA margin[1] (%)	**36.2**	38.3	(2.1) pts.
Adjusted EBITDA margin[1] (%)	**37.3**	37.6	(0.3) pts.

1 These are non-GAAP and other specified financial measures. See *Section 11.1 Non-GAAP and other specified financial measures.*

TTech EBITDA decreased by $38 million or 0.6% in 2022. TTech Adjusted EBITDA increased by $398 million or 7.3% in 2022, reflecting an increase in direct contribution. This was partially offset by an increase in goods and services purchased and higher employee benefits expense, as described above.

Adjusted EBITDA less capital expenditures - TTech segment



Years ended December 31 ($ in millions)	**2022**	2021	Change
Adjusted EBITDA	**5,874**	5,476	7.3 %
Capital expenditures	**(3,337)**	(3,372)	(1.0)%
Adjusted EBITDA less capital expenditures [1]	**2,537**	2,104	20.6 %

1 See *Section 11.1 Non-GAAP and other specified financial measures* .

TTech Adjusted EBITDA less capital expenditures increased by $433 million in 2022. See *Section 7.3* for further discussion on capital expenditures.

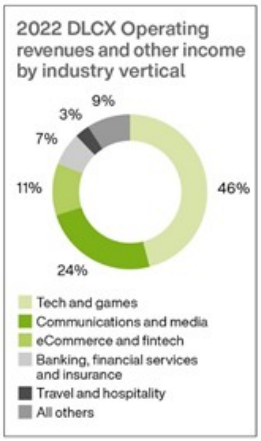
EBIT – TTech segment

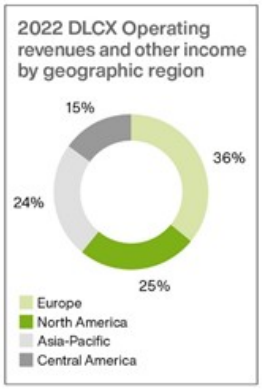
Years ended December 31 ($ in millions)	**2022**	2021	Change
EBITDA	**5,697**	5,735	(0.6)%
Depreciation	**(2,064)**	(1,982)	4.1 %
Amortization	**(1,051)**	(912)	15.2 %
EBIT[1]	**2,582**	2,841	(9.1)%

1 See *Section 11.1 Non-GAAP and other specified financial measures* .

TTech EBIT decreased by $259 million in 2022. Depreciation and amortization increased, reflecting business acquisitions and growth in capital assets over the past 12 months, including our expanded fibre footprint and 5G network roll-out, in addition to accelerated depreciation resulting from asset retirement activity and higher depreciation on right-of-use lease assets.

5.5 Digitally-led customer experiences – TELUS International segment





DLCX trends

Over the past eight quarters, the COVID-19 pandemic has impacted our business and we are not able to estimate its ultimate duration or the extent of its impact. As our service delivery centres are located in multiple geographic regions, the varying degrees of severity and recovery efforts from the pandemic in the countries where we operate has required us to evolve and adapt our business operations. As of the date of this report, many of our team members continue to work remotely, as they have since the onset of the pandemic, and in some cases we have thoughtfully and strategically returned team members to delivery locations. Over the past few quarters, we were able to largely mitigate the negative impact on our financial condition, financial performance and operating cash flows by taking steps to strategically grow our client base and contain costs. While we expect the pandemic to continue to affect our operations and our clients into 2023 and possibly thereafter, these impacts reflect our new operating environment.

The trend over the past eight quarters of increases in DLCX revenue reflects both the growth in our organic customer base and the scale-up of new service programs provided to existing external customers. The higher revenue also includes revenue from internal services provided to the TTech segment.

Goods and services purchased and Employee benefits expense have increased in correspondence with increases in our team member base as a result of growing service volumes from both our existing and new customers (including the expansion of our service offerings), increases in external labour to support the growth in our digital business, increases in our software licensing costs associated with our growing team member base, and increases in administrative expenses to support growth in the overall business and business acquisitions.

Depreciation and amortization have increased , reflecting growth in our capital assets, which is supporting the expansion of our sites required to service the increased customer demand.

DLCX operating indicators

Years ended December 31 ($ in millions)	**2022**	2021	Change
Operating revenues by industry vertical			
Tech and games	**1,495**	1,256	19.0 %
Communications and media	**757**	674	12.3 %
eCommerce and fintech	**370**	324	14.2 %
Banking, financial services and insurance	**216**	121	78.5 %
Travel and hospitality	**98**	78	25.6 %
All others	**278**	301	(7.6)%
	3,214	2,754	16.7 %
Operating revenues by geographic region			
Europe	**1,146**	1,153	(0.6)%
North America	**808**	629	28.5 %
Asia-Pacific	**770**	575	33.9 %
Central America	**490**	397	23.4 %
	3,214	2,754	16.7 %

Revenue from our tech and games industry vertical increased by $239 million to $1,495 million in 2022, reflecting continued growth within our existing clients and the addition of new clients. Revenue from our communications and media industry vertical increased by $83 million to $757 million, driven primarily by more services provided to the TTech segment. Revenue from the eCommerce and fintech industry vertical increased by $46 million to $370 million in 2022, which was primarily attributable to new clients and growth within our existing client base. Revenue from the banking, financial services and insurance vertical increased by $95 million to $216 million in 2022, driven by the addition of a leading global financial institution. Revenue from the travel and hospitality industry vertical increased by $20 million to $98 million in 2022, which was primarily attributable to new clients and growth within our existing client base. Across all of our verticals, the reported revenue growth rates were positively impacted by the strengthening U.S. dollar to Canadian dollar movements compared to the same period in the prior year, which was partially offset by the unfavourable European euro to U.S. dollar currency movements.

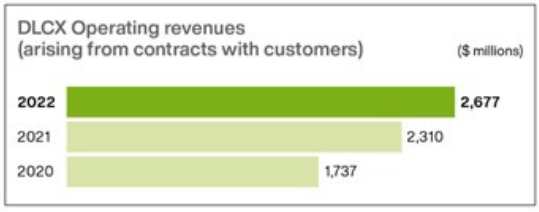
We serve our clients, who are primarily domiciled in North America, from multiple delivery locations across four geographic regions. In addition, our TIAI clients are largely supported by crowdsourced contractors that are globally dispersed and not limited to the physical locations of our delivery centres. The table above presents the revenue generated in each geographic region, based on the location of our delivery centre or where the services were provided from, for the periods presented.

Operating revenues and other income – DLCX segment

Years ended December 31 ($ in millions)	**2022**	2021	Change
Operating revenues (arising from contracts with customers)	**2,677**	2,310	15.9 %
Intersegment revenues	**537**	444	20.9 %
DLCX Operating revenues and other income	**3,214**	2,754	16.7 %

DLCX Operating revenues and other income increased by $460 million in 2022.

Our **digital and customer experience solutions revenues** increased by $367 million in 2022, primarily attributable to growth in our tech and games clients as noted earlier, arising from additional services provided to existing clients and new clients added since the prior year. The strengthening of the U.S. dollar against the Canadian dollar resulted in a favourable foreign currency impact on our DLCX operating results, partially offset by the weakening European euro and related unfavourable foreign currency impact on our European euro-denominated operating results. Revenues from contracts denominated in U.S. dollars, European euros and other currencies will be affected by changes in foreign exchange rates.



Intersegment revenues represent services provided to the TTech segment, including those from the TELUS master services agreement. Such revenue is eliminated upon consolidation, together with the associated TTech expenses. The increase in intersegment revenues reflects the competitive benefits TELUS derives from the lower cost structure in the DLCX segment and the significant amounts of value-generating digital, AI, telecommunications, health and agriculture and consumer goods solutions TELUS receives, while maintaining control over the quality of the associated services delivered and not incurring the margin that a third-party vendor would require.

Operating expenses – DLCX segment

Years ended December 31 ($ in millions)	**2022**	2021	Change
Goods and services purchased[1]	**645**	568	13.6 %
Employee benefits expense[1]	**1,860**	1,631	14.0 %
DLCX operating expenses	**2,505**	2,199	13.9 %

1 Includes restructuring and other costs.

DLCX operating expenses increased by $306 million in 2022.

Goods and services purchased increased by $77 million in 2022, due in part to business growth, which includes higher crowdsourced contractor costs to support expansion in our TIAI business, and to the strengthening of the U.S. dollar relative to the Canadian dollar. These were partially offset by the lower average exchange rates across a variety of currencies relative to the U.S. dollar.

Employee benefits expense increased by $229 million in 2022 as a result of business growth, which has resulted in a higher team member count coupled with higher salaries and wages, and the strengthening of the U.S. dollar relative to the Canadian dollar. The increase was offset, in part, by the lower average exchange rates across a variety of currencies relative to the U.S. dollar, and by lower share-based compensation expense associated with the lower average share price of TELUS International during 2022, resulting in a lower expense on liability-accounted awards.

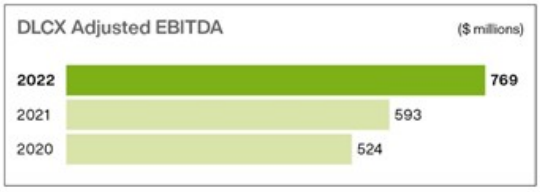
EBITDA – DLCX segment

Years ended December 31 ($ in millions, except margins)	**2022**	2021	Change
EBITDA	**709**	555	27.7 %
Add restructuring and other costs included in EBITDA	**60**	38	n/m
Adjusted EBITDA[1]	**769**	593	29.5 %
EBITDA margin[2] (%)	**22.1**	20.2	1.9 pts.
Adjusted EBITDA margin[2] (%)	**23.9**	21.6	2.3 pts.

1 For certain metrics, there are definitional differences between TELUS and TELUS International reporting. These differences largely arise from TELUS International adopting definitions consistent with practice in its industry.

2 These are non-GAAP and other specified financial measures. See *Section 11.1 Non-GAAP and other specified financial measures*.

DLCX EBITDA increased by $154 million or 27.7% in 2022. DLCX Adjusted EBITDA increased by $176 million or 29.5% in 2022. Adjusted EBITDA margin increased by 2.3 percentage points in 2022. The increase in Adjusted EBITDA margin in 2022 was due primarily to the lower share-based compensation expense resulting from the lower average share price of TELUS International.



Adjusted EBITDA less capital expenditures – DLCX segment

Years ended December 31 ($ in millions)	**2022**	2021	Change
Adjusted EBITDA	**769**	593	29.5 %
Capital expenditures	**(135)**	(126)	7.1 %
Adjusted EBITDA less capital expenditures [1]	**634**	467	35.8 %

1 See *Section 11.1 Non-GAAP and other specified financial measures*.

DLCX Adjusted EBITDA less capital expenditures increased by $167 million in 2022. See *Section 7.3* for further discussion on capital expenditures.

EBIT – DLCX segment

Years ended December 31 ($ in millions)	**2022**	2021	Change
EBITDA	**709**	555	27.7 %
Depreciation	**(162)**	(144)	12.5 %
Amortization	**(175)**	(178)	(1.7)%
EBIT[1]	**372**	233	59.7 %

1 See *Section 11.1 Non-GAAP and other specified financial measures*.

DLCX EBIT increased by $139 million in 2022, in line with the increase in EBITDA.

6. Changes in financial position

Financial position at: ($ millions)	December 31 **2022**	2021	Change	Change includes:
Current assets				
Cash and temporary investments, net	**974**	723	251	See *Section 7 Liquidity and capital resources*
Accounts receivable	**3,297**	2,671	626	An increase primarily driven by business acquisitions, unbilled customer finance receivables and DLCX receivables
Income and other taxes receivable	**143**	206	(63)	Instalments to date are less than the expense, as well as income tax refunds received
Inventories	**537**	448	89	An increase primarily driven by advanced purchase of fixed product inventory and an increase in rates and volume of used handsets
Contract assets	**441**	450	(9)	Refer to description in non-current contract assets
Prepaid expenses	**617**	521	96	An increase in prepayment of maintenance contracts net of amortization and an increase in costs incurred to obtain or fulfill contracts with customers
Current derivative assets	**83**	13	70	An increase in the notional amount of U.S. currency hedging items and virtual power purchase agreements (VPPAs).
Current liabilities				
Short-term borrowings	**104**	114	(10)	See *Note 22* of the Consolidated financial statements
Accounts payable and accrued liabilities	**3,947**	3,705	242	An increase primarily driven by business acquisitions and trade accounts payable, partly offset by a decrease in accounts payable associated with capital expenditures. See *Note 23* of the Consolidated financial statements
Income and other taxes payable	**112**	104	8	Instalments to date are less than the expense
Dividends payable	**502**	449	53	Effects of increases in the dividend rate and the number of shares outstanding
Advance billings and customer deposits	**891**	854	37	An increase in advance billings primarily due to business acquisitions during the period. See *Note 24* of the Consolidated financial statements
Provisions	**166**	96	70	An increase primarily driven by business acquisitions, and employee-related provisions
Current maturities of long-term debt	**2,541**	2,927	(386)	A decrease in outstanding commercial paper, refinancing of the TELUS International credit facility, and the 2022 repayment upon maturity of TELUS Communications Inc. debentures, Series 5, partly offset by an increase resulting from the reclassification of long-term debt relating to the upcoming 2023 maturity of $500 million Notes, Series CJ, in March 2023
Current derivative liabilities	**18**	24	(6)	A decrease in the notional amount of hedging items.
Working capital (Current assets subtracting Current liabilities)	**(2,189)**	(3,241)	1,052	TELUS normally has a negative working capital position. See *Financing and capital structure management plans* in *Section 4.3* and *Note 4(c)* of the Consolidated financial statements.

Financial position at: ($ millions)	December 31 2022	2021	Change	Change includes:
Non-current assets				
Property, plant and equipment, net	**17,084**	15,926	1,158	See *Capital expenditures* in *Section 7.3 Cash used by investing activities* and *Depreciation* in *Section 5.3 Consolidated operations*
Intangible assets, net	**19,178**	17,485	1,693	See *Capital expenditures* in *Section 7.3 Cash used by investing activities* and *Amortization of intangible assets* in *Section 5.3 Consolidated operations*
Goodwill, net	**9,169**	7,270	1,899	An increase primarily due to the acquisitions of LifeWorks, Fully Managed Inc., Vivint Smart Home Inc., and individually immaterial business acquisitions, as well as the effect of translating TI financial statements into Canadian dollars. See *Note 18* of the Consolidated financial statements
Contract assets	**320**	299	21	An increase driven by higher subsidized devices from Black Friday promotions
Other long-term assets	**2,203**	1,971	232	An increase in derivative assets primarily due to VPPAs and U.S. dollar-denominated debt, as well as an increase in portfolio and other investments, and an increase in unbilled customer finance receivables. These were partially offset by a decrease in pension assets resulting from the gains arising from financial assumption re-measurements exceeding the combined effects of the pension asset ceiling and the pension plan returns less than the discount rate. *See Notes 4, 15* and *20* of the Consolidated financial statements.
Non-current liabilities				
Provisions	**538**	774	(236)	A decrease driven by the impact of discount rate changes related to asset retirement obligations
Long-term debt	**22,496**	17,925	4,571	See *Section 7.4 Cash provided by financing activities*
Other long-term liabilities	**636**	907	(271)	A decrease in pension liabilities resulting from the gains arising from financial assumption re-measurements exceeding the combined effects of the pension asset ceiling and the pension plan returns less than the discount rate. See *Note 15* of the Consolidated financial statements
Deferred income taxes	**4,437**	4,045	392	An increase in temporary differences between the accounting and tax basis of assets and liabilities, as well as an increase from business acquisitions.
Owners' equity				
Common equity	**16,569**	15,116	1,453	See *Consolidated statements of changes in owners' equity* in the Consolidated financial statements
Non-controlling interests	**1,089**	943	146	See *Consolidated statements of changes in owners' equity* in the Consolidated financial statements.

7. Liquidity and capital resources

This section contains forward-looking statements, including those with respect to our TELUS Corporation Common Share (Common Share) dividend payout ratio and net debt to EBITDA – excluding restructuring and other costs ratio. See *Caution regarding forward-looking statements* at the beginning of this MD&A.

7.1 Overview

Our capital structure financial policies and financing and capital structure management plans are described in *Section 4.3*.

Cash flows

Years ended December 31 ($ millions)	**2022**	2021	Change
Cash provided by operating activities	**4,811**	4,388	423
Cash used by investing activities	**(5,408)**	(5,466)	58
Cash provided by financing activities	**848**	953	(105)
Increase (decrease) in Cash and temporary investments, net	**251**	(125)	376
Cash and temporary investments, net, beginning of period	**723**	848	(125)
Cash and temporary investments, net, end of period	**974**	723	251

7.2 Cash provided by operating activities

Analysis of changes in cash provided by operating activities

Years ended December 31 ($ millions)	**2022**	2021	Change
Operating revenues and other income (see *Section 5.3*)	**18,412**	17,258	1,154
Goods and services purchased (see *Section 5.3*)	**(7,107)**	(6,699)	(408)
Employee benefits expense (see *Section 5.3*)	**(4,899)**	(4,269)	(630)
Restructuring and other costs, net of disbursements	**69**	10	59
Net employee defined benefit plans expense	**101**	113	(12)
Employer contributions to employee defined benefit plans	**(44)**	(53)	9
Share-based compensation expense, net of payments	**122**	139	(17)
Unrealized change in forward element of virtual power purchase agreements (VPPAs) (see *Section 5.3*)	**(193)**	—	(193)
Interest paid	**(816)**	(744)	(72)
Interest received	**17**	17	—
Income taxes paid, net of recoveries received	**(519)**	(601)	82
Gain on disposition of financial solutions business	**—**	(410)	410
Other operating working capital changes	**(332)**	(373)	41
Cash provided by operating activities	**4,811**	4,388	423

Cash provided by operating activities increased by $423 million in 2022.

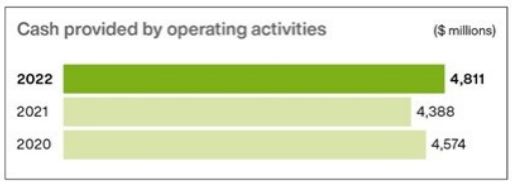
- Restructuring and other costs, net of disbursements, represented a net change of $59 million in 2022. We incurred lower restructuring and other costs disbursements net of expense, related to improving our overall cost structure and operational efficiency.

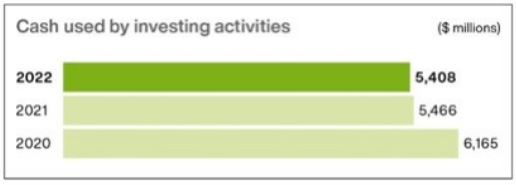
- Interest paid increased by $72 million in 2022, largely due to: (i) the issuance of new notes described in *Section 7.4*; (ii) interest paid on the unsecured non-revolving $1.1 billion bank credit facility maturing July 9, 2024; and (iii) increased interest paid on commercial paper, as we had more commercial paper outstanding during 2022 at higher interest rates.

- Income taxes paid, net of recoveries received, decreased by $82 million in 2022, primarily related to: (i) final payments made in the first quarter of 2021 related to the prior year; and (ii) payments made in the first quarter of 2021 with respect to business combinations were greater than that of 2022.

- For additional details on the Gain on disposition of financial solutions business, see *Other income* in *Section 5.3*.

- For a discussion of Other operating working capital changes, see *Section 6 Changes in financial position* and *Note 31(a)* of the Consolidated financial statements.





7.3 Cash used by investing activities

Analysis of changes in cash used by investing activities

Years ended December 31 ($ millions)	**2022**	2021	Change
Cash payments for capital assets, excluding spectrum licences	**(3,647)**	(3,097)	(550)
Cash payments for spectrum licences	**—**	(2,219)	2,219
Cash payments for acquisitions, net	**(1,547)**	(468)	(1,079)
Advances to, and investment in, real estate joint ventures and associates	**(21)**	(46)	25
Real estate joint venture receipts	**5**	4	1
Proceeds on disposition	**16**	508	(492)
Investment in portfolio investments and other	**(214)**	(148)	(66)
Cash used by investing activities	**(5,408)**	(5,466)	58

Cash used by investing activities decreased by $58 million in 2022.

- The increase in Cash payments for capital assets, excluding spectrum licences in 2022 was primarily composed of:
  - Higher capital expenditure payments of $576 million in 2022 with respect to payment timing differences.
  - A decrease in capital expenditures of $26 million (see *Capital expenditure measures* table and discussion below).

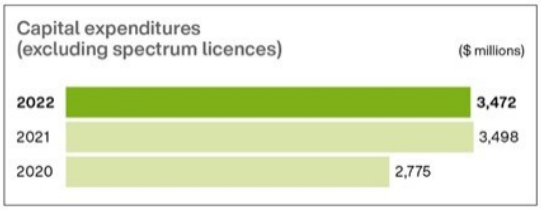
- Cash payments for spectrum licences in 2021 were primarily related to the $1.95 billion for the 3500 MHz spectrum acquired in the 2021 spectrum auction. Additionally, in the first quarter of 2021, we acquired 3500 MHz spectrum licences in the urban cores of Edmonton, Guelph/Kitchener, London, Ottawa and Winnipeg, as well as in East Kootenay and Whistler. In the second quarter of 2021, we acquired a 2500 MHz licence in the urban core of Calgary.

- In 2022, we made cash payments for the acquisition of Fully Managed Inc., Vivint Smart Home, Inc. and LifeWorks, as noted in *Section 1.3*, and other individually immaterial business acquisitions that are complementary to our existing lines of business. This is compared to business acquisition activity in 2021 that included the acquisition of Blacksmith Applications Holdings Inc. and other individually immaterial business acquisitions complementary to our existing lines of business.

- Advances to, and investment in, real estate joint ventures and associates represented a net change of $25 million, predominantly related to 2021 investments in associates that did not recur in 2022.

- Proceeds on disposition decreased by $492 million in 2022, primarily due to the 2021 disposition of our financial solutions business.

- Investment in portfolio investments and other increased by $66 million, primarily from investments in a greater number of portfolio investments in 2022 and an increase of capital inventory.



Capital expenditure measures

Years ended December 31 ($ millions, except capital intensity)	**2022**	2021	Change
Capital expenditures[1]			
TELUS technology solutions (TTech) segment	**3,337**	3,372	(1.0)%
Digitally-led customer experiences – TELUS International (DLCX) segment	**135**	126	7.1 %
Consolidated	**3,472**	3,498	(0.7)%
TTech segment capital expenditure intensity [2] (%)	**21**	23	(2)pts.
DLCX segment capital expenditure intensity [2] (%)	**4**	5	(1)pt.
Consolidated capital expenditure intensity [2] (%)	**19**	20	(1)pt.

1 Capital expenditures include assets purchased, excluding right-of-use lease assets, but not yet paid for, and therefore differ from Cash payments for capital assets, excluding spectrum licences, as reported in the Consolidated statements of cash flows. Refer to *Note 31* of the Consolidated financial statements for further information.

2 See *Section 11.1 Non-GAAP and other specified financial measures* .

Consolidated capital expenditures decreased by $26 million in 2022. TTech drove $35 million of this decrease in 2022, primarily due to a planned slowdown of fibre build consistent with our annual build target, compared to the acceleration of investments in 2021. Meanwhile, we reprioritized our capital spend to: (i) support accelerated investments in our 5G network; (ii) scale our health product offerings and capabilities, including our recent acquisition of LifeWorks on September 1, 2022, as well as to support business integration; and (iii) enhance our product and digital development to finalize our multi-year increase in system capacity and reliability as announced on March 25, 2021. By December 31, 2022, our 5G network covered over 30.8 million Canadians, representing approximately 83% of the population.

On March 25, 2021, we announced that we intended to accelerate $1.5 billion of capital spending in 2021 and 2022, with up to $750 million of accelerated capital in 2021 and the remainder brought forward into 2022. Accelerated capital invested during 2022 was $823 million. This spend has enabled: (i) the acceleration of premises to be connected to our fibre network; (ii) the acceleration of our copper-to-fibre migration program; (iii) the expansion of our fibre build to a number of additional communities, including many rural and Indigenous communities; (iv) the advancement of our 5G network build, which covered approximately 83% of the Canadian population at December 31, 2022; and (v) progress with the implementation of our digital strategy, and enhancement of products that will bolster both long-term revenue growth and operating expense efficiency.

7.4 Cash provided by financing activities

Analysis of changes in cash provided by financing activities

Years ended December 31 ($ millions)	**2022**	2021	Change
Common Shares issued	**—**	1,300	(1,300)
Dividends paid to holders of Common Shares	**(1,188)**	(1,045)	(143)
Issue (repayment) of short-term borrowings, net	**(17)**	10	(27)
Long-term debt issued	**10,271**	4,891	5,380
Redemptions and repayment of long-term debt	**(8,049)**	(4,972)	(3,077)
Shares of subsidiary issued and sold to (purchased from) non-controlling interests, net	**(123)**	827	(950)
Other	**(46)**	(58)	12
Cash provided by financing activities	**848**	953	(105)

Cash provided by financing activities decreased by $105 million in 2022.



Common Shares issued

Common Shares issued reflect 51 million Common Shares issued at a price of $25.35 per Common Share in the first quarter of 2021.

Dividends paid to holders of Common Shares

Our dividend reinvestment and share purchase (DRISP) plan trustee acquired shares from Treasury for the DRISP plan, rather than acquiring Common Shares in the stock market. Effective with the dividends paid on October 1, 2019, we offered Common Shares from Treasury at a discount of 2%. Cash payments for dividends increased by $143 million in 2022, which reflected higher dividend rates under our dividend growth program (see *Section 4.3*) and an increase in the number of shares outstanding. This was partly offset by a higher discounted DRISP issuance. During 2022, our DRISP plan trustee acquired Common Shares for $658 million.

In January 2023, we paid dividends of $317 million to the holders of Common Shares and the trustee acquired dividend reinvestment Common Shares from Treasury for $185 million, totalling $502 million.

Issue (repayment) of short-term borrowings, net

In the second quarter of 2022, we drew down amounts advanced to us from an arm's-length securitization trust to finance working capital. This was further drawn down earlier in the third quarter of 2022 before being repaid later in the third quarter of 2022. There were no material draws or repayments in 2021.

Long-term debt issued and Redemptions and repayment of long-term debt

In 2022, long-term debt issued increased by $5,380 million, while redemptions and repayment of long-term debt increased by $3,077 million. These changes were primarily composed of:

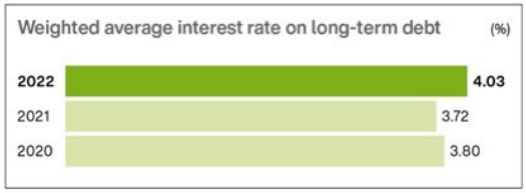
- A net decrease in commercial paper outstanding, including foreign exchange effects, of $442 million to a balance of $1.5 billion (US$1.1 billion) at December 31, 2022, from a balance of $1.9 billion (US$1.5 billion) at December 31, 2021. Our commercial paper program, when utilized, provides low-cost funds and is fully backstopped by the revolving credit facility (see *Section 7.6 Credit facilities*).

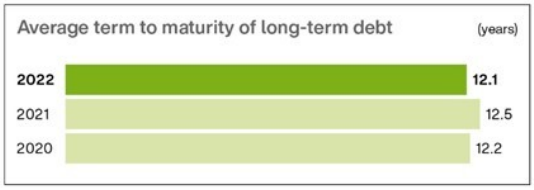
- A decrease in net draws on the TELUS International (TI) credit facility, including foreign exchange effects, of $148 million. As at December 31, 2022, net draws due to a syndicate of financial institutions (excluding TELUS Corporation) were US$689 million, whereas as at December 31, 2021, net draws were US$854 million. The TI credit facility is non-recourse to TELUS Corporation.
- The February 28, 2022, issue of US$900 million of our senior unsecured 3.40% U.S. Dollar Sustainability-Linked Notes, due May 13, 2032. The net proceeds were used for the repayment of outstanding indebtedness, including the repayment of commercial paper, and for other general corporate purposes.
- The September 13, 2022, three-tranche note issuance of: $1.1 billion of senior unsecured 5.25% Sustainability-Linked Notes, Series CAG, maturing on November 15, 2032; $550 million of senior unsecured 5.65% Notes, Series CAH, maturing on September 13, 2052; and $350 million of senior unsecured 5.00% Notes, Series CAI, maturing on September 13, 2029. The net proceeds from the three-tranche offering will be used for the repayment of outstanding indebtedness and for other general corporate purposes.
- The draw-down of the unsecured non-revolving $1.1 billion bank credit facility, maturing July 9, 2024, with a syndicate of financial institutions, which was used for general corporate purposes. The amount has an effective average interest rate of 5.3% through January 2023.
- The repayment upon maturity of $249 million of Series 5, 9.65% debentures of TELUS Communications Inc. (TCI) due April 2022.

By comparison, in 2021, long-term debt issued increased by $9 million, while redemptions and repayment of long-term debt increased by $1,109 million. These changes were primarily composed of:

- A net increase in commercial paper outstanding, including foreign exchange effects, of $372 million from a balance of $731 million (US$574 million) at December 31, 2020.
- A decrease in net draws on the TI credit facility, including foreign exchange effects, of $742 million. As at December 31, 2020, net draws were US$1,428 million.
- The April 5, 2021 issue of $500 million of senior unsecured 4.10% Notes, Series CAE, due April 5, 2051.
- The June 28, 2021 issue of $750 million of our inaugural senior unsecured 2.85% Sustainability-Linked Notes, Series CAF, due November 13, 2031.
- The repayment upon maturity of Series 3, 10.65% debentures of TCI due June 2021.
- The early full redemption of $1 billion of 2.35% Notes, Series CT, due March 28, 2022. The long-term debt prepayment premium recorded in the three-month period ended September 30, 2021 was $10 million before income taxes.

The average term to maturity of our long-term debt (excluding commercial paper, TELUS bank credit facilities, the revolving components of the TI credit facility, lease liabilities and other long-term debt) was 12.1 years at December 31, 2022, a decrease from 12.5 years at December 31, 2021. Additionally, the weighted average cost of our long-term debt (excluding commercial paper, TELUS bank credit facilities, the revolving components of the TI credit facility, lease liabilities and other long-term debt) was 4.03% at December 31, 2022, an increase from 3.72% at December 31, 2021.





Shares of subsidiary issued and sold to (purchased from) non-controlling interests, net

In the second quarter of 2022, we acquired shares of TELUS International from a non-controlling interest. In the fourth quarter of 2022, we acquired additional shares of TELUS International by way of market purchases. In connection with the TI initial public offering in the first quarter of 2021, we received net cash proceeds of $827 million.

Other

In the first quarter of 2022, we incurred debt issuance costs in connection with the issuance of our senior unsecured 3.40% U.S. Dollar Sustainability-Linked Notes in the first quarter of 2022. Additionally, in the third quarter of 2022, we incurred debt issuance costs in connection with the above-mentioned September 13, 2022 three-tranche note issuance. In the fourth quarter of 2022, TELUS International incurred costs related to the amendment and expansion of its credit facility. The total of these other costs in 2022 was lower than the total of the equity issuance costs in the first quarter of 2021 in connection with our issuance of 51 million Common Shares and debt issuance costs in 2021 related to two issuances of notes.

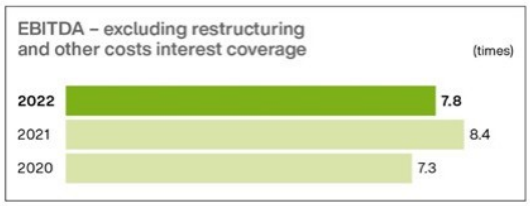
7.5 Liquidity and capital resource measures

Net debt was $24.2 billion at December 31, 2022, an increase of $3.6 billion compared to one year earlier, resulting mainly from: the draw-down of the unsecured non-revolving $1.1 billion bank credit facility; the third quarter 2022 three-tranche issuance of $2.0 billion of notes as described in *Section 7.4*; and the first quarter 2022 issuance of US$900 million of sustainability-linked notes as described in *Section 7.4*. These factors were partially offset by: a decrease in commercial paper outstanding; repayment upon maturity of Series 5, 9.65% debentures of TCI in the second quarter of 2022; and greater Cash and temporary investments.

Fixed-rate debt as a proportion of total indebtedness, which excludes lease liabilities and other long-term debt, was 86% as at December 31, 2022, down from 87% one year earlier. The decrease was primarily due to draws on the unsecured non-revolving $1.1 billion bank credit facility maturing July 9, 2024, which is classified as floating-rate debt in this calculation, as well as the repayment upon maturity of Series 5, 9.65% debentures of TCI in the second quarter of 2022. This was partially offset by: (i) the third quarter 2022 three-tranche issuance of $2.0 billion of notes as described in *Section 7.4*; (ii) the first quarter 2022 issuance of US$900 million of sustainability-linked notes as described in *Section 7.4*; (iii) a decrease in commercial paper outstanding, which is classified as floating-rate debt in this calculation; and (iv) a decrease in net draws due to a syndicate of financial institutions (excluding TELUS Corporation) on the TI credit facility, which is non-recourse to TELUS Corporation.

Our Net debt to EBITDA – excluding restructuring and other costs ratio supports our financial objective of maintaining investment-grade credit ratings, which facilitates reasonable access to capital. This ratio was 3.63 times, as measured at December 31, 2022, up from 3.17 times one year earlier. As at December 31, 2022, this ratio remains outside of the long-term objective range of 2.20 to 2.70 times, resulting from prior issuances of incremental debt, primarily due to the acquisition of spectrum licences, as spectrum is our largest indefinite life asset, and business acquisitions, partially offset by growth in EBITDA – excluding restructuring and other costs. EBITDA was reduced by COVID-19 pandemic impacts. As at December 31, 2022, the acquisition of spectrum licences increased the ratio by approximately 0.47 and business acquisitions over the past 12 months increased the ratio by approximately 0.20, while business dispositions decreased the ratio by approximately 0.28. Our recent acquisitions of spectrum licences have increased our national spectrum holdings and represent an investment to extend our network capacity to support continuing growth in demand for data, as well as growth in our mobile subscriber base. Given the cash demands of the 2019 600 MHz, the 2021 3500 MHz and upcoming spectrum auctions, as well as the inability to predict impacts of the COVID-19 pandemic, the assessment of the guideline and timing of return to the objective range remains to be determined; however, it is our intent to return to a ratio below 2.70 times in the medium term (following the 2021, and upcoming 2023 and 2024, spectrum auctions), consistent with our long-term strategy. While this ratio exceeds our long-term objective range, we are well in compliance with the leverage ratio covenant in our credit facilities, which states that we may not permit our leverage ratio to exceed 4.25 to 1.00 at December 31, 2022 (see *Section 7.6 Credit facilities*).





Liquidity and capital resource measures

As at, or for the 12-month periods ended, December 31	**2022**	2021	Change
Components of debt and coverage ratios ($ millions)			
Long-term debt	**25,037**	20,852	4,185
Net debt[1]	**24,152**	20,535	3,617
Net income	**1,718**	1,698	20
EBITDA – excluding restructuring and other costs [1]	**6,646**	6,476	170
Financing costs	**632**	796	(164)
Net interest cost[1]	**847**	773	74
Debt ratios			
Fixed-rate debt as a proportion of total indebtedness (excluding lease liabilities and other long-term debt) (%)	**86**	87	(1) pt.
Average term to maturity of long-term debt (excluding commercial paper, TELUS bank credit facilities, the revolving components of the TI credit facility, lease liabilities and other long-term debt) (years)	**12.1**	12.5	(0.4)
Weighted average interest rate on long-term debt (excluding commercial paper, TELUS bank credit facilities, the revolving components of the TI credit facility, lease liabilities and other long-term debt) (%)	**4.03**	3.72	0.31 pts.
Net debt to EBITDA – excluding restructuring and other costs [1] (times)	**3.63**	3.17	0.46
Coverage ratios[1] (times)			
Earnings coverage	**3.6**	3.9	(0.3)
EBITDA – excluding restructuring and other costs interest coverage	**7.8**	8.4	(0.6)
Other measures[1] (%)			
Determined using most comparable IFRS-IASB measures			
Ratio of Common Share dividends declared to cash provided by operating activities less capital expenditures (excluding spectrum licences)	**142**	192	(50) pts.
Determined using management measures			
Common Share dividend payout ratio – net of dividend reinvestment plan effects	**95**	140	(45) pts.

1 See *Section 11.1 Non-GAAP and other specified financial measures.*

Earnings coverage ratio for the 12-month period ended December 31, 2022 was 3.6 times, down from 3.9 times one year earlier. An increase in income before borrowing costs and income taxes increased the ratio by 0.1, while an increase in borrowing costs decreased the ratio by 0.4.

EBITDA – excluding restructuring and other costs interest coverage ratio for the 12-month period ended December 31, 2022 was 7.8 times, down from 8.4 times one year earlier. Growth in EBITDA – excluding restructuring and other costs increased the ratio by 0.2 and an increase in net interest costs decreased the ratio by 0.8. EBITDA for the twelve-month period ended December 31, 2022 was reduced by COVID-19 pandemic impacts.

Common Share dividend payout ratios: Actual Common Share dividend payout decisions will continue to be subject to our Board's assessment of our financial position and outlook, as well as our long-term Common Share dividend payout objective range of 60 to 75% of prospective free cash flow. So as to be consistent with the way we manage our business, our Common Share dividend payout ratio is presented as a historical measure calculated as the sum of the dividends declared in the most recent four quarters for Common Shares, as recorded in the financial statements, net of dividend reinvestment plan effects, divided by the sum of the most recent four quarters' free cash flow amounts for interim reporting periods. For fiscal years, the denominator is annual free cash flow. The historical measure for the 12-month period ended December 31, 2022 is presented for illustrative purposes in evaluating our target guideline. As at December 31, 2022, the ratio was outside of the objective range, primarily due to: (i) our planned accelerated capital expenditures program to support our broadband capital investments, the build-out of our TELUS PureFibre infrastructure and the acceleration of our 5G network roll-out; and (ii) the reduction in EBITDA caused by the pandemic. Excluding the effects of our accelerated capital expenditures program of $823 million for the four most recent quarters, as at December 31, 2022, the ratio was 61%.

TI intends to retain all available funds and any future earnings to support operations and to finance the growth and development of its business.

7.6 Credit facilities

At December 31, 2022, we had approximately $1.3 billion of liquidity available from the TELUS revolving credit facility and $1.6 billion of liquidity available from the TI credit facility, with conditions precedent upon consummating the WillowTree acquisition, with a syndicate of financial institutions (excluding TELUS Corporation). Subsequently, on January 3, 2023, available liquidity from the TI credit facility was $371 million, following conditions precedent being met relating to TI's acquisition of WillowTree. In addition, we had $500 million available under our trade receivables securitization program (see *Section 7.7 Sale of trade receivables*). We are well within our objective of generally maintaining at least $1 billion of available liquidity.

TELUS credit facilities

We have a $2.75 billion (or U.S. dollar equivalent) unsecured revolving credit facility with a syndicate of financial institutions, expiring April 6, 2026. The revolving credit facility is used for general corporate purposes, including the backstop of commercial paper, as required. As at December 31, 2022, we had an unsecured non-revolving $1.1 billion bank credit facility, maturing July 9, 2024, with a syndicate of financial institutions, which is to be used for general corporate purposes. As at December 31, 2022, we had drawn $1.1 billion on the non-revolving bank credit facility, with an effective average interest rate of 5.3% through January 2023.

TELUS revolving credit facility at December 31, 2022

($ millions)	Expiry	Size	Drawn	Outstanding undrawn letters of credit	Backstop for commercial paper program	Available liquidity
Revolving credit facility[1]	April 6, 2026	2,750	—	—	(1,458)	1,292

1 Canadian dollars or U.S. dollar equivalent.

Our credit facilities contain customary covenants, including a requirement that we not permit our consolidated leverage ratio to exceed 4.25 to 1.00 and that we not permit our consolidated coverage ratio to be less than 2.00 to 1.00 at the end of any financial quarter. As at December 31, 2022, our consolidated leverage ratio was 3.63 to 1.00 and our consolidated coverage ratio was 7.85 to 1.00. These ratios are expected to remain well within the covenants. There are certain minor differences in the calculation of the leverage ratio and coverage ratio under the revolving credit facility, as compared with the calculation of Net debt to EBITDA – excluding restructuring and other costs and EBITDA – excluding restructuring and other costs interest coverage. Historically, the calculations are substantially similar other than the covenant includes in EBITDA the unrealized effects of non-currency risk-related derivative financial instruments that are held for trading (see *Note 4(h)* of the Consolidated financial statements). The covenants are not impacted by revaluation, if any, of Property, plant and equipment, Intangible assets or Goodwill for accounting purposes. Continued access to our credit facilities is not contingent on maintaining a specific credit rating.

Commercial paper

TELUS Corporation has an unsecured commercial paper program, which is backstopped by our revolving credit facility, enabling us to issue commercial paper up to a maximum aggregate equivalent amount at any one time of $2.0 billion (US$1.5 billion maximum) as at December 31, 2022. Foreign currency forward contracts are used to manage currency risk arising from issuing commercial paper denominated in U.S. dollars. The commercial paper program is to be used for general corporate purposes, including, but not limited to, capital expenditures and investments. Our ability to reasonably access the commercial paper market in the U.S. is dependent on our credit ratings (see *Section 7.8 Credit ratings*).

TELUS International credit facility

As at December 31, 2022, TELUS International (Cda) Inc. had a credit facility, secured by its assets, expiring on January 3, 2028, with a syndicate of financial institutions, including TELUS Corporation. The TI credit facility is comprised of US$800 million (TELUS Corporation as approximately 7.2% lender) revolving components and amortizing US$1.2 billion (TELUS Corporation as approximately 7.2% lender) term loan components. The TI credit facility is non-recourse to TELUS Corporation. The outstanding revolving components and term loan components had a weighted average interest rate of 6.7% as at December 31, 2022.

The term loan components are subject to an amortization schedule which requires that 5% of the principal advanced be repaid each year of the term of the agreement, with the balance due at maturity.

Concurrent with the acquisition of WillowTree, TI drew down US$363 million and US$600 million of its available credit facility revolving components and term loan components, respectively.

Other letter of credit facilities

At December 31, 2022, we had $119 million of letters of credit outstanding issued under various uncommitted facilities; such letter of credit facilities are in addition to the ability to provide letters of credit pursuant to our committed revolving bank credit facility. Available liquidity under various uncommitted letters of credit facilities was $186 million at December 31, 2022.

Other long-term debt

Other liabilities bear interest at 3.35%, are secured by the AWS-4 spectrum licences associated with these other liabilities and a real estate holding, and are subject to amortization schedules, so that the principal is repaid over the periods to maturity, the last period ending March 31, 2035.

7.7 Sale of trade receivables

TCI, a wholly owned subsidiary of TELUS, is a party to an agreement with an arm's-length securitization trust associated with a major Schedule I Canadian bank, under which it is currently able to sell an interest in certain trade receivables for an amount up to a maximum of $600 million. The agreement is in effect until December 31, 2024, and available liquidity was $500 million as at December 31, 2022. (See *Note 22* of the Consolidated financial statements.) Sales of trade receivables in securitization transactions are recognized as collateralized Short-term borrowings and thus do not result in our de-recognition of the trade receivables sold.

TCI is required to maintain a credit rating of at least BB by DBRS Ltd. or the securitization trust may require the sale program to be wound down prior to the end of the term. The minimum credit rating was exceeded as of February 9, 2023.

7.8 Credit ratings

In November 2022, Fitch Ratings, Standard & Poor's Rating Services and DBRS Ltd. each downgraded TELUS Corporation's issuer rating and the rating of our senior unsecured notes to BBB (stable outlook) from BBB high (or equivalent).

We believe adherence to most of our stated financial policies (see *Section 4.3*), coupled with our efforts to maintain a constructive relationship with banks, investors and credit rating agencies, continue to provide reasonable access to capital markets. (See discussion of risks in *Section 10.14 Financing, debt and dividends*.)

7.9 Financial instruments, commitments and contingent liabilities

Financial instruments

Our financial instruments, their accounting classification and the nature of certain risks that they may be subject to are described in *Note 4* of the Consolidated financial statements. Our policies in respect of the recognition and measurement of financial instruments are described in *Note 1(c)* of the Consolidated financial statements.

		Risks				
				Market risks		
Financial instrument	Accounting classification	Credit	Liquidity	Currency	Interest rate	Other price
Measured at amortized cost						
Accounts receivable	AC[1]	X		X		
Contract assets	AC[1]	X				
Construction credit facilities advances to real estate joint venture	AC[1]				X	
Short-term borrowings	AC[1]		X	X	X	
Accounts payable	AC[1]		X	X		
Provisions (including restructuring accounts payable)	AC[1]		X	X		X
Long-term debt	AC[1]		X	X	X	
Measured at fair value						
Cash and temporary investments	FVTPL[2]	X		X	X	
Long-term investments (not subject to significant influence)[3]	FVTPL/FVOCI[3]			X		X
Foreign exchange derivatives[4]	FVTPL[2]	X	X	X		
VPPAs[4]	FVTPL [2]					X

1 For accounting recognition and measurement purposes, classified as amortized cost (AC).

2 For accounting recognition and measurement purposes, classified as fair value through net income (FVTPL). *Unrealized* changes in the fair values of financial instruments are included in net income unless the instrument is part of a cash flow hedging relationship. The effective portions of *unrealized* changes in the fair values of financial instruments held for hedging are included in other comprehensive income.

3 Long-term investments over which we do not have significant influence are measured at fair value if those fair values can be reliably measured. For accounting recognition and measurement purposes, on an investment-by-investment basis, long-term investments are classified as either fair value through net income or fair value through other comprehensive income (FVOCI).

4 Use of derivative financial instruments is subject to a policy which requires that no derivative transaction is to be entered into for the purpose of establishing a speculative or leveraged position (the corollary being that all derivative transactions are to be entered into for risk management purposes only) and sets criteria for the creditworthiness of the transaction counterparties.

Derivatives that are part of an established and documented cash flow hedging relationship are accounted for as held for hedging. We believe that classification as held for hedging results in a better matching of the change in the fair value of the derivative financial instrument with the risk exposure being hedged.

In respect of hedges of anticipated transactions, hedge gains/losses are included with the related expenditure and are expensed when the transaction is recognized in our results of operations. We have selected this method as we believe that it results in a better matching of the hedge gains/losses with the risk exposure being hedged.

Derivatives that are not part of a documented cash flow hedging relationship are accounted for as held for trading and thus are measured at fair value through net income.

Liquidity risk

As a component of our capital structure financial policies, discussed in *Section 4.3 Liquidity and capital resources*, we manage liquidity risk by: maintaining a daily cash pooling process that enables us to manage our available liquidity and our liquidity requirements according to our actual needs; maintaining an agreement to sell trade receivables to an arm's-length securitization trust; maintaining bilateral bank facilities and syndicated credit facilities; maintaining a commercial paper program; maintaining an in-effect shelf prospectus; continuously monitoring forecast and actual cash flows; and managing maturity profiles of financial assets and financial liabilities.

As at December 31, 2022, TELUS Corporation could offer an unlimited amount of debt or equity securities pursuant to a Canadian shelf prospectus that is in effect until September 2024. TELUS International has a Canadian shelf prospectus under which an unlimited amount of debt or equity securities could be offered and that is in effect until May 2024.

As at December 31, 2022, we had approximately $1.3 billion of liquidity available from the TELUS revolving credit facility and $1.6 billion of liquidity available from the TI credit facility, with conditions precedent upon consummating the WillowTree acquisition, with a syndicate of financial institutions (excluding TELUS Corporation) (see *Section 7.6 Credit facilities*), as well as $500 million available under our trade receivables securitization program (see *Section 7.7 Sale of trade receivables*). Excluding the TI credit facility and including cash and temporary investments of $974 million, we had available liquidity of approximately $2.8 billion at December 31, 2022 (see *Section 11.1 Non-GAAP and other specified financial measures*). This adheres to our objective of generally maintaining at least $1 billion of available liquidity. We believe that our investment-grade credit ratings contribute to reasonable access to capital markets.

Refer to *Note 4* of the Consolidated financial statements for further information regarding our financial instruments.

Commitments and contingent liabilities

Contractual obligations as at December 31, 2022

($ millions)	2023	2024	2025	2026	2027	2028-2032	Thereafter	Total
Short-term borrowings								
Interest obligations	5	5	—	—	—	—	—	10
Principal obligations[1]	4	100	—	—	—	—	—	104
	9	105	—	—	—	—	—	114
Long-term debt								
Interest obligations	884	821	739	692	644	2,328	4,671	10,779
Principal maturities	2,023	2,305	1,061	1,462	1,553	7,601	6,880	22,885
	2,907	3,126	1,800	2,154	2,197	9,929	11,551	33,664
Leases								
Interest obligations	99	80	62	47	33	99	71	491
Principal maturities	497	457	317	226	185	347	293	2,322
	596	537	379	273	218	446	364	2,813
Occupancy costs[2]	129	116	92	76	60	142	59	674
Purchase obligations[3]								
Operating expenditures	409	748	279	275	254	619	5	2,589
Property, plant and equipment, and Intangible assets	283	2	1	1	1	1	—	289
	692	750	280	276	255	620	5	2,878
Non-interest bearing financial liabilities	3,613	254	16	12	1	—	—	3,896
Net payments (receipts) on derivatives used to manage currency risk	(26)	(8)	(13)	(3)	(34)	(78)	(116)	(278)
Other obligations	12	—	—	—	—	—	—	12
Total	7,932	4,880	2,554	2,788	2,697	11,059	11,863	43,773

1 See *Section 7.7 Sale of trade receivables*.

2 Occupancy costs include transactions with real estate joint ventures. See *Section 7.11 Transactions between related parties.*

3 Where applicable, purchase obligations reflect foreign exchange rates at December 31, 2022. Purchase obligations include future operating and capital expenditures that have been contracted for at the current year-end and include the most likely estimates of prices and volumes, where necessary. As purchase obligations reflect market conditions at the time the obligation was incurred for the items being purchased, they may not be representative of future years. Obligations from personnel supply contracts and other such labour agreements have been excluded.

Claims and lawsuits

A number of claims and lawsuits (including class actions and intellectual property infringement claims) seeking damages and other relief are pending against us and, in some cases, other mobile carriers and telecommunications service providers. As well, we have received notice of, or are aware of, certain possible claims (including intellectual property infringement claims) against us and, in some cases, other mobile carriers and telecommunications service providers. (See the related risk discussion in *Section 10.17 Litigation and legal matters*.)

It is not currently possible for us to predict the outcome of such claims, possible claims and lawsuits due to various factors, including: the preliminary nature of some claims; uncertain damage theories and demands; an incomplete factual record; uncertainty concerning legal theories and procedures and their resolution by the courts, at both the trial and the appeal levels; and the unpredictable nature of opposing parties and their demands.

However, subject to the foregoing limitations, management is of the opinion, based upon legal assessments and information presently available, that it is unlikely that any liability, to the extent not provided for through insurance or otherwise, would have a material effect on our financial position and the results of our operations, including cash flows, with the exception of the items disclosed in *Note 29(a)* of the Consolidated financial statements. This is a significant judgment for us (see *Section 8.1 Critical accounting estimates and judgments*).

Indemnification obligations

In the normal course of operations, we provide indemnification in conjunction with certain transactions. The terms of these indemnification obligations range in duration. These indemnifications would require us to compensate the indemnified parties for costs incurred as a result of failure to comply with contractual obligations, or litigation claims or statutory sanctions, or damages that may be suffered by an indemnified party. In some cases, there is no maximum limit on these indemnification obligations. The overall maximum amount of an indemnification obligation will depend on future events and conditions and therefore cannot be reasonably estimated. Where appropriate, an indemnification obligation is recorded as a liability. Other than obligations recorded as liabilities at the time of the related transactions, historically we have not made significant payments under these indemnifications.

As at December 31, 2022, we had no liability recorded in respect of our indemnification obligations.

Status of labour negotiations

In 2021, we commenced collective bargaining with the Telecommunications Workers Union, United Steelworkers Local 1944 (TWU), to renew a collective agreement that expired on December 31, 2021; the contract covered approximately 17% of our Canadian workforce as at December 31, 2022. The expired contract remains in effect while the parties are bargaining, until a new agreement is reached.

During the fourth quarter of 2022, the parties participated in conciliation with an appointed federal conciliator following the TWU's application to the Federal Minister of Labour for assistance in negotiations. The TWU subsequently held a ratification vote on TELUS' offer, which resulted in 65% of union members voting against accepting the proposed contract. Should a new collective agreement not be reached, there is the risk of a labour disruption after all legal pre-conditions have been met. As a labour disruption could occur in multiple forms, the operational and financial impacts of a labour disruption on us are not practicably determinable currently. See *Section 10.11* for further details.

7.10 Outstanding share information

Outstanding shares (millions)	December 31, 2022	January 31, 2023
Common Shares	1,431	1,438
Common Share options	3	3
Restricted share units – equity-settled	8	8

7.11 Transactions between related parties

Transactions with key management personnel

Our key management personnel have authority and responsibility for overseeing, planning, directing and controlling our activities and consist of our Board of Directors and our Executive Team. Total compensation expense for key management personnel was $92 million in 2022, compared to $104 million in 2021. See *Note 30(a)* of the Consolidated financial statements for additional details.

Transactions with defined benefit pension plans

We provided our defined benefit pension plans with management and administrative services on a cost recovery basis and actuarial services on an arm's-length basis. Charges for these services were immaterial.

Transactions with real estate joint venture and associates

In 2022, we had transactions with the TELUS Sky real estate joint venture, which is a related party to us, as set out in *Note 21* of the Consolidated financial statements. The new-build tower was completed in 2020.

For the TELUS Sky real estate joint venture, commitments and contingent liabilities include construction financing ($342 million, with Canadian financial institutions as 66-2/3% lender and TELUS as 33-1/3% lender) under a credit agreement maturing August 31, 2023. We have entered into lease agreements with the TELUS Sky real estate joint venture.

8. Accounting matters

8.1 Critical accounting estimates and judgments

Our significant accounting policies are described in *Note 1* of the Consolidated financial statements for the year ended December 31, 2022. The preparation of financial statements in conformity with generally accepted accounting principles (GAAP) requires management to make estimates, assumptions and judgments that affect: the reported amounts of assets and liabilities at the date of the financial statements; the disclosure of contingent assets and liabilities at the date of the financial statements; and the reported amounts and classification of income and expense during the reporting period. Actual results could differ from those estimates. Our critical accounting estimates and significant judgments are generally discussed with the Audit Committee each quarter.

Refer to *Note 1* of the Consolidated financial statements for further information on our critical accounting estimates, including examples of the significant estimates and judgments that we make, and their relative significance and degree of difficulty, as illustrated in the graphic included in *Note 1*.

General

- In determining our critical accounting estimates, we consider trends, commitments, events or uncertainties that we reasonably expect to materially affect our methodology or assumptions. Our statements in this MD&A regarding such consideration are made subject to the *Caution regarding forward-looking statements*.
- In the normal course, we make changes to assumptions underlying all critical accounting estimates so that they reflect current economic conditions, updated historical information used to develop the assumptions, and changes in our credit ratings, where applicable. Unless indicated otherwise in the discussion below, we expect that no material changes in overall financial performance and financial statement line items would arise either from reasonably likely changes in material assumptions underlying the estimate or from selection of a different estimate from within a range of valid estimates.

- Our critical accounting estimates affect the Consolidated statements of income and other comprehensive income, and the Consolidated statements of financial position, as follows:

	Consolidated statements of income and other comprehensive income						
		Operating expenses					
Consolidated statements of financial position	Operating revenues and other income	Goods and services purchased	Employee benefits expense	Depreciation	Amortization of intangible assets	Financing costs	Employee defined benefit plans re-measurements[1]
Intangible assets, net, and Goodwill, net					X[2]		
Employee defined benefit pension plans			X	X[3]	X[3]	X	X
Property, plant and equipment, net				X			
Provisions for asset retirement obligations		X		X		X	
Provisions related to business combinations	X					X	
Investments	X						
Accounts receivable		X					
Contract assets	X	X					
Inventories		X					

1 Other comprehensive income – Item never subsequently reclassified to income.
2 Accounting estimate, as applicable to Intangible assets with indefinite lives relates to spectrum holdings.
3 Accounting estimate impact due to internal labour capitalization rates.

- All critical accounting estimates are uncertain at the time an estimate is made and affect the following Consolidated statements of income and other comprehensive income line items: Income taxes (except for estimates about Goodwill) and Net income. Similarly, all critical accounting estimates affect the following Consolidated statements of financial position line items: Current assets (Income and other taxes receivable), Current liabilities (Income and other taxes payable), Deferred income taxes and Common equity (retained earnings) and Non-controlling interests. The discussion of each critical accounting estimate does not differ between our two segments, TELUS technology solutions (TTech) and digitally-led customer experiences - TELUS International (DLCX), unless explicitly noted.

Intangible assets, net; Goodwill, net; and Property, plant and equipment, net

General

- The Intangible assets, net, line item represents approximately 35% of Total assets as at December 31, 2022 (36% as at December 31, 2021). Included in Intangible assets are spectrum licences, which represent approximately 23% of Total assets as at December 31, 2022 (25% as at December 31, 2021).

- The Goodwill, net, line item represents approximately 17% of Total assets as at December 31, 2022 and approximately 15% of Total assets as at December 31, 2021.

- The Property, plant and equipment, net, line item on our Consolidated statements of financial position represents approximately 32% of Total assets as at December 31, 2022 and approximately 33% of Total assets as at December 31, 2021.

- If our estimates of the useful lives of assets were incorrect and/or our estimates of the acquisition-date fair value of property, plant, equipment and intangible assets acquired in business combinations were incorrect, we could experience increased or decreased charges for amortization or depreciation in the future. If the future were to differ adversely from our best estimate of key economic assumptions and associated cash flows were to materially decrease, we could potentially experience future material impairment charges in respect of our Property, plant and equipment assets, Intangible assets or Goodwill. If Intangible assets with indefinite lives were determined to have finite lives at some point in the future, we could experience increased charges for amortization of Intangible assets. Such charges in and of themselves do not result in a cash outflow and would not immediately affect our liquidity.

The recoverability of Intangible assets with indefinite lives; *the recoverability of Goodwill*

- The carrying values of Intangible assets with indefinite lives and Goodwill are periodically tested for impairment, and this test represents a significant estimate for us.

- The recoverable amounts of the cash-generating units' assets have been determined based on a fair value less costs of disposal calculation. There is a material degree of uncertainty with respect to the estimates of the recoverable amounts of the cash-generating units' assets, given the necessity of making key economic assumptions about the future. The fair value less costs of disposal calculation uses future cash flows and growth projections; associated economic risk assumptions and estimates of the likelihood of achieving key operating metrics and drivers; estimates of future generational infrastructure capital expenditures; and the future weighted average cost of capital.

- See *Note 18(f)* of the Consolidated financial statements for further discussion of methodology and sensitivity testing.

The estimated useful lives of assets; the recoverability of tangible assets

- The estimated useful lives of most assets are determined by a continuing program of asset life studies. The recoverability of assets with finite lives is significantly impacted by the estimated useful lives of assets.

- Assumptions underlying the estimated useful lives of assets include the timing of technological obsolescence, competitive pressures and future infrastructure utilization plans.

Employee defined benefit pension plans

Certain actuarial and economic assumptions used in determining defined benefit pension costs, accrued pension benefit obligations and pension plan assets

- We review industry practices, trends, economic conditions and data provided by actuaries when developing assumptions used in the determination of defined benefit pension costs and accrued pension benefit obligations. Pension plan assets are generally valued using market prices; however, some assets are valued using market estimates when market prices are not readily available. Actuarial support is obtained for interpolations of experience gains and losses that affect the employee defined benefit plan actuarial gains and losses and accrued pension benefit obligations. The discount rate used to determine the accrued benefit obligation is based upon the yield on long-term, high-quality, fixed-term investments. The discount rate is set annually at the end of each calendar year, at a minimum, based upon yields on long-term corporate bond indices in consultation with actuaries. Future increases in compensation are based upon the current benefits policies and economic forecasts. We have examined our respective pension obligation and current service cost durations and observed an approximate 10-year difference in duration. As individual discount rates more accurately reflect the obligation and current service cost, commencing in 2016, we applied a dual discount rate methodology.

- On an annual basis, at a minimum, the defined benefit pension plan assumptions are assessed and revised as appropriate. Assumptions used in determining defined benefit pension costs, accrued pension benefit obligations and pension plan assets include life expectancy, discount rates, market estimates and rates of future compensation increases. Material changes in overall financial performance and financial statement line items would arise from reasonably likely changes in the material assumptions underlying this estimate, since certain assumptions may have been revised to reflect updated historical information and updated economic conditions. See *Note 15* of the Consolidated financial statements for further analysis.

- This accounting estimate related to employee defined benefit pension plans is in respect of components of the Operating expenses line item, Financing costs line item and Other comprehensive income line item on our Consolidated statements of income and other comprehensive income. If the future were to adversely differ from our best estimate of assumptions used in determining defined benefit pension costs, defined benefit obligations accrued and pension plan assets, we could experience future increased (or decreased) defined benefit pension expense, financing costs and charges to Other comprehensive income.

Income tax assets and liabilities

The amount and composition of income tax assets and income tax liabilities, including the amount of unrecognized tax benefits

- Assumptions underlying the composition of income tax assets and liabilities are based upon an assessment of the technical merits of tax positions. Income tax benefits on uncertain tax positions are recognized only when it is more likely than not that the ultimate determination of the tax treatment of a position will result in the related benefit being realizable; however, this does not mean that tax authorities cannot challenge these positions. Income tax assets and liabilities are measured at the amount that is expected to be realized or incurred upon ultimate settlement with taxation authorities. Such assessments are based upon the applicable income tax legislation, regulations, interpretations and jurisprudence, all of which in turn are subject to change and interpretation.

- Current income tax assets and liabilities are estimated based upon the amount of income tax that is calculated as being owed to taxation authorities, net of periodic instalment payments. Deferred income tax liabilities are composed of the tax effect of temporary differences between the carrying amount and tax basis of assets and liabilities, as well as the income tax effect of undeducted income tax losses. The timing of the reversal of temporary differences is estimated and the income tax rate substantively enacted for the periods of reversal is applied to the temporary differences. The carrying amounts of assets and liabilities are based upon the amounts recorded in the financial statements and are, therefore, subject to accounting estimates that are inherent in those balances. The tax basis of assets and liabilities, as well as the amount of undeducted income tax losses, is based upon the assessment and measurement of tax positions, as noted above. Assumptions as to the timing of reversal of temporary differences include expectations about the future results of operations and future cash flows. The composition of income tax liabilities is reasonably likely to change from period to period because of changes in the estimation of these significant uncertainties.

- This accounting estimate is in respect of material asset and liability line items on our Consolidated statements of financial position comprising less than 1% of Total assets as at December 31, 2022 and 2021, and approximately 8% of Total liabilities and owners' equity as at December 31, 2022 (9% as at December 31, 2021). If the future were to adversely differ from our best estimate of the likelihood of tax positions being sustained, the amount of tax expected to be incurred, the future results of operations, the timing of reversal of deductible temporary differences and taxable temporary differences, and the tax rates applicable to future years, we could experience material current income tax adjustments and deferred income tax adjustments. Such current and deferred income tax adjustments could result in an increase or acceleration of cash outflows at an earlier time than might otherwise be expected.

Provisions for asset retirement obligations

Certain economic assumptions used in provisioning for asset retirement obligations

- Asset retirement obligation provisions are recognized for statutory, contractual or legal obligations, normally when incurred, associated with the retirement of Property, plant and equipment (primarily certain items of outside plant and mobile site equipment) when those obligations result from the acquisition, construction, development and/or normal operation of the assets. The obligations are measured initially at fair value, determined using present value methodology, and the resulting costs are capitalized as a part of the carrying value of the related asset.

- On an annual basis, at a minimum, assumptions underlying the provisions for asset retirement obligations include expectations about inflation, discount rates and any changes in the amount or timing of the underlying future cash flows, which may span numerous decades. Material changes in financial position would arise from reasonably likely changes in the material assumptions underlying this estimate, since certain assumptions may have been revised to reflect updated historical information and updated economic conditions. The capitalized asset retirement cost is depreciated on the same basis as the related asset, and the discount accretion is included in the Consolidated statements of income and other comprehensive income as a component of Financing costs.

- This accounting estimate is in respect of the asset retirement obligations component of the Provisions line item on our Consolidated statements of financial position, and this component comprises approximately 1% of Total liabilities and owners' equity as at December 31, 2022 (1% as at December 31, 2021). If the provisions for asset retirement obligations were to be inadequate, we could experience a charge to Goods and services purchased in the future. A charge for an inadequate asset retirement obligation provision would result in a cash outflow proximate to the time that the asset retirement obligation is satisfied.

Provisions related to business combinations

Provisions for written put options

- In connection with certain business acquisitions, we have established provisions for written put options in respect of non-controlling interests. We provide written put options to the remaining selling shareholders under which they could put the remaining non-controlling interests at, or after, a specified date. The acquisition-date fair values of the puttable shares held by the non-controlling shareholders are recorded as provisions.

- On an annual basis, at a minimum, the provisions for written put options are assessed and revised as appropriate. The provisions for written put options have been determined based on the net present values of estimated future earnings results; there is a material degree of uncertainty with respect to the estimates of future earnings results, given the necessity of making significant economic assumptions about the future. The amounts of provisions for written put options are reasonably likely to change from period to period because of changes in the estimation of future earnings and foreign exchange rate movements.

- This accounting estimate is in respect of the provisions for written put options related to the non-controlling interests component of the Provisions line item on our Consolidated statements of financial position, and this component comprises less than 1% of Total liabilities and owners' equity as at December 31, 2022 and 2021. If the provisions for written put options were to be inadequate, we could experience a charge to Other income in the future. A charge for an inadequate written put option provision would result in a cash outflow proximate to the time that the written put option is exercised.

Investments

The recoverability of long-term investments

- We assess the recoverability of our long-term investments on a regular, recurring basis. The recoverability of investments is assessed on a specific-identification basis, taking into consideration expectations about future performance of the investments and comparison of historical results to past expectations.

- The most significant assumptions underlying the recoverability of long-term investments are related to the achievement of future cash flow and operating expectations. Our estimate of the recoverability of long-term investments could change from period to period due to the recurring nature of the recoverability assessment and due to the nature of long-term investments (we do not control the investees).

- Investments are included in the Other long-term assets line item on our Consolidated statements of financial position, which itself comprises approximately 4% of Total assets as at December 31, 2022 (2021 – 4%). If the allowance for recoverability of long-term investments were to be inadequate, we could experience an increased charge to Other income or Other comprehensive income depending on the financial asset classification. Such a provision for recoverability of long-term investments does not result in a cash outflow.

Accounts receivable

General

- When determining our allowance for doubtful accounts, we consider the business area that gave rise to the Accounts receivable, conduct a statistical analysis of portfolio delinquency trends and perform specific account identification.

- These accounting estimates are in respect of the Accounts receivable line item and the Unbilled customer finance receivables line within the Other long-term assets line item on our Consolidated statements of financial position, which together comprise approximately 7% of Total assets as at December 31, 2022 (7% as at December 31, 2021). If the future were to differ adversely from our best estimates of the fair value of the residual cash flows and the allowance for doubtful accounts, we could experience an increase in doubtful accounts expense in the future. Such doubtful accounts expense in and of itself does not result in a cash outflow.

The allowance for doubtful accounts

- The estimate of our allowance for doubtful accounts could materially change from period to period because the allowance is a function of the balance and composition of Accounts receivable, which can vary on a month-to-month basis. The variability of the balance of Accounts receivable arises from the variability of the amount and composition of Operating revenues and other income and from the variability of Accounts receivable collection performance.

Contract assets

General

- We maintain allowances for lifetime expected credit losses related to contract assets. Current economic conditions, historical information (including credit agency reports, if available), and the line of business from which the contract asset arose are all considered when determining impairment allowances. The same factors are considered when determining whether to write off amounts charged to the impairment allowance for contract assets against contract assets.

The impairment allowance

- These accounting estimates are in respect of the Contract assets line items on our Consolidated statements of financial position, which comprise approximately 2% of Total assets as at December 31, 2022 and 2021. If the future were to differ adversely from our best estimates of the fair value of the residual cash flows and the impairment allowance for contract assets, we could experience an increase in the impairment allowance for contract assets against contract assets in the future. Such impairment allowance in and of itself does not result in a cash outflow.

Inventories

The allowance for inventory obsolescence

- We determine our allowance for inventory obsolescence based upon expected inventory turnover, inventory aging, and current and future expectations with respect to product offerings.

- Assumptions underlying the allowance for inventory obsolescence include future sales trends and offerings and the expected inventory requirements and inventory composition necessary to support these future offerings. Our estimate of the allowance for inventory obsolescence could change materially from period to period due to changes in product offerings and the level of consumer acceptance of those products.

- This accounting estimate is in respect of the Inventories line item on our Consolidated statements of financial position, which comprises approximately 1% of Total assets as at December 31, 2022 and 2021. If the allowance for inventory obsolescence were to be inadequate, we could experience a charge to Goods and services purchased in the future. Such an inventory obsolescence charge does not result in a cash outflow.

8.2 Accounting policy developments

Refer to *Note 2* of the Consolidated financial statements for a description of current and future changes in accounting policies, including standards, interpretations and amendments to standards and interpretations in the reporting period not yet effective and not yet applied.

9. General trends, outlook and assumptions, and regulatory developments and proceedings

This section contains forward-looking statements, which should be read together with the *Caution regarding forward-looking statements* at the beginning of this MD&A.

9.1 Telecommunications industry in 2022

We estimate that Canadian telecommunications industry revenues (including TV revenue and excluding equipment and media revenue) increased by approximately 4%. Mobile and data services continue to drive ongoing industry growth. Additionally, consumer communications and data consumption behaviours continue to demonstrate a strong preference for data-rich applications and data-intensive devices, including smartphones and tablets. From the beginning of the COVID-19 pandemic in March 2020 through fiscal 2021, revenue growth across the telecommunications industry was limited, particularly related to roaming revenue due to travel restrictions and changing consumer behaviour associated with travelling. However, with the easing of COVID-19-related travel restrictions in 2022, the industry experienced roaming volumes returning to pre-pandemic period levels, particularly within the consumer segment, supporting higher roaming revenues in 2022 that were above pre-pandemic levels.

Mobile products and services

We estimate that in 2022, the Canadian mobile industry experienced mobile network revenue growth of approximately 6.8%, which we believe was attributable to ongoing customer growth and increased roaming revenues due to the ongoing recovery after the first two years of the pandemic. We estimate that the Canadian mobile phone industry added approximately 1.7 million net new subscribers in 2022 (inclusive of TELUS' mobile phone additions), compared to an estimate of approximately 1.2 million in 2021 for the industry. This was supported by immigration and population growth; the trend toward multiple devices; the expanding functionality of data and related applications; and the ongoing adoption of mobile devices and services. Various public health measures in place during the pandemic in 2020 and 2021 led to pent-up demand for mobile devices in 2022. We estimate that the Canadian mobile phone penetration rate increased to over 102% in 2022, with further increases in penetration expected in 2023. By comparison, the mobile phone penetration rate in the United States is well over 100%, while in Europe and Asia it is even higher, suggesting an opportunity for continued growth in Canada. TELUS' mobile network revenue increased by 6.2% in 2022, and TELUS mobile products and services direct contribution increased by 7.1%.

In 2022, the Canadian mobile market continued to recover from the challenges related to the pandemic. Growth in blended average revenue per subscriber unit per month (ARPU) had been moderating as carriers migrated their customer bases to unlimited data plans. However, pandemic impacts, particularly related to roaming, had subsided as consumer segment travel volumes largely returned to pre-pandemic levels. Additionally, with members of the workforce returning to traditional work environments, workers offloading their mobile device traffic onto Wi-Fi had moderated, resulting in increased domestic chargeable data usage. The Canadian mobile market continued to experience increased levels of competition nationally. This high level of competitive intensity has led to continued declines in chargeable data usage and larger allotments of data, in addition to other factors, such as: the popularity of data sharing plans; more frequent customer-friendly data usage notifications; and an evolving shift in the customer mix towards non-traditional mobile devices and tools such as video chats. These factors, combined with increases in overall data usage, which is expected to grow dramatically with the ongoing commercialization of 5G, led to widespread adoption and promotion of unlimited data plans and device financing plans by all national carriers. The build-out of 5G network infrastructure continued in 2022, with 5G coverage of approximately 80% of the Canadian population by the national carriers at the end of 2022, compared to approximately 70% at the end of 2021. For TELUS, our accelerated 5G investments are underpinned by our accelerated broadband build program, which was pre-funded by our equity offering in March 2021 and continued in 2022. Our long-standing commitment to network excellence is reflected in multiple independent third-party awards and recognition received in 2022, including from independent global analytics company Opensignal and U.S.-based Ookla, each for six consecutive years, and from Canadian-based Tutela, for four years in a row.

We continue to work diligently to better monetize robust growth in data services, while simultaneously delivering a strong value-for-money proposition and leading customer service to our customers. To this end, we are focusing intensively on profitable customer growth and strong ARPU performance through our consistent strategic execution of premium smartphone loading, which includes driving higher-value data and share plan adoption, as well as flexible product offerings, including bundling our mobility and home services. Moreover, we are focusing on the other levers available to us in an environment of moderating ARPU growth and expanding 5G network infrastructure, to ensure we continue to deliver on our TELUS technology solutions (TTech) EBITDA growth objectives, including:

- Evolving our approach to mobile plans and device sales with the availability of Unlimited data plans on our 5G network, TELUS Easy Payment device financing, TELUS Family Discount offerings and wide selection of certified pre-owned devices, which have resulted in simplification for both customers and team members, while supporting growth in digital transactions and improved recovery of handset costs
- Monetizing our expanding 5G network by driving customer step-ups to higher-value unlimited data plans along with using speed tiers to encourage customer adoption of faster 5G speeds; launch of Koodo Pick Your Perks, giving customers the opportunity to add a free feature of their choosing, driving ARPU step-ups; in addition to marketing our innovative product and service offerings, including the launch of Stream+, a premium streaming bundle that combines Netflix Premium, Apple TV+ and discovery+
- Continuing to drive volume growth through high-quality loading on the back of strong ongoing industry growth, including 5G device upgrades
- Seeking new sources of wireless revenue, such as Internet of Things (IoT) or Internet of Everything, machine-to-machine (M2M) and security applications in the business-to-business (B2B) market, including health, agriculture and smart cities
- Exploring and securing new channel strategies associated with attractive economic characteristics, including our certified pre-owned device program
- Pursuing smart bundling opportunities across mobile and fixed products and services to achieve better economies of scope and enhance lifetime revenue per customer from higher revenue per account and lower customer churn
- Working persistently to enhance the efficiency of the flow from revenue to EBITDA, or the flow from ARPU to average margin per subscriber unit per month (AMPU), in order to buttress and enhance our operating margins, including ongoing efficiency and effectiveness initiatives.

The Canadian mobile industry continues to be highly competitive and capital-intensive, with carriers continuing to expand and enhance their broadband mobile networks, including the ongoing build-out of 5G, as well as material investments in spectrum.

Fixed products and services

As with the Canadian mobile industry, fixed markets and operations were affected by the COVID-19 pandemic, particularly during its earlier waves. Physical distancing requirements impacted traditional fixed installations, as installers were not entering customers' premises. Conversely, with large numbers of workers and students working and learning from home, demand for fixed products and services surged, with traffic levels reaching historic levels during the pandemic. Although the consumer high-speed internet market is maturing, with a penetration rate of approximately 90% in Western Canada and 91% across Canada at the end of 2022, subscriber growth is expected to continue over the coming years. The four major cable-TV companies had an estimated 7.54 million internet subscribers at the end of 2022 (48% market share – down 0.6 percentage points), from approximately 7.38 million subscribers at the end of 2021. Meanwhile, telecommunications companies had approximately 7.92 million internet subscribers (51% market share – up 0.7 percentage points), from approximately 7.55 million at the end of 2021. We continue to make gains in market share as a result of the ongoing expansion of our TELUS PureFibre infrastructure and the pull-through of subscribers from our IP-based TELUS TV services (Optik TV and Pik TV), including our bundled mobility and home services, as well as significant growth in home security and automation. Our ongoing focus on fibre to the premises or home (FTTP/FTTH) has allowed us to connect approximately 3.0 million households and businesses in B.C., Alberta and Eastern Quebec as of December 31, 2022 to our TELUS PureFibre technology. Similar to our accelerated 5G investments, our investments to expand our fibre footprint are supported by our accelerated broadband build program, which commenced in 2021 and continued into 2022, while capital expenditures on a consolidated basis are expected to decline significantly in 2023. Additionally, we received recognition from PCMag as the fastest internet service provider (ISP) in Canada among major ISPs for the third consecutive year.

While Canadians still watch conventional TV, digital platforms are playing an increasingly important role in the broadcasting industry and in respect of content. Popular online video services are providing Canadians with more choice about where, when and how to access video content. In 2022, Canadian IP TV providers increased their subscriber base by an estimated 4% to 3.4 million, or 34% of market share, up from 32% at the end of 2021, through expanded network coverage, enhanced differentiated service and bundled offerings, and marketing and promotions focused on IP TV. Despite this IP TV growth, the combined cable-TV and satellite-TV subscriber penetration rate was unchanged. We estimate that the four major cable-TV companies had approximately 4.8 million TV subscribers or a 48% market share at the end of 2022, flat compared to 48% at the end of 2021.

In recent years, three of the largest Canadian cable-TV companies have launched new TV services based on the Comcast X1 TV platform, including Shaw, Rogers and Quebecor's Videotron brand. Our IP-based Optik TV platform continues to offer numerous service advantages compared to this cable platform, including: flexible pricing plans and packaging available to all customers; picture clarity and quality; content depth and breadth, including multicultural and hard-to-find shows from abroad, as well as speciality options such as wellness and entertainment; the number of ways customers can access content, including wireless set-top boxes, Restart TV, higher-capacity PVR and the Optik TV app, which offers more than twice as many live TV channels at home or on the go compared to our largest Western Canadian cable competitor. The TELUS PureFibre network was named the number one network for streaming Netflix for 17 consecutive months prior to the start of the COVID-19 pandemic (based on the Netflix ISP Speed Index rankings for Canadian providers released monthly, as of March 2020) and we are the only Canadian carrier to consistently achieve a number one ranking for each month from August 2020 to December 2022 for the newly revamped index. We continue to offer more on-demand content and more over-the-top (OTT) content with Netflix, YouTube, Prime Video (included in the Amazon Prime membership), hayu, TED Talks and the National Film Board of Canada, and we are the multicultural content leader in Western Canada.

The national Canadian telecom providers continue to acquire and develop capabilities in home security and automation. Through various acquisitions, including the Canadian operations of Vivint Smart Home, Inc. in 2022, ADT Security Services Canada, Inc. in 2019, and other smaller tuck-ins, we have furthered our commitment to leverage the power of technology to bring state-of-the-art convenience, control and safety into the lives, homes and businesses of more Canadians to become Canada's leading security and home automation provider. Security also provides opportunities to offer attractive bundled solutions and advance our connected home strategy while accelerating our entry into the market for smart home and automation and physical and cybersecurity business solutions. Our SmartHome Security and TELUS Secure Business service offerings complement our industry-leading customer service and build on our strategy and commitment to leverage our world-leading wireless and PureFibre network, enabling us to enhance connected home, business, security, IoT, cybersecurity, smart buildings, smart cities and health services for customers in Canada.

Canada's four major cable-TV companies had an estimated base of approximately 2.8 million telephony subscribers at the end of 2022. This represents a national consumer market share of approximately 41%, down compared to approximately 42% at the end of 2021. Telecommunications companies had an estimated 3.4 million telephony subscribers at the end of 2022, representing a market share of approximately 49%, relatively flat compared to approximately 49% at the end of 2021. Technological substitution by mobile services is continuing to erode the number of residential voice subscribers and associated local and long distance revenues, as expected.

TELUS Health

In 2022, we continued to drive strong growth within our industry-leading health business, complemented by the September 2022 acquisition of LifeWorks, as well as the ongoing adoption of our unique and innovative portfolio of health and well-being offerings across the health ecosystem. Health services revenue increased by 75.2% to $913 million in 2022. At a time when demand for health and well-being services has never been higher, the combination of TELUS Health and LifeWorks is improving health outcomes and providing better preventive health and wellness experiences for people worldwide. Employers are leading an evolution in healthcare – from prevention to care delivery -- representing a significant global growth opportunity for TELUS Health. We are simplifying our offerings for the market by bringing employee and family assistance programs (EFAP), mental health and well-being solutions together.

Additionally, the Canadian healthcare industry is expected to continue to realize strong growth in future years, based on an aging population in Canada, an increasing emphasis on chronic disease management, and the potential benefits that technology can deliver in terms of efficiency and effectiveness within the sector. Prior to the pandemic, the healthcare industry saw an emerging trend for physicians and other healthcare professionals to use smartphones and connected devices to access patient records from remote locations. Since the COVID-19 lockdown measures were first put into place in 2020, adoption of healthcare technology has accelerated, as clinicians have adapted to primarily virtual and tele-medicine-based practices, resulting in the overall Canadian healthcare technology market growing at a double-digit pace, well beyond the rate initially predicted at the beginning of 2020. The digitization of everyday functions within the health ecosystem, combined with increased and pervasive broadband network connectivity, provides a unique opportunity to support the development and delivery of even more advanced health and wellness applications to benefit Canadians and improve health and well-being outcomes. Along with digital healthcare delivery, TELUS Health is supporting the delivery of EFAP through digital enhancements. With these added solutions, TELUS Health is providing meaningful interventions to improve employee outcomes in mental and physical well-being.

TELUS Agriculture & Consumer Goods

The global agriculture industry and global food industry are estimated to have an overall value of approximately $12 trillion and $9 trillion, respectively. It is estimated that global food supplies will need to increase by as much as 70% over the next 30 years, simply to keep pace with a world whose population is growing in numbers and in wealth. The agricultural sector historically has been antiquated with minimal change in business practices and limited software solutions to drive valuable data insights to make processes more efficient. With increasing pressures from our growing population, consumer packaged goods companies, retailers and producers around the globe are leveraging new, innovative digital technologies to manage their operations efficiently. Access to data insights can provide our customers, and the larger value chain, with significant resource, time and cost savings, while improving the safety, quality, traceability and sustainability of outputs. We continue to advance our position to transform producer-to-consumer outcomes by targeting the most urgent needs across the value chain.

Digitally-led customer experiences – TELUS International (DLCX)

In 2022, TI continued to win business with both new and existing clients, driving solid organic growth while maintaining leading margins. With more than 650 clients, TI partners with major global and disruptive brands, with a focus on designing, building and delivering premium digital solutions. With exposure to industry verticals such as tech and games, eCommerce and fintech, as well as more traditional industries, such as banking, financial services and insurance, TI is positioned for continued long-term success. TI's end-to-end capabilities address multiple client needs, including digital customer experience management, digital transformation of IT and customer experience systems, as well as new-economy services such as digital trust and safety and AI data services. The necessity of moderating content on digital platforms has prompted enterprises to seek out specialized services that can help them accommodate changes in a dynamic, uncertain and often highly regulated environment driven by user-generated content. The demand for AI data services historically has been driven by large technology companies; however, demand from other enterprises is growing as AI adoption increases. In early 2023, TI completed its acquisition of WillowTree, a premier, full-service digital product provider focused on end-user experiences, such as native mobile applications and unified web interfaces. The acquisition of WillowTree brings key tech talent, including digital strategists, designers, engineers and project managers, and diversity to TI's portfolio of next-generation solutions, and further augments its digital product offerings and innovative client-centric software development capabilities.

9.2 Telecommunications industry general outlook and trends

Mobile products and services

Mobile growth continues to be driven by increasing data usage and adoption, including: higher-value smartphones, unlimited data offerings, shared family data plans, and growth in IoT and M2M devices. In addition, consumers continue to replace fixed access with mobile access and related data services. These trends are expected to continue to drive a growing demand for mobile data services for the foreseeable future, particularly as the industry continues to shift to 5G. Industry ARPU is expected to continue growing at a more moderate rate than 2022, compared to periods prior to the COVID-19 pandemic, particularly considering that roaming revenues have returned to pre-pandemic levels.

While LTE and LTE advanced (LTE-A) technologies increase download speeds, encourage data usage and enhance the customer experience, growth in data traffic poses challenges to mobile access technology. To better manage this data traffic, Canadian providers continue to evolve their networks and deploy spectrum to support the shift to 5G. In 2022, the industry, including TELUS, began to operationalize 3500 MHz spectrum acquired in 2021, enabling faster data speeds and increased capacity. We expect the 3800 MHz and millimetre wave (mmWave) spectrum auctions held by Innovation, Science and Economic Development Canada (ISED) to commence in 2023 and 2024, respectively, and these will be important to the expansion of 5G networks.

IoT technologies connect communications-enabled devices via wireless technologies, allowing them to exchange key information and share processes. Advanced platforms and networks are already in place in industries such as healthcare, utilities, agriculture and fleet management, with deployment ongoing in other sectors, including smart cities, vehicle insurance, retail, food services, consumer utilities, and connected vehicles. These and other industries are looking to IoT, combined with other applications, to digitally transform themselves and generate value from their connections. IoT represents a meaningful opportunity for growth in mobility products and services, with secure connectivity, customer value, productivity and efficiency. While IoT applications generally have lower ARPU when sold as a stand-alone product, they tend to generate high service volumes with low or no subsidy costs, thereby supporting both revenue growth and margins. In 2022, we added 368,000 connected devices, bringing our connected device subscriber base to approximately 2.5 million, up 15.7% from 2021.

5G has begun to play a mainstream role in technology evolution and innovation globally, and is an important component of meeting Canada's and TELUS' social impact-oriented efforts to further bridge the digital divide and connect rural Canadians. Investing in 5G will drive capital expenditure savings by allowing us to provide high-speed mobile internet services in less urban areas, as well as improved cost savings and innovative services in industrial automation, transportation and telehealth. Driven by significantly faster speeds, lower latencies, improved reliability and attractive economics, 5G will enable a host of new applications: for businesses, 5G will create opportunities for enhanced productivity, virtual work and profitability; for industries, 5G will enable remote operations, industrial control and manufacturing automation; for consumers, home automation, autonomous vehicles, and wireless-to-the-home connectivity with speeds comparable to fixed access technologies; for healthcare, converged solutions for hospitals, clinics and remote patient monitoring – and potentially medical procedures; and for agriculture and consumer goods, autonomous farm equipment, precision agronomy, food traceability and real-time data insights. 5G is essential to the future of a global digital economy, including Canada's, and is expected to generate significant innovation, growth and productivity. 5G wireless technology is up to 100 times faster than 4G LTE technology. As the 5G ecosystem evolves, it will move from a non-stand-alone core, based on the existing 4G LTE infrastructure, to a stand-alone core, which makes use of cloud-based technology, enabling new functionality through the capacity to support more connected devices and ultra-low latency. In 2022, we started to see 5G stand-alone adoption from early adopters globally. The industry expects to see functionality and 5G stand-alone adoption progress further in 2023.

Delivering a robust and reliable 5G experience for Canadians will require complementary spectrum bands to support the needs of a diverse subscriber base, consisting of a portfolio of low, mid and high-band spectrum. Low-band spectrum, such as 600 MHz, covers wide areas and penetrates buildings effectively, thus improving coverage in urban and suburban areas. This low-band spectrum will play a vital role in bringing 5G to Canadians and as such, it is an important resource for Canada, as wireless operators build out 5G in rural areas. High-band spectrum, such as mmWave, can deliver up to 100 times faster than 600 MHz spectrum; however, it does not have the same coverage characteristics to penetrate well into buildings or cover wide areas. This high-bandwidth spectrum and the associated faster connection speeds will help unlock new technologies, such as virtual and augmented reality, and provide a fibre-like experience for fixed wireless access. Mid-band spectrum, such as the 3500 MHz and 3800 MHz bands, is important to the 5G ecosystem, as it balances both speed and coverage characteristics. This spectrum will be integral to low-latency communications services, including autonomous monitoring, fixed wireless access and vehicle-to-everything communication. Trials have shown mid-band spectrum to be key for broader 5G coverage and capacity and is increasingly being used globally for 5G coverage. The 3500 MHz and 3800 MHz spectrum bands are globally recognized as key for 5G networks. All of the national carriers in Canada commenced rolling out their initial 5G services in 2020 and accelerated the roll-out in 2021 and 2022, and are expected to continue in the years ahead as spectrum is auctioned and deployed, along with the roll-out of new 5G technologies. See *Section 9.4 Communications industry regulatory developments and proceedings* for further details on upcoming spectrum auctions.

Fixed products and services

The fixed telecommunications market is expected to remain very competitive in 2023. Technology substitution, including the growth of mobile and voice over IP (VoIP) services, is expected to continue to replace higher-margin legacy voice revenues, while digital streaming services and other online content providers are expected to impact traditional linear TV services. In our incumbent operating areas of B.C. and Alberta, it is estimated that in 2022, 63% of households no longer had a fixed line and 39% of households no longer had a linear TV service. We are a key provider of these substitution services and the decline in this legacy business is continuing as expected, although residential voice losses continued to slow in 2022, reflecting our success in bundling our home solutions and services. Our long-standing growth strategy remains focused on mobile, data and IP-centric fixed capabilities.

The popularity of viewing TV and on-demand content anywhere, particularly on handheld devices, is expected to continue to grow as customers adopt services that enable them to view content on multiple screens. Streaming media providers continue to enhance OTT and direct-to-consumer (DTC) streaming services in order to compete for a share of viewership, as viewing habits and consumer demand evolve. Studies suggest that approximately 80% of Canadians subscribe to, or have access to, paid OTT video service subscriptions in Canada at the end of 2022. The launch of streaming TV services is expected to continue in Canada.

Conventional TV content providers are monitoring OTT developments and evolving their content and market strategy to compete with these new offerings. Bell Media offers a content streaming service through its expanded Crave offering. We view OTT as an opportunity to add further capabilities to our linear and on-demand assets, providing customers with flexible options to choose the content they want and encourage greater customer use of our high-speed internet and mobile services and to limit customer frustration at needing to have a multitude of subscriptions, and continue to partner with and offer services from a wide range of OTT providers. With our launch of Stream+, customers can enjoy their favourite shows and movies in the comfort of their home or while on-the-go, powered by our award-winning mobile network.

Consistent with facilities-based competition, telecommunications companies continue to make significant capital investments in broadband networks, with a focus on FTTP to maintain and enhance their ability to support enhanced IP-based services and higher broadband speeds. Cable-TV companies continue to evolve their cable networks with DOCSIS-related bandwidth enhancements and node splitting. Although this platform increases speed in the near term and is cost-efficient, it does not offer the same advanced capabilities as FTTP over the longer term, such as fast symmetrical upload and download speeds. At the end of 2022, our fibre-optic infrastructure was available to approximately 3.0 million homes and businesses. Advances in LTE mobile technology and our extensive LTE infrastructure also allow us to target otherwise underserved areas with a fixed mobile solution, and 5G is expected to enhance these capabilities.

Our broadband investments, including the build-out of our FTTP broadband network and our premium differentiated IP-based Optik TV service, as well as lower-cost Pik TV service, home security and automation and integrated bundled service offerings, which also encompass mobility, consumer healthcare and cybersecurity, continue to enhance our competitive position relative to our competitors. Our bundled offerings drive higher product intensity with our customers and lead to improved customer loyalty results.

In the business market (enterprise and small and medium-sized businesses, or SMB), the convergence of IT and telecommunications, facilitated by the ubiquity of IP, continues to shape the competitive environment, with non-traditional providers increasingly blurring the lines of competition and business models. Cable-TV companies continue to make investments to better compete in the highly contested SMB space. Telecommunications companies like TELUS are providing network-centric managed applications that leverage their significant FTTP investments, while IT service providers are bundling network connectivity with their proprietary software as service offerings. The pandemic continued to negatively impact our SMB customer base in 2022, although to a lesser extent than in 2020 and 2021.

The development of IP-based platforms providing combined IP voice, data and video solutions creates potential cost efficiencies that compensate, in part, for the loss of margins resulting from the migration from legacy to IP-based services. New opportunities exist for integrated solutions, as well as business process and IT outsourcing, that could have a greater business impact than legacy telecommunications services. Data security represents both a challenge and an opportunity for TELUS to provide customers with our data security solutions. Increasingly, businesses are looking to partner with their communications service provider to address their business goals and challenges, and to tailor cloud-based solutions for their needs that leverage telecommunications in ways not imagined a decade ago. Cloud computing is changing service delivery to always-on and everything-as-a-service, and strong growth is expected in this area. We offer Network-as-a-Service capabilities for businesses with the option of an IT network as a service over the internet, mirrored across multiple locations, based on a self-serve platform that reduces deployment cycles and reliance on IT specialists. Our home and business security offerings are powered by our broadband network and integrate the latest smart devices to improve the lives of Canadians.

As the industry evolves to 5G mobile technologies in the coming years, we expect to be operating on, and providing services over, a more converged network. The lines between fixed access and mobile access will continue to blur, as the way we deliver services to customers – and the way our customers use those services – continues to evolve. As our broadband network continues to expand and 5G is further commercialized in the coming years, we expect to benefit from the flexibility of being able to select the most efficient way to deliver services across our footprint. 5G is also expected to be a solution for fixed wireless access in certain areas within our incumbent footprint.

TELUS Health

Through TELUS Health, we are leveraging our position as the leading end-to-end provider of digital health and well-being solutions in Canada and our expanding broadband network technologies such as fibre and 5G to increase access, integration and effectiveness for our innovative health and wellness tools and applications across the primary and preventative care ecosystem in order to continue positioning ourselves for anticipated strong continued growth domestically and internationally. These solutions include virtual care applications, personal health records to empower self-management of healthcare data, electronic drug prescriptions with online insurance validation by the physician, and home health monitoring devices and data capture with caregiver oversight. Operating under TELUS Health Virtual Care, our national, employer-focused virtual care services allow patients 24/7 bilingual and unlimited access to healthcare practitioners for the mental and physical care they need, from anywhere in the country. In September 2022, we significantly expanded TELUS Health's vision of employer-focused healthcare with the acquisition of LifeWorks. This acquisition solidified TELUS Health as a global leader in EFAP and data-driven preventive health, wellness and mental healthcare. Focused on a digital-first but not digital-only model of care, combining with LifeWorks allows us to focus on scale, our global profile, and quality health and well-being outcomes. This acquisition not only reinforces LifeWorks' Canadian and global operations, but also leverages our significant TELUS and TELUS International footprint to enable cross-selling opportunities, extending an enhanced suite of TELUS Health product offerings globally.

In Canada, our TELUS Health MyCare application is transforming consumer access to healthcare. With innovative AI-powered preventative health app features (available in English and French) such as the Symptom Checker, Monitor and Health Check, users can get information about their health and, if required, speak directly to a licensed physician with the convenience of a smartphone in multiple languages across B.C., Alberta, Saskatchewan and Ontario. TELUS Health MyCare also has two physical clinics in B.C. and one in Quebec to augment our digital first approach. Together, these virtual care solutions and capabilities are empowering Canadians to better manage their health and get the care and information they need when it is convenient for them – a huge step forward in the evolution of Canada's healthcare system from the current status quo. In 2020, TELUS Health enabled Canadian practitioners to conduct virtual visits with their patients by integrating patient videoconferencing into its electronic medical records (EMR) offering across Canada. This capability has been augmented by the acquisition of InputHealth Systems Inc. and its Collaborative Health Record (CHR) – a cloud-based solution that strengthens the physician-patient relationship with a full suite of tools for collaboration, patient engagement, automation and data optimization. Since the onset of the pandemic, these virtual care solutions have experienced accelerated adoption, easing pressure on the healthcare system, and strong growth in virtual care is expected to continue. Market activities and trends throughout the year have validated TELUS Health's long-standing presence in the healthcare market and assumptions about the business' primary growth areas and path forward, reinforcing our focus on employee health and virtual care. In January 2022, we officially launched TELUS Health Virtual Pharmacy, a patient-focused service designed to improve medication management by ensuring timely delivery of prescriptions direct to a patient's home, providing unlimited access to virtual pharmacist consults, and offering tools to help manage dosing compliance. In 2023 and beyond, aligned with our passionate commitment to our social purpose, TELUS Health will leverage these and other digital health tools to continue to expand access to care and improve health outcomes for citizens around the world, with the ongoing commercialization of 5G expected to significantly bolster our capabilities as innovative new healthcare applications take advantage of higher speeds and lower latency.

TELUS Agriculture & Consumer Goods

With the launch of TELUS Agriculture in 2020, a business initially built on eight acquisitions throughout 2019 and 2020, we positioned ourselves to become a major global player in the promising and rapidly growing agriculture technology market. With the addition of two companies in 2021, Conservis and Blacksmith Applications, as well as acquiring the assets of Herdtrax, we continued to advance our growth strategy. In July 2022, we evolved our name to TELUS Agriculture & Consumer Goods as a signal of our commitment to the larger value chain, building a unified TELUS brand that fully supports our strategic intent to link producers to consumers. TELUS Agriculture & Consumer Goods is dedicated to creating the best producer-to-consumer outcomes. We deliver digital insights that empower and connect our customers around the world, improving the quality, safety, distribution and sustainability of food and consumer goods – both today and for the future. We also provide digital tools for use across a complex and fragmented supply chain to create actionable, integrated solutions. We have established meaningful digital technology and data insight positions in three key segments of the agriculture, food and consumer goods value chain: (i) agri-business, which enables the flow of business data between manufacturers such as farm machinery, seed and chemical suppliers, distributors, retailers and farms; as well as farm solutions, which enable precision agriculture and farm management; (ii) consumer goods, which offers trade promotion solutions to consumer packaged goods companies, in addition to enabling food and consumer goods traceability from producer to consumer; and (iii) animal health, which supports the safe and efficient development of protein sources through technology and consultative expertise. We offer leading software solutions across the value chain that address complex data management challenges and data silos to digitally transform, protect and optimize the global food system by improving the production, transportation, quality and safety of our food and consumer goods.

Digitally-led customer experiences – TELUS International (DLCX)

Since its inception 18 years ago, TI has grown exponentially in size, scope and geographic diversity to deliver digital customer experience solutions for clients from delivery centres in North and Central America, Europe and Asia. In January 2020, TI added significant scale and diversity through the acquisition of CCC, a leading provider of higher-value-added business services with a focus on customer relationship management and content moderation. In December 2020, TI further advanced its digital transformation strategy with the acquisition of Lionbridge AI, a market-leading global provider of crowd-based training data and annotation platform solutions used in the development of AI algorithms to power machine learning. Lionbridge AI's advanced technology innovation, combined with human ingenuity, improves data functionality to deliver significantly enhanced, customized and high-quality outcomes for customers. Lionbridge AI, and the July 2021 acquisition of Playment, now operate as TELUS International AI Data Solutions (TIAI), helping companies test and improve machine learning models through a global AI community of over one million data annotators and linguists across over 500 languages and dialects. In January 2023, TI closed its acquisition of WillowTree, a full-service digital product provider focused on end-user experiences, such as native mobile applications and unified web interfaces. WillowTree expands TI's existing design and build capabilities across its end-to-end digital offerings. TI's robust solutions span across digital strategy, innovation, consulting and design, digital transformation and IT lifecycle solutions, data annotation and intelligent automation capabilities, and omnichannel CX solutions, including content moderation, trust and safety solutions and other managed solutions. As at December 31, 2022, TI's more than 73,000 highly engaged team members support its clients in over 50 languages from 56 delivery locations across 28 countries. Looking ahead, TI is well-positioned to continue growing with, and adding to its over 650 global clients. These clients span a number of high-growth target verticals, including tech and games, eCommerce and fintech, communications and media, banking, financial services and insurance, and travel and hospitality. The clients TI serves are a diverse group that include digital native technology companies that need help continuing to grow and scale their businesses, and well-established companies that require help with their digital transformation strategy and execution. Its ongoing focus on providing premium, complex, technology-centric solutions, thoughtfully executed by highly-skilled, empathetic and engaged team members, positions TI favourably for ongoing success in the growing market.

As technology continues to change our industry rapidly, customer demand continues to evolve and grow, and Canada shifts to a more digital economy, we are committed to evolving our business and offering innovative and reliable services and thought leadership in core areas of future growth that are complementary to our current operations. This, along with the constant focus of our highly engaged team on leadership in delivering an enhanced customer experience over world-leading networks, positions us for continued differentiation and growth in the years ahead.

9.3 TELUS assumptions for 2023

In 2023, we expect similar growth in EBITDA compared to the prior year, driven by continued demand for data in our mobile and fixed products and services and contributions from recently closed business acquisitions; continued growth from our health, agriculture and consumer goods and B2B products and services; first half year-over-year roaming revenue improvement corresponding with a reduction in pandemic restrictions; continued significant ongoing investments in our leading fibre broadband network and growing 5G deployment; our strategic efforts to enhance operational simplicity and efficiency; and our constant focus on an enhanced customer experience across all areas of our operations, with the objective of simplifying our customers' interaction with us while reducing our overall cost structure.

Our assumptions in support of our 2023 outlook are generally based on industry analysis, including our estimates regarding economic and telecom industry growth, as well as our 2022 results and trends discussed in *Section 5*.

Our 2023 key assumptions include the following:

- Estimated economic growth rates in Canada, B.C., Alberta, Ontario and Quebec of 0.6%, 0.4%, 1.5%, 0.3% and 0.5%, respectively.
- Estimated inflation rates in Canada, B.C., Alberta, Ontario and Quebec of 3.7%, 3.7%, 3.8%, 3.6% and 3.7%, respectively.
- Estimated annual unemployment rates in Canada, B.C., Alberta, Ontario and Quebec of 6.1%, 5.6%, 5.9%, 6.6% and 5.5%, respectively.
- Estimated annual rates of housing starts on an unadjusted basis in Canada, B.C., Alberta, Ontario and Quebec of 212,000 units, 34,000 units, 31,000 units, 71,000 units and 50,000 units, respectively.
- No material adverse regulatory rulings or government actions against TELUS.
- Continued intense mobile products and services competition and fixed products and services competition in both consumer and business markets.
- Continued increase in mobile phone industry penetration in the Canadian market.
- Ongoing subscriber adoption of, and upgrades to, data-intensive smartphones, as customers seek more mobile connectivity to the internet at faster speeds.
- Mobile products and services revenue growth resulting from improvements in subscriber loading, with continued competitive pressure on blended ARPU. Roaming revenue from business and consumer travel will improve, primarily in the first quarter of 2023, as we lap the impacts of the prior year's travel advisories and border restrictions.
- Continued pressure on mobile products and services acquisition and retention expenses resulting in the Effects of contract asset, acquisition and fulfilment and TELUS Easy Payment device financing being a net cash outflow of approximately $150 million to $250 million (2022 actual – $95 million net cash outflow), arising from gross loading and customer renewal volumes, competitive intensity and customer preferences. Continued connected devices growth, as our IoT offerings diversify and expand.
- Continued growth in fixed products and services data revenue, reflecting an increase in internet, TV and security subscribers, speed upgrades, rate plans with larger data buckets or endless data usage, and expansion of our broadband infrastructure, healthcare solutions, agriculture and consumer goods solutions and home and business security offerings.
- Continued erosion of residential voice revenue resulting from technological substitution and greater use of inclusive long distance.
- Continued growth of DLCX revenue and EBITDA generated by expanded services for existing and new clients and strategic business acquisitions.

- Continued focus on our customers first initiatives and maintaining our customers' likelihood-to-recommend.

- Employee defined benefit pension plans: current service costs of approximately $62 million recorded in Employee benefits expense and interest expense of approximately $7 million recorded in Financing costs; a rate of 5.05% for discounting the obligation and a rate of 5.05% for current service costs for employee defined benefit pension plan accounting purposes; and defined benefit pension plan funding of approximately $35 million.

- Restructuring and other costs of approximately $275 million (2022 actual – $240 million) for continuing operational effectiveness initiatives, with margin enhancement initiatives to mitigate pressures related to intense competition, technological substitution, repricing of our services, increasing subscriber growth and retention costs, and integration costs associated with business acquisitions.

- Net cash Interest paid of approximately $1.1 billion to $1.2 billion (2022 actual – $799 million).

- Depreciation and Amortization of intangible assets of approximately $4.0 billion to $4.1 billion (2022 actual – $3.5 billion).

- Income taxes: Income taxes computed at an applicable statutory rate of 24.7 to 25.3% and cash income tax payments of approximately $550 million to $630 million (2022 actual – $519 million).

- Participation in ISED's wireless spectrum auction for 3800 MHz spectrum band, with auction bidding expected to start on October 24, 2023.

- Bad debt expense will return to pre-pandemic levels, driven by macroeconomic pressures.

- Continued growth of health services revenue and contribution to EBITDA generated by strategic business acquisitions, including LifeWorks, expanding our breadth of health offerings. We anticipate being able to drive cross-selling opportunities and harvest synergies between our organizations. We expect this growth to be partially offset by lower health benefits management revenues resulting from rate changes associated with a large contract renewal in 2022 and the anticipated loss of a larger health benefits client; as well as higher operating costs associated with growth related to scaling our digital health offerings, inclusive of increased subscription-based software licenses, all with a focus on effective deployment of value-added services and optimizing efficiency.

- Our international operations will be impacted by the macroeconomic environment in other global economies, as well as continued currency fluctuations, which may have an impact on our outlook. U.S. dollar to Canadian dollar average exchange rate of US$1.00: C$1.32 (2022 actual – US$1:00: C$1.30); European euro to U.S. dollar average exchange rate of €1.00: US$1.08 (2022 actual – €1.00: US$1.05).

- Continued expansion of our agriculture and consumer goods services business through business acquisitions and organic growth.

- Continuation of our digitization efforts to simplify how our customers do business with us, introduce new products and services, respond to customer and market needs, and provide highly reliable service.

Our 2023 outlook is forward-looking information that is based on these assumptions and is subject to inherent risks and uncertainties. These assumptions may ultimately prove to have been inaccurate. Events or our actual results may differ materially from expectations expressed in or implied by this outlook due to these assumptions having been incorrect or as a result of risks such as those described in detail in *Section 10 Risks and risk management*.

9.4 Communications industry regulatory developments and proceedings

Our telecommunications, broadcasting and radiocommunication services are regulated under federal laws by various authorities, including the Canadian Radio-television and Telecommunications Commission (CRTC), ISED, Canadian Heritage and the Competition Bureau.

The operations of our health business are also subject to various federal and provincial health laws and regulations, as well as policies, guidelines and directives issued by regulatory and administrative bodies. See *Section 10.3 Regulatory matters*.

The following is a summary of certain significant communications industry regulatory developments and proceedings relevant to our telecommunications business and our industry. This summary is not intended to be a comprehensive legal analysis or description of all of the specific issues described. Although we have indicated those issues for which we do not currently expect the outcome of a development or proceeding to be material to us, there can be no assurance that the expected outcome will occur or that our current assessment of its likely impact on us will be accurate. See *Section 10.3 Regulatory matters*.

Radiocommunication licences and spectrum-related matters

ISED regulates, among other matters, the allocation and use of radio spectrum in Canada and licenses radio apparatus, frequency bands and/or radio channels within various frequency bands to service providers and private users. The department also establishes the terms and conditions that may attach to such radio authorizations, including restrictions on licence transfers, coverage obligations, research and development obligations, annual reporting, and obligations concerning mandated roaming and antenna site sharing with competitors.

Decision on amendments to SRSP-520, Technical requirements for fixed and/or mobile systems, including flexible use broadband systems, in the band 3450-3650 MHz

On November 18, 2021, ISED issued its decision on amendments to the 3500 MHz technical requirements due to its concern that 5G equipment operating on 3500 MHz spectrum may have the potential to cause interference with radio altimeters on aircraft. The decision included limiting use in areas around major airports and restricting the transmission of energy above the horizon. ISED projected next steps, including a future consultation, should Canadian or global developments and studies merit further changes to the technical rules as they relate to the radio altimeter protection issue. There is a risk that this decision could have a material impact on TELUS depending on how long they remain in application.

mmWave spectrum auction to support 5G

On June 5, 2019, ISED released its *Decision on Releasing Millimetre Wave Spectrum to Support 5G* , repurposing several tranches of mmWave spectrum for mobile use. On June 6, 2022, ISED issued its Consultation on a Policy and Licensing Framework for Spectrum in the 26, 28 and 38 GHz bands, which is the first step in setting the auction framework rules, including competitive measures for these mmWave bands. There is a risk that the auction rules will favour certain carriers over us and impact our ability to acquire an adequate quantity of mmWave spectrum. ISED maintains its projection that the mmWave auction will commence in 2024.

3800 MHz spectrum auction to support 5G

The 3800 MHz spectrum band is seen as an extension to the 3500 MHz band. On May 21, 2021, ISED released its *Decision on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band*, which will make 250 MHz of spectrum available for auction. The 3800 MHz spectrum will only be cleared and available by March 2025 in urban areas and March 2027 in many rural areas. Certain rural areas (in Northwest Territories, Yukon and Nunavut, and northern parts of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec and Newfoundland and Labrador) are still deemed satellite-dependent areas and this spectrum is considered encumbered for mobile use in these areas. On June 30, 2022, ISED released its *Decision on a Policy and Licensing Framework for Spectrum in the 3800 MHz Band* , which defines the auction rules and conditions of licence for the 3800 MHz band. The auction framework includes a 100 MHz cap across the 3500 MHz and 3800 MHz bands. In 38 of the 172 licence areas, only 50 MHz of unencumbered spectrum is available and the remaining 200 MHz will be encumbered by coexistence with satellite earth stations. The limited amount of unencumbered spectrum may impact our ability to acquire an adequate quantity of 3800 MHz band spectrum in satellite-dependent areas. The deadline for receipt of applications and financial deposits for participation in the 3800 MHz spectrum auction is July 25, 2023. Auction bidding is scheduled to start October 24, 2023.

Regulatory and federal government reviews

The CRTC and the federal government have initiated public proceedings to review various matters. A number of key proceedings are discussed below.

Proposed acquisition of Shaw by Rogers

In March 2021, Rogers Communications Inc. and Shaw Communications Inc. announced their agreement for Rogers to acquire Shaw. In addition to approval by shareholders of Shaw, the acquisition requires approvals by the Competition Bureau, the CRTC and the Minister of Innovation, Science and Industry.

On March 24, 2022, the CRTC issued a decision approving, with conditions, the transfer to Rogers of effective control of the broadcasting undertakings licensed to Shaw. The Public Interest Advocacy Centre and the National Pensioners Federation petitioned Cabinet to overturn the CRTC approval, but Cabinet dismissed this petition on June 23, 2022.

The Commissioner of Competition brought an application to the Competition Tribunal to block the transaction. Rogers and Shaw have also announced a transaction to divest Shaw's Freedom Mobile assets to Quebecor and argued the application before the Competition Tribunal on the basis of this divestiture. The Competition Tribunal heard the Commissioner's application in November and December 2022 and on December 31, 2022, the Competition Tribunal dismissed the Commissioner's application. The Commissioner appealed the Tribunal decision, and the appeal was dismissed by the Federal Court of Appeal on January 24, 2023. The Commissioner stated he will not seek leave to appeal to the Supreme Court of Canada.

On October 25, 2022, the Minister of Innovation, Science and Industry dismissed the application for approval of the transfer of the Shaw spectrum licences to Rogers, but the Minister has not made any public determinations with respect to the transfer of the Shaw spectrum licences to Quebecor. It remains possible that the Minister could make (or decline to make) other regulatory changes, or impose behavioural remedies, that could materially affect us directly or affect the industry as a whole. It is also possible that this acquisition could trigger further consolidation in the industry. Until all relevant governmental authorities complete their reviews and make a determination on whether to allow the acquisition and, if so, under what conditions, it is too early to determine the impact of these reviews on us.

Review of mobile wireless services

On April 15, 2021, the CRTC released its decision in the *Wireless Regulatory Framework Review*. The CRTC determined that Bell, Rogers, TELUS and SaskTel must provide wholesale mobile virtual network operator (MVNO) access to facilities-based regional wireless providers in areas where those providers hold a mobile wireless spectrum licence. MVNO access is based on commercially negotiated rates and will be phased out after seven years. On October 25, 2022, the CRTC released Telecom Decision CRTC 2022-288, where it made determinations on the draft terms and conditions of the MVNO tariffs of Bell, Rogers and TELUS, and required the carriers to update their respective tariffs for Commission approval. Bell, Rogers and TELUS are required to have MVNO service operational within 30 days of final Commission tariff approval. Companies desiring MVNO access are entitled to commence negotiations as of the date of the decision and the CRTC expects that the first MVNO agreements are to be completed within 90 days of final tariff approval. We are working to implement the new MVNO and other requirements, including updating our domestic roaming tariff to include the provision of seamless roaming. The impact of this decision on us will be dependent on the commercial rates that are negotiated for MVNO access.

We were also granted leave to appeal two determinations from this decision to the Federal Court of Appeal: (i) the requirement for the national mobile carriers, including us, to offer seamless roaming as an additional condition under which the existing mandated wholesale roaming service must be offered; and (ii) the ruling that sections 43 and 44 of the *Telecommunications Act* do not provide the CRTC with jurisdiction to adjudicate disputes involving mobile wireless transmission facilities. The appeal was heard in December 2022 and remains under reserve. If we are successful on appeal, we anticipate it will be easier for us to deploy our 5G infrastructure, in particular on municipal property.

Application to seek a review of domestic wholesale roaming rates

On May 19, 2022, Bragg Communications Inc., Cogeco Communications Inc., Videotron Ltd., Xplornet Communications Inc. and Xplore Mobile Inc. filed a joint application to the CRTC seeking a review of the tariffed rates currently charged by Rogers, Bell and TELUS for domestic wholesale roaming, claiming that the current rates are no longer just and reasonable. We have filed an answer to this application demonstrating why such a review is not warranted at this time. The impact of this application is dependent upon whether the CRTC decides to undertake a review of mandated roaming rates and to what extent there are any changes for current tariffed rates.

Wireline wholesale services follow-up

On July 22, 2015, the CRTC released *Review of wholesale wireline services and associated policies,* Telecom Regulatory Policy CRTC 2015-326 (TRP 2015-326). The major component of this decision was that the CRTC ordered the introduction of a disaggregated wholesale high-speed access (HSA) service for ISP competitors. This includes access to FTTP facilities.

On June 11, 2020, the CRTC released *Call for comments – Appropriate network configuration for disaggregated wholesale high-speed access services*, Telecom Notice of Consultation CRTC 2020-187, where it is examining the appropriate network and service configurations for the disaggregated wholesale HSA service regime for all wholesale HSA service providers across the country. This process, which took the place of the previous follow-up proceedings, is now closed. Until the CRTC issues its decision, it is too early to determine the impact of this proceeding on us.

Draft policy direction to CRTC

On May 26, 2022, the Governor in Council released a draft policy direction to the CRTC and commenced a consultation to solicit comments from the public. The draft direction would repeal the two existing policy directions, but retain certain elements, including requirements concerning competition, investment and affordability. The draft direction would require the CRTC to take certain steps, including to mandate the provision of aggregated wholesale high-speed internet access until there is sufficient competition to no longer require it, as well as to consider extending the seven-year time period during which users of the CRTC's MVNO mandate are required to build their own facilities. We filed submissions and are awaiting a decision. We are unable to assess the materiality of the draft direction until we see its final form and know whether it will be implemented.

New draft cybersecurity legislation

On June 14, 2022, the federal government introduced Bill C-26, *An Act respecting cyber security, amending the Telecommunications Act and making consequential amendments to other Acts*. The legislation would amend the *Telecommunications Act* to, among other things, allow the Governor in Council to prohibit telecommunications service providers from using equipment from designated companies in their networks. In practice, this will allow the federal government to ban the use of Huawei and ZTE equipment in our network and impose penalties for non-compliance, and the Minister of Innovation, Science and Industry stated that the government intends to use its powers under Bill C-26, if passed, to, among other things, require the removal of existing Huawei and ZTE 5G equipment by June 28, 2024. The legislation would also create a new statute, the *Critical Cyber Systems Protection Act* (CCSPA). The CCSPA would require designated federally regulated corporations to maintain cybersecurity plans, impose reporting requirements and impose penalties for non-compliance. Bill C-26 received first reading on June 14, 2022. If we are ultimately subject to an order requiring us to remove a significant amount of equipment from our network, the effect could be material.

Government of Canada request to improve Canadian network resiliency

As a result of a July 8, 2022 Rogers network outage, on July 11, 2022, the Minister of Innovation, Science and Industry held a meeting with representatives of Bell, Eastlink, Rogers, SaskTel, Shaw, Videotron and TELUS to discuss improving the resiliency of networks across Canada. The Minister requested that these carriers enter into a formal agreement to ensure mutual assistance during any future outages, emergency roaming and communications protocols to ensure that the public and authorities are well informed during future network disruptions. A memorandum of understanding (MOU) on these issues was signed by various carriers, including TELUS, with an effective date of September 9, 2022. Among other things, the MOU requires that wireless service providers with overlapping network coverage areas sign reciprocal emergency roaming agreements within nine months of September 9, 2022. The CRTC posed requests for information to Rogers about the outage and the CRTC Chair stated that the CRTC plans to launch proceedings to examine reporting of major outages and measures to enhance network resiliency. ISED is also conducting further steps via the Canadian Security Telecommunications Advisory Committee to examine network resiliency. We will fully participate in all follow-up initiatives as required. It is too early to determine if these initiatives will have a material impact until they are concluded.

Nova Scotia 911 legislation

In November 2022, Nova Scotia passed amendments to the *Emergency 911 Act* and the *Emergency Management Act* that, among other things, require telecommunications service providers to take certain actions to prevent certain outages, to inform stakeholders, and to refund customers in the case of certain outages. These amendments have received royal assent but have not been proclaimed into force. Most of the obligations of telecommunications service providers are to be set out in regulations, which have yet to be made by the Governor in Council. Until the regulations are made, it is too early to determine the impact of this legislation on us.

CRTC proceeding regarding potential barriers to the deployment of broadband-capable networks in underserved areas in Canada

On December 10, 2019, the CRTC issued *Call for comments regarding potential barriers to the deployment of broadband-capable networks in underserved areas in Canada*, Telecom Notice of Consultation CRTC 2019-406. In this proceeding, the CRTC sought comment on barriers that service providers and communities face in building new facilities, or interconnecting to or accessing existing facilities, and in extending networks into underserved areas in order to offer universal service objective-level services. The CRTC has specifically identified access to affordable transport services and efficient use of support structures as potential barriers. The record of the proceeding is now closed and we anticipate a decision this year. It is too early to determine the impact of the proceeding on us.

CRTC proceeding regarding access to poles owned by Canadian carriers

On October 30, 2020, the CRTC issued *Call for comments regarding potential regulatory measures to make access to poles owned by Canadian carriers more efficient*, Telecom Notice of Consultation CRTC 2020-366. The CRTC commenced the proceeding further to comments in the proceeding initiated by Telecom Notice of Consultation CRTC 2019-406 that untimely and costly access to poles owned by Canadian carriers has negative impacts on broadband deployment, particularly in areas with limited or no access to broadband-capable networks. In the most recent proceeding, the CRTC is considering, among other issues, authorization delays, make-ready costs, spare capacity reservations, joint use agreements and the potential for improved dispute resolution. The proceeding is now closed and we are awaiting a decision. Until we receive a decision, we are unable to determine the impact of the proceeding on us.

CRTC review of rate setting for wholesale telecommunications services

On April 24, 2020, the CRTC issued *Call for comments – Review of the approach to rate setting for wholesale telecommunications services*, Telecom Notice of Consultation CRTC 2020-131. In this proceeding, the CRTC is seeking comment on whether to change its methodology of setting wholesale rates and, if so, how. The CRTC has stated its intent to use the proceeding to establish a more transparent and efficient rate-setting process. It is too early to determine the impact of the proceeding on us.

CRTC review of deadlines for transition to next-generation 9-1-1 service

On June 14, 2021, the CRTC issued Telecom Decision CRTC 2021-199, *Establishment of new deadlines for Canada's transition to next-generation 9-1-1* (NG9-1-1), where the CRTC stipulated revised implementation for NG9-1-1 service in Canada. The CRTC directed NG911 network providers, including us, to establish their NG911 networks, complete all NG911 production onboarding activities, and be ready to provide NG911 voice service by transiting live NG911 traffic, wherever public safety answering points have been established in a particular region, by March 1, 2022. Consistent with this directive, we are now transiting live NG9-1-1 traffic over our NG9-1-1 network, but full implementation of NG9-1-1 in our NG9-1-1 territory is contingent on interconnections with 9-1-1 call centres, and such implementation is dependent upon local government authorities. We continue our work to fully implement NG9-1-1.

Development of a network-level blocking framework to limit botnet traffic

On June 23, 2022, the CRTC released *Development of a network-level blocking framework to limit botnet traffic and strengthen Canadians' online safety*, Compliance and Enforcement and Telecom Decision CRTC 2022-170. The Commission has asked its technical working group, the CRTC Interconnection Steering Committee, to examine the issue and produce a report within nine months about how ISPs can implement network blocking of malicious botnet traffic. Parties will have an opportunity to comment on the report prior to the Commission rendering any further determinations. The outcome is not expected to be material.

Credit card processing fee tariff application

In August 2022, we filed a tariff notice seeking approval from the CRTC to levy a process fee for payments made by credit card in respect of non-forborne services. The application pertains only to non-forborne services; CRTC approval is not required to charge credit card processing fees for payments for forborne services (such as wireless services). On December 8, 2022, the CRTC issued Telecom Order CRTC 2022-335 denying our application to introduce the credit card processing fee for rate-regulated services in Alberta and B.C. In its Order, the Commission stated that it objects, on policy grounds, to the charging of a processing fee. Additionally, and although our application to the CRTC was confined to rate-regulated services, the CRTC stated that further regulatory action would be considered if we do not cease charging processing fees or if the practice becomes more widespread in the industry. If further regulatory action is taken, it is possible the CRTC could prevent us from charging credit card processing fees for all telecommunications services, including forborne services, or otherwise constrain pricing flexibility for telecommunications services.

Federal private sector privacy bill proposes to repeal and replace the Personal Information Protection and Electronic Documents Act

On June 16, 2022, Bill C-27 was introduced and received first reading in the House of Commons. The *Digital Charter Implementation Act, 2022* proposes to enact the *Consumer Privacy Protection Act* (replacing the existing private sector privacy legislation and implementing new consumer privacy rights, enhanced enforcement powers and a private right of action), the *Personal Information and Data Protection Tribunal Act* (a new adjudicative body to provide independent oversight on enforcement activities by the regulator) and the *Artificial Intelligence and Data Act* (a new regulatory regime for the use of AI in the private sector, using a risk-based framework supported by extensive enforcement powers). The bill proposes significant changes to federal privacy legislation in Canada; however, until the bill is passed in its final form, we are unable to determine the materiality of the proposed changes.

Amendments to Quebec's public and private sector privacy law

On September 22, 2021, the Quebec National Assembly passed *An Act to modernize legislative provisions as regards the protection of personal information*, which received assent the same day. Extensive new requirements governing the collection, use and disclosure of the personal information of individuals in Quebec will be phased in over three years. The Act also creates a new enforcement regime with significant criminal fines and administrative monetary penalties for certain infractions and a private right of action with minimum statutory punitive damages. The full impact of the Act is not yet known because some key provisions, such as those relating to AI, have to be further elaborated through government regulations and interpretive guidance from the regulator. The materiality of the change cannot be fully assessed at this time.

Ontario introduces bill to change handling of personal health information

On April 14, 2022, the *Pandemic and Emergency Preparedness Act, 2022* received royal assent. The Act amends the *Personal Health Information Protection Act* to empower the government to make regulations specifying the following: acceptable electronic formats for access rights to personal health information (PHI); the circumstances persons or entities may collect, use and disclose PHI; the security requirements; the disclosure requirements; and additional categories of persons or entities, who can collect, use or disclose PHI. The materiality of the change cannot be fully assessed before the regulations are available.

Proposed subsidy increases for Northwestel

On November 2, 2020, the CRTC initiated the first phase of a review of its regulatory framework for Northwestel Inc. and the state of telecommunications services in Canada's North in Telecom Notice of Consultation CRTC 2020-367. On January 20, 2021, a number of interveners proposed large subsidy increases to Northwestel and other companies providing service in Canada's North. On June 8, 2022, the CRTC released Telecom Notice of Consultation CRTC 2022-147 initiating the second phase of this review, leaving open the potential for subsidy increases. On October 24, 2022, the CRTC added three TELUS communities (High Level, Alberta, Atlin, B.C. and Fort St. John, B.C.) to the scope of the proceeding. A decision is unlikely before 2024. The impact of this proceeding is not expected to be material.

Consultation on amendments to the Competition Act

In February 2022, ISED announced its intention to undertake a review of the *Competition Act*, beginning with immediate, targeted amendments to the Act. The targeted amendments received royal assent on June 23, 2022 and included: (i) addition of a new provision to protect workers from agreements between employers that fix wages and restrict job mobility; (ii) addition of a new provision regarding "drip pricing" to both the civil and criminal prohibition on false or misleading representations; (iii) addition of an expanded list of factors to be considered when assessing the competitive impact of mergers, business practices and competitor collaborations; (iv) amendments to clarify an "anti-competitive act" for abuse of dominance; (v) amendments to provide access by private parties to the Competition Tribunal if they are directly and substantially affected by the conduct of another party; and (vi) introduction of an anti-avoidance provision to the notifiable transactions provisions of the *Competition Act*. In November 2022, ISED commenced a consultation seeking input on amendments to the *Competition Act*. The further consultations were commenced by the issuance of a discussion paper entitled The Future of Competition Policy in Canada in November 2022, soliciting feedback from the public until February 27, 2023. ISED has outlined five areas of focus for the consultation: (i) merger review; (ii) unilateral conduct; (iii) competitor collaborations; (iv) deceptive marketing; and (v) administration and enforcement of the law.

Broadcasting and content-related issues

Review of the Telecommunications Act, the Radiocommunication Act and the Broadcasting Act

On January 29, 2020, the Broadcasting and Telecommunications Legislative Review Panel released its final report entitled *Canada's Communications Future: Time to Act*. The report contains 97 recommendations to update legislation governing broadcasting, telecommunications and radiocommunication for the Government of Canada to consider. Further to the report, on November 3, 2020, the government introduced Bill C-10 to amend the *Broadcasting Act*. On June 21, 2021, Senate debate of Bill C-10 was cut short upon the proroguing of Parliament and the calling of the federal election. On February 2, 2022, the government introduced Bill C-11, which is largely the same as its predecessor Bill C-10, that seeks to: bring streaming services that operate over the internet expressly within the scope of the *Broadcasting Act*; provide the CRTC with new and expanded regulatory powers to implement a modernized regulatory framework that addresses declining levels of support for Canadian content over the past several years; and provide a more sustainable source of support for Canadian content going forward. Bill C-11 is currently awaiting final approval at the House of Commons, having passed third reading at the Senate in early February 2023. Until Bill C-11 is finalized, and the CRTC provides clarity on how it intends to implement the new legislation, it is too early to determine if it will have a material impact on us.

Review of the Copyright Act and consultations on copyright reform to address specific issues

The *Copyright Act*'s last statutorily mandated review was launched in 2017 and resulted in reports from the Standing Committee on Industry, Science and Technology and the Standing Committee on Canadian Heritage being presented to the House of Commons in the summer of 2019. The parliamentary review led to further government consultations (described below) launched in 2021 to explore specific issues raised during the review, such as how to modernize the copyright framework for online intermediary liability, AI and IoT. The timeline for potential changes to the *Copyright Act* is uncertain, although the next statutorily mandated review was supposed to be launched in 2022 and it is unclear whether or how this might impact the timeline for comprehensive copyright reform legislation. In the meantime, the federal government has made smaller changes to the *Copyright Act*, such as the inclusion in the 2022 budget of proposed amendments to extend the term of copyright by 20 years, which was required to satisfy Canada's obligations under the Canada-United States-Mexico Agreement. The policy approach for copyright has traditionally been based on a balance between the rights of copyright owners and user rights, and as a result, the impact of this proceeding is not expected to be material.

On April 14, 2021, ISED announced the launch of a consultation to modernize the copyright framework for online intermediaries. The consultation builds on the work done in 2018 and 2019 as part of the parliamentary review of the *Copyright Act*. ISED sought comments on a broad range of issues, including the role of intermediaries in policing online copyright infringement, how to remunerate rights holders for the use of their content on online platforms, and what types of enforcement tools (such as website-blocking orders) should be available against intermediaries. We participated in this consultation and filed joint comments with other ISPs on May 31, 2021. Among other things, the comments advocated for a continuation of existing government policy that provides ISPs with unconditional safe harbour protection for the potentially infringing activities of their customers. It is too early to tell whether this consultation will have a material impact on us.

On July 19, 2021, the government announced a consultation to modernize the copyright framework applicable to AI and IoT. The government's objectives were to support innovation and investment in AI and other digital and emerging technologies, support Canada's cultural industries and preserve the incentive to create and invest provided by the economic rights set out in the Act, and support competition and marketplace needs regarding IoT devices and other software-enabled products. We participated in this consultation and filed joint comments with other ISPs on September 17, 2021. Among other things, the joint comments advocated that no changes should be made to the *Copyright Act* that would unduly burden or create potential liability risks for ISPs. Similar to the broader *Copyright Act* review, the impact of this proceeding is not expected to be material.

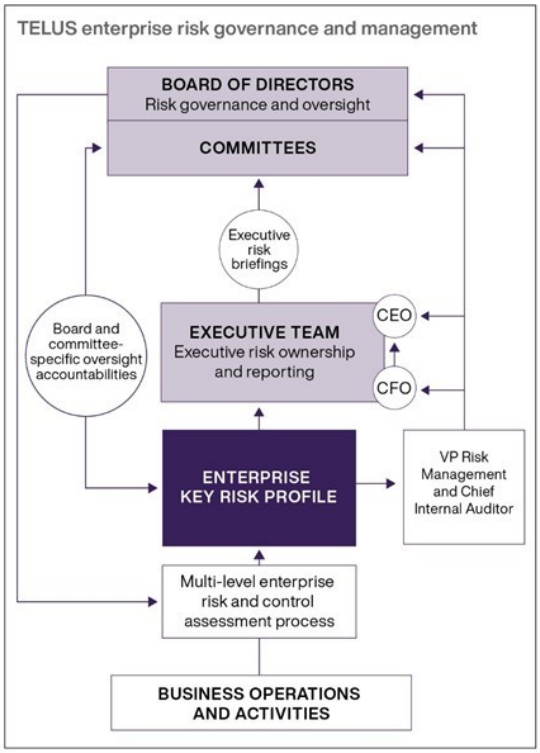
Consultation on the government's proposed approach to address harmful content online

On July 29, 2021, the government launched a consultation on its proposed approach to address harmful content online. The government's proposals largely target social media and content platforms, but a few proposals would also have impacted ISPs. Accordingly, we participated in this consultation and filed joint comments with other ISPs on September 25, 2021. Among other things, the joint comments advocated that the legal framework for addressing harmful online content should not create undue obligations or liability for telecommunications carriers, and that requirements to block access to content online or to provide subscriber information should continue to require judicial orders. In March 2022, the government established an expert advisory group on online safety, with a mandate to provide the Minister of Canadian Heritage with advice on how to design the legislative and regulatory framework to address harmful content online and how to best incorporate the feedback received during the national consultation held from July to September 2021. Following the publication of the group's report, the government conducted further consultations with stakeholder groups regarding the advice it received from the expert advisory group. No timeline has been set for a bill to be tabled and no legislation was proposed in 2022. The impact of this consultation is not expected to be material.

10. Risks and risk management

10.1 Overview

Risk arises from uncertainty around events, actions and our business activities that may have a negative impact on the achievement of our objectives and goals, but may also provide positive opportunities. Risk oversight and management processes are integral to our risk governance and strategic planning practices.



Risk governance, oversight and culture

We maintain strong risk governance and oversight practices, with risk oversight responsibilities outlined in the policy manual for our Board of Directors (Board). Our Board is responsible for ensuring that material risks to our business are identified, and for overseeing the implementation of systems and processes that effectively identify, monitor and manage material risks.

Our risk governance culture starts with clear risk management leadership and transparent communications, supported by our Board and Executive Team. In our approach to risk governance, accountability for the management of risks and reporting of risk information is clearly defined. Training and awareness programs, appropriate resources and risk champions help to ensure that we have the risk management competencies necessary to support effective decision-making across the organization. Ethics are integral to our risk governance culture, and our code of ethics and conduct directs team members to meet the highest standards of integrity in all business decisions and actions.

Responsibilities for risk management

We take a multi-level approach to managing risks, sharing responsibility across the organization and recognizing that agile and effective risk management is integral to the achievement of our strategic and operational objectives. The first line of assurance is executive and operating management, and these team members are expected to integrate risk management into core decision-making processes (including strategic planning processes) and day-to-day operations. We have risk management and compliance functions across the organization, in areas that include Finance, Legal, Data and Trust (which includes Privacy), Security and other business operational areas, and these form the second line of assurance. These teams establish policies, provide guidance and expertise, and work collaboratively with management to monitor the design and operation of controls. Internal Audit is the third line of assurance, providing independent assessments of the effectiveness and efficiency of risk management and controls across all areas of our business.

Risk and control assessment process

Events within and outside of TELUS present both risks and opportunities. We strive to avoid taking on undue risk and we work to ensure alignment of risks with business strategies, objectives, values and risk tolerances; we also seek to take advantage of opportunities that may emerge and, in so doing, we consider the impacts of our decisions on our many stakeholders. We strive to proactively mitigate our risk exposures through performance planning, operational management and risk response strategies, which can include mitigating, transferring, retaining and/or avoiding risks.

We have in place multi-level enterprise risk and control assessment processes that solicit and incorporate insights from leaders across all areas of TELUS and enable us to track multi-year trends in key and emerging risks and our control environment. A comprehensive annual risk and control assessment is conducted with senior leaders and an annual assessment is completed by Board members to provide perspective on key enterprise risks. Results of the assessments are shared with senior management, our Board and Audit Committee, and inform the development of our risk-focused internal audit program. These risk assessments are also incorporated into our strategic planning, operational risk management and performance management processes. In addition, key enterprise risks are reviewed on a quarterly basis in order to capture and communicate any changes, and detailed risk assessments are conducted for various risk management, strategic and operational initiatives throughout the year.

10.2 Principal risks and opportunities

This section describes our principal risks and opportunities. The significance of these risks is such that they, alone or in combination, may have material impacts on our operations, results, reputation and brand, as well as the approaches taken by investment analysts when evaluating or valuing TELUS as an investment. These risks and the associated risk mitigation activities are addressed in the following sections.

In March 2020, the World Health Organization declared the spread of the novel coronavirus associated with COVID-19 to be a global pandemic. The COVID-19 pandemic and its subsequent effects have impacted our customers, suppliers, our team members and our communities, and have led to changes in our business and operations, including the levels of demand for, and supply of, the products and services that we offer and the channels through which we offer them. While high vaccination rates have enabled the reopening of many areas of the economy, uncertainty remains and is continuing to affect customer behaviour, in addition to the global after-effects of the pandemic, including difficult general economic conditions, such as heightened inflation, an economic downturn and the likelihood of a recession. Risks and uncertainties that could affect our business results and the market prices of our debt and equity securities, including those of our TELUS International (Cda) Inc. (TELUS International or TI) subsidiary, and that could also be heightened by the COVID-19 pandemic or by any future pandemic or similar event include, but are not limited to, the risks described in *Section 10*.

Although we believe the measures we take to identify and mitigate risks are reasonable, there can be no expectation or assurance that they will effectively mitigate or fully address the risks described, or that new developments and risk exposures will not materially affect our operations or financial results. Despite our efforts to implement controls in our domestic and international operations, there can be no assurance that these controls will prove to be effective in all instances. Forward-looking statements in this section and elsewhere in this MD&A are based on the assumption that our risk mitigation and control measures will be effective. See *Caution regarding forward-looking statements*. We consider our exposure to risk in four categories: strategic, operational, financial and compliance.

Strategic risks and opportunities

These strategic risks arise from uncertainties that may affect the nature and focus of our enterprise strategic objectives and our ability to sustain profitable revenue growth.

Risk	Potential impact	Mitigations
Regulatory matters (see 10.3) ⬆	We operate in a number of highly regulated industries and are therefore subject to a wide variety of laws and regulations domestically and internationally. Policies and practices of elected officials and regulatory decisions, reviews and government activity may have strategic, operational and/or financial implications (including revenue and free cash flow).	• Advocacy • Spectrum acquisition strategies • Non-regulated, diversified revenue streams • Prudent investment and cost efficiency • Planning decisions that consider our regulatory environment
Competitive environment (see 10.4) ⬆	Competitor expansion, activity and intensity (pricing, including discounting, bundling), as well as non-traditional competition, disruptive technology and disintermediation, may alter the nature of the market and impact our market share and financial results (including revenue and free cash flow).	• Customers first strategy • Bundling of services • Diversified investments • Monitoring of competitors • Product portfolio innovation and acquisition • Product life cycle management
Technology (see 10.5)	Consumer adoption of alternative technologies and changing customer expectations have the potential to impact our revenue streams and customer churn rates.	• Technology road map • Fibre deployment • Spectrum acquisition strategies • 5G roll-out
Security and data protection (see 10.6) ⬆	Our awareness of security issues and the effectiveness of our security controls support our ability to identify potential threats and vulnerabilities, protect our infrastructure and operating environment, detect breaches, respond to attacks and restore business operations. A successful attack may impede the operations of our network or lead to the unauthorized interception, destruction, use or dissemination of customer, team member or business information.	• Security policies, standards and methodologies • Privacy and security impact assessments • Vulnerability assessments • Continuous monitoring and response programs
Our environment (see 10.7)	Natural disasters, pandemics, climate change impacts and disruptive events may impact our operations, customer satisfaction and team member experience.	• Business continuity and disaster recovery program and plans • Emergency Management Operating Committee (EMOC) • Medical Advisory Council (MAC) to ensure our response and mitigation measures related to the COVID-19 pandemic are informed and supported by professional medical advice • Commitments to sustainable and responsible business practices, with targets that balance economic growth with positive social and environmental outcomes See *Section 5.2* of our 2022 Annual Information Form (AIF) for a description of our alignment with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Additionally, a detailed report of our environmental risk mitigation activities can be found in our sustainability and ESG report[1] at **telus.com/sustainability**.
Operational performance and business combination (see 10.8) ⬆	Investment and acquisition activities present opportunities to expand our scope but may expose us to new risks. We may be unsuccessful in gaining market traction/share and realizing benefits, and integration efforts may divert resources from other priorities.	• Investment and acquisition strategy and governance • Pre- and post-acquisition due diligence and integration planning • TELUS Ventures investments • Innovation partnerships

1 Not incorporated by reference

Legend	Description
	Risk level is higher
	Risk level remains unchanged
	Risk level is lower

Operational risks and opportunities

Operational risks arise from uncertainties we face in our day-to-day operations. Our approach is guided by our code of ethics and conduct, while our business operations are supported by policies, procedures and internal controls.

Risk	Potential impact	Mitigations
Customer service (see 10.9)	Our service delivery directly impacts customer experience, customer churn rates, and likelihood to recommend outcomes. We may not be able to deliver the excellence our customers expect or maintain our competitive advantage in this area.	• Process simplification and digitization • Customer experience management • Customer feedback and surveys • Virtual installation and repair program
Our systems and processes (see 10.10)	Systems and technology innovation, maintenance and management may impact our IT systems and network reliability, as well as our operating costs.	• Life cycle management and adoption of emerging solutions • Project management • Change management • Continuous monitoring and response programs • Disaster recovery program and plans • Reliability by design • Network redundancy

Our team
(see 10.11)
	The rapidly evolving and highly competitive nature of our markets and operating environment, along with the globalization and evolving demographic profile of our workforce, and the effectiveness of our internal training, development, succession and health and wellness programs, may impact our ability to attract, develop and retain team members with the skills required to meet the changing needs of our customers and our business.
	
	Increased physical and mental health challenges faced by team members (and their families) due to ongoing pandemic pressures may result in the loss of key team members through short-term and long-term disability.
		• Performance development program
		• Health and well-being strategy:
		  • Ongoing mental health training for leaders and all team members
		  • Ongoing awareness-building and support across five dimensions of well-being (physical, psychological, social, financial and environmental)
		  • Early intervention strategies to prevent short-term and long-term disability
		• Compensation and benefits program
		• Retention and succession planning
		• Work Styles program
		• Integration of team members from acquired businesses
		
		Additional information on our team member programs can be found in our sustainability and ESG report at **telus.com/sustainability**.

Suppliers (see 10.12)	We may be impacted by supply chain disruptions and lack of resiliency in relation to global or local events. Dependence on a single supplier for products, components, service delivery or support may impact our ability to efficiently meet constantly changing and rising customer expectations while maintaining quality of service.	• Supplier risk profiling and multi-vendor strategy • Vendor partnerships, contracts and agreements • Supplier code of conduct • Business continuity management plans Information on supply chain sustainability can be found in our sustainability and ESG report at **telus.com/sustainability**.
Real estate matters (see 10.13)	Real estate investments are exposed to possible financing risks and uncertainty of future demand, occupancy and rental rates, especially during and after the pandemic. Future real estate developments may not be completed on budget or on time and may not obtain lease commitments as planned.	• Rationalization of locations, including robust due diligence and continuous monitoring of key performance indicators • Market trends tracked continuously in order to adjust scope of development projects to market variability • Fixed-price supply contracts, limiting risk of escalation and inflation, and expert project management oversight • Costs for real estate projects monitored through capital gating and approval processes • Pre-lease agreements with prospective tenants prior to construction completion to fill vacant space • Return-to-office model with reconfigured work spaces

Financial risks and opportunities

Financial risks arise from uncertainties involved in maintaining appropriate levels of liquidity, financing and debt in order to sustain operations and support future growth.

Risk	Potential impact	Mitigations
Financing, debt and dividends (see 10.14)	Our access to capital at optimal pricing may be impacted by general market conditions and investors' assessments of our ability to generate cash flows. Our current intention to return capital to shareholders could constrain our ability to invest in our operations to support future growth.	• Shelf prospectus in effect until September 2024 • Investment-grade credit ratings • Laddered debt maturity schedule • Credit facilities, trade receivables securitization and commercial paper program • Robust free cash flow generation, with reduction in 2023 capital expenditures
Tax matters (see 10.15) 	Complexity of domestic and foreign tax laws, regulations and reporting requirements applying to TELUS and our international operating subsidiaries may impact financial results, effective governance of tax considerations and compliance. International acquisitions and expansion of operations increase our exposure to multiple forms of taxation.	• Tax strategy • Internal taxation professionals • External advisors
The economy (see 10.16) 	Changing global economic conditions, including a potential recession and alternating expectations about inflation, as well as our effectiveness in monitoring and revising growth assumptions and contingency plans, may impact the achievement of our corporate objectives, our financial results (including free cash flow), and our defined benefit pension plans.	• Pension investment governance and monitoring • Foreign currency forward contracts • Diverse product sets and asset mix • Efficient business operations

Compliance risks and opportunities

Compliance risks arise from uncertainties related to compliance with laws and regulations across the many jurisdictions in which we operate globally. We have policies, controls, processes and contractual arrangements in place, as well as insurance coverage, that are designed to support compliance and limit our exposure to compliance risks.

Risk	Potential impact	Mitigations
Litigation and legal matters (see 10.17) 	Complexity of, and compliance with, laws, regulations, commitments and expectations may have a financial and reputational impact.	• Customer contracts and agreements • Supplier contracts and agreements • Insurance policies • Compliance programs

TELUS International subordinate voting shares

The market price of the TI subordinate voting shares may be volatile and is likely to fluctuate due to a number of factors, including actual or anticipated changes in growth rates and profitability; general economic, social or political developments; changes in industry conditions; changes in regulation; inflation; the general state of the securities markets; and other material developments. TI may not achieve its publicly announced targets, which could result in a decline in the market price of the TI subordinate voting shares. A decline in the market price of the TI subordinate voting shares, whether due to these or other factors, could lead to a decrease in the fair value of the TI shares held by TELUS, including multiple voting shares.

10.3 Regulatory matters

Risk category: Strategic

The regulatory regime under which we operate, including the laws, regulations, and decisions in regulatory proceedings and court cases, reviews, appeals, policy announcements and other developments, such as those described in *Section 9.4 Communications*

industry regulatory developments and proceedings, imposes conditions on the products and services that we provide and the ways in which we provide them. The regulatory regime sets out, among other matters, rates, terms and conditions for the provision of telecommunications services, licensing of broadcast services, licensing of spectrum and radio apparatus, and restrictions on ownership and control by non-Canadians.

The allocation and use of spectrum in Canada are governed by Innovation, Science and Economic Development Canada (ISED), which establishes spectrum allocation policies, determines spectrum auction frameworks, issues licences for use and sets radio authorization conditions.

Canadian ownership and control requirements, including restrictions on the ownership of the common shares of TELUS Corporation (Common Shares) by non-Canadians, are imposed by the *Canadian Telecommunications Common Carrier Ownership and Control Regulations* under the *Telecommunications Act* (collectively, the Telecommunications Regulations) and the *Direction to the CRTC (Ineligibility of Non-Canadians)*, as ordered by the Governor in Council pursuant to the *Broadcasting Act* (the Broadcasting Direction).

We have multiple businesses that in addition to operating in Canada, also operate in other international jurisdictions, such as our TI subsidiary and our TELUS Health and TELUS Agriculture & Consumer Goods businesses, that must comply with the laws, regulations and decisions in all of the jurisdictions in which they operate. These jurisdictions, as well as the contracts that we enter into (particularly those of our TI subsidiary and our TELUS Health and TELUS Agriculture & Consumer Goods businesses), require us to comply with, or facilitate our customers' and clients' compliance with, numerous complex and sometimes conflicting legal regimes, both domestically and internationally. Recent TELUS acquisitions in the health and agriculture sectors have expanded TELUS' footprint in the international regulatory environment, with more significant exposure to the risks associated with laws and regulations that are complex, proliferating and changing rapidly, at times in conflicting ways. These laws and regulations address a number of aspects of our business operations, including, but not limited to, anti-corruption measures, internal financial control and disclosure obligations, data privacy and protection, standards for wages and hours of work, employment and labour relations, trade protections and restrictions, import and export control, tariffs, taxation, sanctions, data and transaction processing security, payment card industry data security standards, records management, user-generated content hosted on websites we operate, data residency, corporate governance, anti-trust and competition measures, team member and third-party complaints, telemarketing regulations, telephone consumer regulations, nuisance and fraud call regulations, government affairs and other regulatory requirements affecting trade and investment. Our customers and clients are also located around the world, and the laws and regulations that apply to their business operations include, among others, U.S. federal laws and regulations; state laws on third-party administration services, utilization review services, data privacy and protection telemarketing services; and state laws on debt collection in the United States, collectively enforced by numerous federal and state government agencies and attorneys general; as well as similar consumer protection laws in other countries in which our subsidiaries' clients are based. Failure to provide services in a manner that complies with any such requirements could result in breaches of contracts with our subsidiaries' clients. The application of these laws and regulations to our subsidiaries' clients is often unclear, and the laws and regulations of different jurisdictions may at times conflict. The global nature of our operations increases the difficulty of compliance. For example, in many countries, particularly in those with developing economies, it is not uncommon to engage in business practices that are prohibited by regulations applicable to us or our subsidiaries' clients, including Canada's *Corruption of Foreign Public Officials Act* and the U.S. *Foreign Corrupt Practices Act*. We cannot provide assurance that the actions of our subsidiaries' clients or their customers will not violate our internal policies or Canadian or U.S. laws. Compliance with these laws and regulations may also be challenged by the shift to remote working arrangements that was initiated in response to the COVID-19 pandemic. For example, payment card industry and *Health Insurance and Portability and Accountability Act* guidance is evolving in light of these global remote working arrangements, giving rise to uncertainty about additional costs and our ability to comply with these evolving standards.

In Canada, federal and provincial privacy laws are changing, with a trend toward more stringent requirements and greater enforcement powers. The federal government has proposed Bill C-27, which would replace the *Personal Information Protection and Electronic Documents Act* with stricter regulations and significant order-making powers and fines. Bill C-27 also proposes the regulation of artificial intelligence (AI) and data used in association with AI, with significant order-making powers and fines. AI is used extensively in TELUS' operations, products and services. Bill C-27 could increase the risk and burden related to AI use. In September 2021, the province of Quebec passed amendments to the *Act Respecting the Protection of Personal Information in the Private Sector*, which will phase in major changes and new regulatory requirements in areas such as notice, consent, data breach notification and the use of automated decision systems over a three-year period. In September 2023, the amendments will put in place a new enforcement regime, which includes substantial fines, administrative monetary penalties and a private right of action with minimum statutory damages. Similarly, British Columbia, Ontario and a number of other provinces are considering privacy reforms that could lead to a more fragmented regulatory landscape in Canada.

We have acquired a number of businesses and entered into areas in the Canadian health sector that are highly regulated and also expose us to risks related to the quality of care and provision of insured/uninsured services. The operations of our health business are subject to various federal and provincial laws and regulations, as well as policies, guidelines and directives issued by regulatory and administrative bodies, such as medical associations, provincial colleges of physicians and other associations governing the practice of health professionals (the holders of licences and permits to provide healthcare services) that we engage for the delivery of our services. In the case of virtual care, the related laws, regulations, policies, guidelines and directives are evolving and thus are subject to differences in interpretation and application.

Potential impact

Changes to the regulatory regime under which we operate, including changes to laws and regulations and ownership rules or the enactment of laws or regulations by provinces or municipalities that threaten unitary federal regulatory authority over telecommunications in Canada, could materially and adversely affect our business. These changes may increase our costs, restrict or impede the way we provide our services, limit the range of services we provide, and otherwise cause us to reduce our capital and operational expenditures, including investment in network technologies, and alter customer perceptions of our operations. The further regulation of our broadband, mobile and other operations and any related regulatory decisions could also restrict our ability to compete in the marketplace and limit the return we can expect to achieve on past and future investments in our network. Such changes may not be anticipated or, when they are anticipated, our assessment of their impact on us and our business may not prove to be accurate.

Our ability to provide competitive services, including our ability to enhance our current services and offer new services on a timely basis, is also dependent on our ability to obtain access to new spectrum licences at a reasonable cost as they are made available. The revocation of, or a material limitation on obtaining, spectrum licences could have a material adverse effect on our business operations, including the quality and reliability of our network and service offerings, as well as our financial condition.

Government or regulatory actions with respect to certain countries or suppliers may also impact us, and other Canadian telecommunications carriers generally, and may have material non-recurring incremental cost consequences for us.

Overall, compliance with laws and regulations in multiple jurisdictions globally may involve significant costs, consume significant time and resources or require changes in our business practices that result in reduced revenue and profitability. We may also face burdensome and expensive governmental investigations or enforcement actions regarding our compliance. Non-compliance could result in fines, damages, criminal sanctions against us, our officers or our team members, prohibitions on the conduct of our business, damage to our reputation, restrictions on our ability to process information, allegations by our customers that we have not satisfied our contractual obligations, or other unforeseen consequences. In addition, we are required under various laws to obtain and maintain accreditations, permits and/or licences for the conduct of our business in all jurisdictions in which we have operations and, in some cases, in which our customers receive our services, including the United States, Canada, Europe and Asia. If we do not maintain our accreditations, licences or other qualifications to provide our services, or if we do not adapt to changes in legislation or regulation, we may have to cease operations in the relevant jurisdictions and may not be able to provide services to existing customers or attract new customers. Our failure to comply with applicable legal and regulatory requirements could have a material adverse effect on our business operations, financial performance, financial condition and cash flows.

If Bill C-27 becomes law in its current form, it could materially expand prescriptive privacy requirements, significantly raise our risk profile in light of greater enforcement powers, and broaden most of the current transparency requirements and access rights. The availability of implied consent and the ability to use anonymized data may also be reduced. If Bill C-27 does not become law, Canada may lose adequacy with European Union (EU) privacy legislation, adding to the challenges involved with cross-border data transfers between Canada and EU states of personal information related to our customers, employees and suppliers. With respect to AI, the specific impact of C-27 cannot be determined at this time because many of the details are left to the regulation-making process. Bill C-27 is currently in second reading in the House of Commons and is expected to go to a Committee of the House for a detailed study early in 2023. The EU assessment of the adequacy of Canada's privacy law is in its preliminary stages. The Quebec *Act Respecting the Protection of Personal Information in the Private Sector* may impact our operations when the next phase of the Act comes into effect in September 2023. The provisions may impact many business processes and documents, imposing new obligations in relation to plain language disclosures and transparency (especially with respect to profiling technologies and automated decision systems and minors' data). We are assessing these impacts and preparing our compliance program.

Changes to the regulatory regimes under which we operate our health business, including enactment of laws, regulations and policies, guidelines or directives issued by regulatory and administrative bodies, such as medical associations, colleges of physicians and other associations governing health professionals, could adversely affect the reputation, brand, financial results and operations of this business. As it relates to our virtual care business, uncertainty regarding regulatory regimes and the anticipated regulatory changes that may be enacted by governments could have adverse effects on our business if they result in the revocation of, or significant limitations on, our ability to provide virtual care services to our customers and charge for the provision of those services.

Changes over the past 12 months

Significant regulatory developments and proceedings involving the Government of Canada and its various agencies, as well as governments and regulatory authorities in other jurisdictions, continued through 2022. Certain significant regulatory developments and proceedings relevant to our business and industry are highlighted in *Section 9.4*. These include, but are not limited to, the following:

- A draft policy directive to the CRTC released by the Governor in Council which, if implemented, would require the CRTC to mandate the provision of aggregated wholesale high-speed internet access and to consider extending the seven-year period during which service providers operating under the CRTC's mobile virtual network operator (MVNO) mandate are required to build their own facilities.

- Bill C-26, introduced by the federal government in 2022, which would prohibit the use by telecommunications service providers of equipment from designated companies in their networks and would require designated federally regulated corporations to maintain a cybersecurity plan.

- A memorandum of understanding among major Canadian communications service providers to ensure network resiliency in the event of an outage, in response to the nationwide Rogers Communications Inc. (Rogers) outage in July 2022.

- In February 2022, ISED announced its intention to undertake a review of the *Competition Act* (the Act), beginning with immediate, targeted amendments to the Act, followed by further consultations to consider broader changes to the Canadian regulatory framework for competition. The targeted amendments received royal assent on June 23, 2022 and included:

    - Addition of a new provision to protect workers from agreements between employers that fix wages and restrict job mobility

    - Addition of a new provision regarding drip pricing to both the civil and criminal prohibition of false or misleading representations

    - Addition of an expanded list of factors to be considered when assessing the competitive impact of mergers, business practices and competitor collaborations

    - Amendments to clarify an anti-competitive act as an abuse of dominance

- Amendments to provide access for private parties to the Competition Tribunal if they are directly and substantially affected by the conduct of another party, and

- Introduction of an anti-avoidance provision to the notifiable transactions provisions of the Act.

The further consultations began with the issuance of a discussion paper entitled The Future of Competition Policy in Canada in November 2022, soliciting feedback from the public until February 27, 2023. ISED has outlined five areas of focus for the consultation: (i) merger review; (ii) unilateral conduct; (iii) competitor collaborations; (iv) deceptive marketing; and (v) administration and enforcement of the law.

- Developments in Rogers' proposed acquisition of Shaw Communications Inc. (Shaw), including the approval by the CRTC of Rogers' application for transfer of the effective control of Shaw broadcasting licences, and the dismissal of the application by the Commissioner of Competition to prohibit the transaction under the *Competition Act*.

- The issuance by ISED of a *Policy and Licensing Framework for Spectrum in the 3800 MHz Band.* This spectrum band has characteristics similar to 3500 MHz and is well suited to provide capacity and coverage to our 5G network. ISED will auction 250 MHz of spectrum in this band (auction is set to start in October 2023) but current users of the spectrum are not required to vacate the band until 2025 to 2027; further, some of this spectrum band will continue to be encumbered by satellite users in northern parts of Canada beyond 2027 (see *3800 MHz spectrum auction to support 5G* in *Section 9.4*).

- Canadian privacy regulators have shown an increased interest in digital health privacy, secondary marketing and digital tracking (particularly location tracking), as demonstrated by recent investigations of Public Health Agency of Canada (PHAC), joint statements issued by the Privacy Commissioner of Canada (e.g. Securing Public Trust in Digital Healthcare resolution), and strategic planning and findings (e.g. joint investigation into location tracking by an application used by a Canadian multinational coffeehouse and restaurant chain).

- Private-sector organizations providing healthcare services are under heightened scrutiny from provincial governments, which raises the risk profile of our business model. Expanding the scope of insured services and adding new limitations or restrictions on the provision of all types of care could limit our ability to provide certain services.

Mitigation

We advocate at all levels of government, including: our participation in CRTC and federal government proceedings, studies, reviews and other consultations; representations before provincial and municipal governments pertaining to telecommunications issues; legal proceedings impacting our operations at all levels of the courts; and other relevant inquiries (such as those relating to the exclusive federal jurisdiction over telecommunications), as described in *Section 9.4 Communications industry regulatory developments and proceedings*. We also work with industry associations to promote a pragmatic and balanced approach to privacy legislation and interpretations by regulators at all levels of government that protects privacy, builds trust and supports innovation.

We will continue to monitor regulatory developments and may reconsider our investment decisions with a view to generating a necessary return on capital. Our risk mitigation strategies for investment decisions may include, but are not limited to, reducing capital and operational expenditures and limiting the size of our workforce.

We continue to strive to comply with all radio authorization and spectrum licence and renewal conditions, and we plan to participate in future spectrum auctions. We continue to advocate with the federal government for fair spectrum auction rules, so that companies like TELUS can bid on an equal footing with other competitors for spectrum blocks available at auction and can purchase spectrum licences offered for sale by competitors. We also continue to strongly advise that preferential treatment is not required and is not in the best interests of Canadians, especially rural Canadians. It is also not in the best interests of regional carriers, including for 5G services, most notably carriers that are currently part of established, sophisticated and well-financed cable companies.

As it relates to our health business, we monitor new and amended regulations, policies, guidelines and directives to stay ahead of, and plan for, new and evolving requirements. In addition, we have put in place internal governance to ensure oversight of clinical practice across all healthcare operations, to manage compliance with licensing requirements and contractual agreements and to ensure quality of care. We also advocate with the federal and provincial governments for reasonable regulations, in part by participating in market studies and other consultations. Furthermore, we continue to evaluate the current business model and strategic growth areas for our health business. By focusing on growth in areas such as employee family assistance programs, we are able to achieve growth with no additional exposure to risk due to the nature of the products and services and our delivery model.

The Canadian Telecommunications Common Carrier Ownership and Control Regulations require us to monitor and control the level of non-Canadian ownership of our Common Shares. These powers have been incorporated into our Articles and extended to ensure compliance under the *Broadcasting Act*.

We continue to advocate for amendments to Bill C-27 that will reduce unnecessary burdens on our operations, continue to protect the privacy of Canadians and support a positive finding on its adequacy by the EU in the future. We have implemented best practices and processes, such as our data enablement plan, that will facilitate compliance with privacy law reform, including record-keeping to enable us to demonstrate compliance and due diligence if necessary. With respect to Quebec's *Act Respecting the Protection of Personal Information in the Private Sector*, we are working with the Quebec government and the Quebec privacy regulator to promote pragmatic regulation-making and interpretations of the law. In anticipation of the next phase of provisions coming into force in September 2023, we are launching a project to implement compliance with those provisions.

10.4 Competitive environment

Risk category: Strategic

As the telecommunications industry continues to evolve, we have expanded our offerings beyond the delivery of voice and data services for consumer and business customers. We offer services in the areas of security and home automation, next-generation digitally-led customer experiences, healthcare, and agriculture and supply chain optimization, both inside and outside Canada (see *Competition overview* in *Section 4.1*). We face intense competition in our provision of legacy voice and data services, as well as in all sectors of our business operations and in all geographic markets.

Mobile markets are characterized by aggressive competition from established participants and regional carriers, with competitors using aggressive promotional offers to attract and retain customers.

In the consumer market, cable companies and other competitors continue to offer a mix of residential local voice over IP (VoIP), long distance, internet access and, in some cases, mobile services under one bundled and/or discounted monthly rate, along with their existing broadcast or satellite-based TV services. Some competitors own and continue to acquire broadcast content assets, and we continue to source content from them for our services.

In the business market, incumbent facilities-based competitors continue to compete based on network footprint and reliability, while hyperscalers such as Microsoft (Teams, Skype) and other IP voice/collaborative service providers such as Zoom emphasize price, flexibility and convenience. These service providers do not invest in, or own, networks or other infrastructure but compete directly with video, voice and messaging services across both the consumer and business market segments.

TI competes with professional services companies that offer consulting services, information technology companies with digital capabilities, AI and data labelling service providers, and contact centre and business process outsourcing companies that are expanding their capabilities to offer higher-margin and higher-growth digital services. In addition, the continued growth and evolution of the digital services offered by TI and the markets in which it operates, will also expose our subsidiary to new and different competitors, many of which may have significantly greater market recognition than TI in the markets it is entering, as well as increased competition from existing competitors that are also expanding their services to include digital capabilities. From time to time, clients of TI that are currently using its services may determine that they can provision these services in-house. As a result, TI faces persistent competitive pressure to offer services in a manner that will be viewed by its clients as better and more cost-effective than the in-house provision of those services.

TELUS Health competes with other providers of virtual and clinical care, electronic medical records (EMR) and pharmacy management products, claims adjudicators, systems integrators and other providers of health services, including those that own a vertically integrated mix of health services delivery, IT solutions and related lines of business, as well as global health services providers. With consumer-facing health products, we compete in the provision of virtual healthcare services (with access to general practitioners, nurse practitioners, mental health therapists and dieticians through virtual consultations), preventative health services and personal emergency response services. Additionally, with the acquisition of LifeWorks, TELUS Health competes with providers of employee family assistance programs.

TELUS Agriculture & Consumer Goods is a global data science and digital technology business leveraging technology innovation, ingenuity and AI to optimize agricultural production and global and local food and consumer goods supply chains. While we maintain a broad solution set compared to other agriculture and consumer goods technology providers, we compete with focused software and Internet of Things (IoT) competitors, while also facing competitive pressure from recent investments by select customers in their supply chains and vertical integration.

Potential impact

Our customers' loyalty and their likelihood to recommend TELUS both depend on our ability to provide a customer experience that meets or exceeds their expectations, a range of relevant products and services, and reliable state-of-the-art networks.

Intense competition from mobile competitors, telephony, data, IP and IT service providers and VoIP-focused competitors in both the consumer and business markets, along with various promotional offers, inclusive bundles and rate plans, places pressures on average revenue per subscriber per month (ARPU), churn rates and costs of acquisition and retention. In addition, technological substitution and technological advances across all key business and market segments have blurred the boundaries between broadcasting, internet services and telecommunications (see *Section 10.5 Technology*).

If TI is unable to compete successfully against companies that offer similar services, or to offer its clients a compelling alternative to the in-house provision of services, the results could include higher client churn rates, service price reductions, revenue loss, pressures on recruitment and retention of team members, and increased marketing and promotional expenses, as well as lower operating margins, which could have a material adverse effect on its business operations, financial performance, financial condition and cash flows.

We also face intense competition in the provision of health, agriculture and digital technologies and services from companies that offer similar technologies and services. If we are unable to effectively differentiate our offerings in these sectors, our business operations, financial performance, financial condition and cash flows could experience materially adverse impacts, and we may not achieve the benefits of the significant investments that we have made in acquiring, integrating and growing businesses in these sectors.

Changes over the past 12 months

On March 15, 2021, Shaw and Rogers announced an agreement under which Rogers would purchase all of Shaw's issued and outstanding Class A and Class B shares. See *Proposed acquisition of Shaw by Rogers* in *Section 9.4* for additional details. We welcome innovation-based competition that benefits consumers and business customers, and we have confidence in our competitive advantages, including our diverse offerings of products and services, world-leading networks, differentiated delivery channels, customer service excellence, and the social purpose and culture of our world-class team.

In October 2022, the CRTC issued determinations on certain proposed terms and conditions of the MVNO mandate previously set out in Telecom Regulatory Policy CRTC 2021-130. For more detail, please see *Section 9.4 Communications industry regulatory developments and proceedings.* This mandate has significant implications for the wireless competitive landscape, as a number of regional operators meet the related requirements. If one or more regional operator(s) utilizes MVNO access as a means to launch wireless offerings, the competitive landscape and market dynamics could be significantly altered.

In October 2020, the CRTC approved the application from Space Exploration Technologies Corp. (SpaceX Starlink) to provide low-earth orbit satellite internet service to rural Canadians. In addition, in August 2021, the Government of Canada announced a $1.44 billion investment in Telesat's low-earth orbit satellite constellation. In November 2022, Starlink introduced data caps in North America in order to address network capacity constraints. Globally, other competitors, such as Amazon (Kuiper) and Boeing, are developing capabilities to provide low-earth orbit internet, but many have yet to receive approval to offer those services in Canada.

Canadian cable competitors are licensing next-generation TV platforms while continuing to increase the speed of their internet offerings and extend their roll-out of Wi-Fi services in metropolitan areas. Over-the-top (OTT) services, such as Amazon Prime Video, Apple TV, Discovery+, Disney+, Netflix, Crave and YouTube, are also competing for share of viewership, which may accelerate the disconnection of current paid TV services or affect subscriber and revenue growth in our TV and entertainment services.

Erosion of our customer base for residential voice service and the decline of higher-margin legacy voice revenues are expected to continue, due to ongoing technological substitution by mobile and VoIP services and other competitive pressures. This decline has been partially offset by growth in demand and/or migration of customers to IP-based platforms.

The COVID-19 pandemic has driven an accelerated adoption of cloud-based solutions (IP voice, collaboration and network-as-a-service (NaaS) offerings) and expedited the shift from legacy operational solutions to next-generation technologies, as businesses adopted solutions that enable remote working arrangements.

Non-traditional competitors such as Amazon, Google and Microsoft are entering the business market, leveraging their global scale to offer low-cost data storage and cloud computing services. In addition, rapidly evolving technologies, such as software-defined networks (SDNs) and virtualized network functions (VNFs), enable the layering of new services in cloud-centric solutions.

In the markets in which TI competes, competitors are actively building scale through consolidation and enhancing digital capabilities through niche acquisitions. There has also been a continuous rise in employee attrition and labour rates in 2022, in particular at global IT companies, with demand for skilled talent generally driving higher wages worldwide.

In the markets in which TELUS Health competes, overall market trends see competitors expanding their product and service offerings with new digital solutions, as well as physical clinic openings, partnerships or acquisitions in order to offer clients comprehensive and integrated wellness solutions. However, we believe that our clinical and digital wellness service offerings give us a position of strength in this competitive landscape.

Mitigation

Our top corporate priority is putting our customers first and earning industry leadership in their likelihood to recommend. To support these efforts, 50% of our 2022 internal corporate scorecard is weighted to team member engagement and customer experience. To enhance customer experience, we continue to invest in our products and services, system and network reliability, team members, and system and process improvements. Additionally, in our product life cycle management processes, we endeavour to add new and innovative products and services through both research and development and acquisitions, enhance our current services with integrated bundled offers, and invest in customer-focused initiatives that improve transparency and simplicity for our customers, all in order to differentiate ourselves from our competition.

Our 4G network technology covers approximately 99% of Canada's population, which has enabled us to establish and maintain a strong position in smartphone and data device selection and expand roaming access to more than 225 global destinations. To compete effectively across customer markets, we offer a wide range of services through our TELUS, Koodo and Public Mobile brands. Each brand has a unique value proposition and web-based channel (see *Our capabilities* in *Section 4.1* and *Our major brands and distribution channels* in *Section 4.2*). TELUS' 5G network has been deployed across most major cities in Canada, covering approximately 83% of Canada's population as at December 31, 2022. As we expand our 5G coverage, we will continue to offer a network that is fast and reliable, built in full compliance with all Health Canada safety guidelines, in order to provide our customers with faster speeds, higher capacity and near-instantaneous responsiveness, while also powering smarter cities and supporting the work of first responders, as well as transforming key verticals such as healthcare and agriculture (see *Our technology, systems and properties* in *Section 4.2*).

We are continuing to make significant investments in our broadband infrastructure, including connecting more homes and businesses directly to our fibre-optic network and migrating customers from copper-based to fibre-optic services. At December 31, 2022, approximately 3.0 million households and businesses in B.C., Alberta and Eastern Quebec were connected with fibre-optic cable, which provides these premises with immediate access to our fibre-optic infrastructure. This is up from more than 2.7 million households and businesses at December 31, 2021. Our broadband investments extend the reach and functionality of our IP TV services and business and healthcare solutions, and are also enabling a more efficient and timely evolution to a converged 5G network (see *Our technology, systems and properties* in *Section 4.2*).

Our IP TV and OTT multimedia initiatives support the next generation of IP TV and, importantly, tie our OTT environment to a single platform, which allows us to be agile in the delivery of OTT services, such as Amazon Prime Video, Apple TV, Discovery+, Disney+, Netflix, Crave and YouTube, while also reinforcing our leadership position in Western Canada in the provision of high-definition linear channels, video-on-demand services and ultra-high definition 4K HDR content. Our strategy is to aggregate and integrate content and applications and make them accessible for our customers' enjoyment, on a timely basis across multiple devices. We have demonstrated that it is not necessary to own content in order to make it accessible to customers on an economically attractive basis, provided there is timely and strict enforcement of the CRTC's regulatory safeguards. In addition, as more OTT service providers launch new services and offer higher-resolution video over the internet, we continue to make investments in our network. As at December 31, 2022, TELUS PureFibre was still the leader in Canada in the Netflix internet service provider (ISP) Speed Index, a measure of prime-time Netflix performance delivered by a specific group of ISPs around the world, as well as being ranked as the fastest ISP in Canada among major ISPs by U.S.-based PCMag. In 2022, our mobile network was recognized for its coverage, speed, quality or experience by major independent awards providers Opensignal, Ookla and Tutela. In January 2022, we were recognized by Ookla as the operator of the fastest mobile network in North America.

Our SmartHome Security and Secure Business solutions offerings leverage our infrastructure investments and our proven customer experience capabilities to enhance our suite of services with video surveillance and analytics, home and business automation and related safety and security monitoring. These services leverage smartphone applications and our leading PureFibre and wireless networks, while also generating multi-service bundling and retention profiles and opportunities.

We continue to add to our capabilities in the business market through product development, acquisitions and partnerships and investments in SD-WAN, unified communications, IoT and digital services. We created GoCo, an organization that quickly became one of Canada's leading providers of some of the market's fastest-growing solutions, such as SD-WAN and unified communications. In early 2022, we acquired Fully Managed Inc., a market leader and a fully digital, cloud-first company, adding to our capabilities in order to capture the digital opportunity and further differentiate us from the competition.

To meet our customer expectations, TI provides an experience that is not only personalized and empathetic, but also consistent and integrated across omni-channel touchpoints. To quickly capture, evaluate and adapt to customer feedback on a global scale, we have built a team with expertise in advanced analytics, AI, machine learning and data management, together with leading digital technologies. We have also built an agile delivery model on a global scale, with substantially all of our delivery locations connected through a carrier-grade infrastructure backed by cloud-based technologies, enabling globally distributed and virtualized teams. However, our primary competitive differentiator is our unique workplace culture, which makes people and a shared set of values a priority in everything we do. We continue to build on this culture of care, ensuring the full engagement of the individuals we choose to join our team – and the clients we choose to work with – as we build and run our business. TI's focus includes organic growth, accelerating digital adoption for all solutions and service offerings, with an emphasis on collaborative innovation. We also continue to consider inorganic mergers and acquisitions, such as our acquisition of WillowTree, as described in *Section 10.9*, in executing our growth strategy, adding scale and digital capabilities. In the current evolving labour market, the ability to attract and retain talent is key to operational success at TI. We continue to adapt our models and practices by assessing the regional conditions of the markets we operate in, and by offering proactive compensation and talent programs.

TELUS Health has continued to leverage our systems, proprietary solutions and third-party solutions to extend our growing footprint in healthcare and capture the benefits of investments in health and wellness by governments and employers. Through the acquisition and integration of LifeWorks, the launch of new services and the ongoing enhancement of our portfolio of clinical and digital health offerings, we are entering new markets and further differentiating ourselves from our competitors.

TELUS Agriculture & Consumer Goods was launched to help companies improve the reliability of their supply chains, protect their brands and drive efficiency and profitability. As one of the few service providers with a perspective that spans the complete value chain, we expect to be able to differentiate our offerings from those of more narrowly focused competitors.

We continue to execute our disciplined long-term strategy of investing in our growth areas and delivering on our customers first priority. We intend to continue to market and distribute innovative and differentiated services; offer bundled services across our consumer and business portfolios; invest in our extensive network and systems to support customer service; evolve technologies; invest in our distribution channels, including our digital capabilities; and acquire the use of spectrum to support the development of our service offerings and the expansion of our subscriber base, as well as to address the accelerating growth in demand for data.

10.5 Technology

Risk category: Strategic

We are a technology-enabled company and we maintain short-term and long-term strategies to optimize our selection, costs and use of technology, minimize risks and uncertainties and diversify our product and service offerings. Our 5G technology, 4G LTE technology, LTE advanced (LTE-A) and TELUS PureFibre infrastructure are foundational to our future growth (see *Our technology, systems and properties* in *Section 4.2*).

Any acceleration of a paradigm shift involving customer adoption of alternative technologies, such as video and voice OTT offerings (e.g. Netflix and FaceTime), IP voice and collaboration services, NaaS, and increasingly available Wi-Fi networks, could negatively affect our revenue streams. For example, Wi-Fi networks are now used to deliver entertainment services to customers outside the home, while OTT content providers are competing for a share of entertainment viewership. OTT technology may also impact the business environment by enabling capabilities that in the past were associated with telecommunications service providers (e.g. cloud-based services and roaming). The proliferation of low-power wide-area (LPWA) IoT networks and services also presents challenges arising from low bandwidth usage, which may put additional pressure on our revenue streams. In addition, we are constantly focused on advances in cybersecurity, in order to identify any opportunities they may offer.

Our open radio access network (ORAN) deployments, combined with core network and cloud-based initiatives, demonstrate our strategic intent to remain at the forefront of 5G network innovation, as well as driving long-term total cost-of-ownership benefits. The risks involved in new ORAN technology deployment are being mitigated by leveraging key strategic partnerships and by recruiting leading subject-matter experts to our development and support roles.

Through TI, we are a digital customer experience innovator that designs, builds and delivers high-tech, high-touch next-generation solutions, including AI and content moderation.

Through TELUS Health's services, we are a leading global provider of total health and well-being services capable of delivering physical, mental and financial health solutions, including, but not limited to, pharmacy management, EMRs, electronic health records, personal health records, clinical information systems, remote patient monitoring, virtual care offerings, online claims settlement management software solutions, and online prescription and renewal services.

Our TELUS Agriculture & Consumer Goods technology solutions meaningfully impact primary production and sustainability across the food value chain, providing value chain participants with powerful solutions that leverage advanced data systems and AI to streamline operations, improve food traceability, and provide consumers with fresher and healthier food.

Potential impact

Our mobile business depends on deploying technology and maintaining sufficient access to spectrum to support the delivery of our services. Rising data traffic levels and the rapid pace of data device innovation present challenges to providing adequate capacity and maintaining high service levels with competitive cost structures.

Our growth and profitability and the diversity of our revenue sources will depend on our ability to develop and deploy new technologies that help us expand our existing offerings, as well as proactively identifying new revenue streams and improving cost efficiencies in our operations, all while meeting rapidly evolving customer expectations. We may not always be successful in anticipating or responding to our customers' expectations and interests when we adopt evolving technology solutions and integrate these solutions into our offerings, and we may not achieve the intended enhancements or cost reductions in our operations. New services and technologies offered by our competitors may make our service offerings uncompetitive. Failure to innovate, maintain technological advantages or respond effectively and in a timely manner to changes in technology could have a material adverse effect on our business, financial performance, financial condition and cash flows.

Changes over the past 12 months

Over the course of 2022, we continued to make significant investments in advancing and deploying our next-generation technologies, which will support and enhance our delivery of a superior customer experience (see *Our technology, systems and properties* in *Section 4.2*).

Mitigation

As at December 31, 2022, our 4G LTE access technology covered 99% of Canada's population, and our LTE-A access technology covered over 96%, while our 5G access technology covered approximately 83% of the Canadian population. Our ongoing investments in 4G LTE technology, including LTE-A technology and new 5G capabilities, allow us to manage new demands for data capacity by more effectively utilizing our spectrum holdings. The evolution to 5G technologies is supported by our investments in our core network, IP network and IP/fibre back-haul to cell sites, including our small-cell infrastructure, as well as our software-upgradeable radio infrastructure. The 5G expansion is expected to further increase network capacity and speed, reduce delivery costs per megabyte, deliver a superior subscriber experience, and enable innovative new applications for consumers and businesses.

Mobile network infrastructure investments will increasingly be directed to systems based on network function virtualization (NFV), which offers greater capacity for computing and storage, higher levels of resiliency and more flexible software design. Our large-scale move to national, geographically distributed private cloud-based facilities that use commercial off-the-shelf computing and storage solutions enables the deployment of broad-scale NFV and SDN technologies. This will allow us to virtualize much of our infrastructure and will also facilitate a common control plane for coordination of our virtualized and non-virtualized network assets. The architecture of our intelligence and content capabilities is located at the edge of our network infrastructure, close to our customers. The distributed smaller-scale computing power and storage deliver services faster while accommodating the need to continually scale the IP/fibre core network infrastructure.

Rapid growth of data volumes requires efficient utilization of all our spectrum licences. We have deployed our 4G spectrum holdings expansively, and we began operationalizing our 5G spectrum in 2020, including spectrum in the 600 MHz band. Further, we continue to operationalize our 3500 MHz spectrum holdings and as at December 31, 2022, our 3500 MHz footprint covered 39% of Canada's population. The spectrum licences previously used to support our CDMA access technology have been repurposed for use with LTE and 5G technologies. Our deployment of small-cell technology is helping us achieve a more efficient utilization of our spectrum holdings and mitigate any potential speed and capacity disadvantages created by 3500 MHz availability.

By leveraging our Wi-Fi service, combined with seamless global IoT connectivity across more than 200 countries and networks, we continue to grow our IoT portfolio, with a focus on expanding our offerings with a wide variety of solutions such as GEOTrac and TELUS Alert and Assist. We are also capitalizing on advanced self-learning technologies and automation (e.g. AI and robotic process automation), which will change the way we manage our operations and support customer experience innovation, as well as presenting new revenue opportunities. In addition, we are maintaining a constant focus on cybersecurity solutions, recognizing that cybersecurity, as an ecosystem of technologies and processes working together, may provide greater visibility of risks and guide better security decisions for organizations across Canada.

Ongoing investments in fibre to the premises (FTTP), along with decommissioning copper within our fibre footprint, should support the further evolution of IP-based telephony, and as those services evolve, we will continue to assess opportunities to consolidate separate technologies within a single voice service environment. The overall convergence of mobile and fixed services provides opportunities for cost savings and for the rapid development and deployment of new and advanced services. To support this convergence within a common IP-based application environment, we are leveraging modular architectures, lab investments and employee trials. We are partnering with system integrators where appropriate, purchasing hardware that is common to most other North American IP-based technology deployments and introducing virtualization technologies, where feasible. We are also active in a number of standard-setting bodies, such as the Metro Ethernet Forum, in order to advocate for a new IP infrastructure strategy that leverages standards-based functionality, which could allow us to further simplify our network.

We continue to focus on growing our product and service portfolios in health and agriculture and supply chain technology in sectors where TELUS Health and TELUS Agriculture & Consumer Goods have leading market positions, a robust brand profile and superior product technologies.

10.6 Security and data protection

Risk category: Operational

As a national provider of information and communications services, we have a perspective extending beyond that of individual organizations. We leverage this insight and understanding to monitor and identify security-related trends as they evolve across the wider threat landscape. The risks outlined below reflect both our experience and the trends we have observed in the wider ecosystem.

We have a number of assets that may be exposed to risks involving intentional threats. These include physical assets that may be exposed to terrorist attacks, vandalism and/or theft, including, but not limited to, cellular towers, distributive copper and fibre cable, corporate stores, network and telephone switch centres, and elements of corporate infrastructure.

Cyberattacks that penetrate the network security of our data centres, or any unauthorized disclosure of, or access to, the personal information or confidential data of our customers and clients or their end customers, could have a negative impact on our brand and reputation and customer confidence, all of which could have a material adverse effect on our business operations, legal liability, as well as our financial performance. TELUS Health operates data centres and collects and manages data on behalf of customers, including sensitive personal health information, that may move across our interconnected operational and business support systems and networks. Personal health information is known to be a prime target for these forms of attack. Breaches involving personal health information may have significant financial implications, while also damaging our reputation and the trust of our customers, with potential impacts on future health outcomes. In addition to data security risk, the use of sensitive personal information by TELUS or TELUS Health may expose us to the risk of non-compliance with the law where unauthorized, or may compromise perceptions of our brand or ethical standards where the use is seen as inconsistent with customer expectations or social norms.

A number of TI's service contracts provide for high or unlimited liability for the benefit of its clients in relation to any damages resulting from breaches of privacy or data security associated with the provision of its services.

Although our network security measures and our procedures for the authentication of customer credentials are designed to protect against unauthorized disclosure, alteration and destruction of, and access to, data on our networks, it is not possible for such security measures to be perfectly effective. There can be no assurance that such measures will function as expected or will be sufficient to protect our network infrastructure against specific attacks, and there can be no assurance that such measures will successfully prevent or mitigate service interruptions or other security-related incidents. All network infrastructure is vulnerable to rapidly evolving cyberattacks, and our user data and corporate systems and security measures may be breached due to the actions of outside parties (including malicious cyberattacks), team member error, malfeasance, internal bad actors, a combination of these, or other circumstances. A breach may allow an unauthorized party to obtain access to or exfiltrate our data or the data of our customers or clients. Additionally, outside parties may attempt to fraudulently induce team members, users, customers or clients to install malicious software, disclose sensitive information or access credentials, or take other actions that may provide access to our data or the data of our users, customers or clients. Because networking and computing environments are increasing in complexity and the techniques used to obtain unauthorized access, disable or degrade service or sabotage systems change frequently, become more sophisticated over time, or may be designed to remain dormant until a predetermined event and thus may not be identified until deployed against a target, we may be unable to anticipate these techniques or put in place adequate preventative measures. If an actual or perceived breach of our security measures occurs (or a breach of the security measures of a third-party vendor, customer or client that can be attributed to our failure or is perceived to be our fault), the market perception of the effectiveness of our security measures could be harmed and we could lose users, customers and clients. Security breaches also expose us to risk involving loss of information, class action or other litigation brought both by customers and clients and by individuals whose information may have been compromised; or to risk involving remediation costs, increased costs for security measures, loss of revenue, damage to our reputation, and potential liability.

Potential impact

Physical security threats can expose both our team members and our infrastructure, systems and networks to the risk of incurring significant harm, which could include personal injury, destruction of property and loss of service and/or data.

Along with the rapidly evolving nature and sophistication of these threats, we and our partners may also be subject to software, equipment or other system malfunctions that could result in unauthorized access to, or change, loss or destruction of, our data. These malfunctions could compromise the privacy of individuals, including our customers, team members and suppliers, and could expose other sensitive information.

A successful disruption of our systems, networks and infrastructure, or those of third parties, including our suppliers, vendors and partners, may prevent us from providing reliable service, impact the operations of our networks, or lead to the unauthorized interception, destruction, use or dissemination of our information or our customers' information. Such disruption, whether physical or digital, or unauthorized access to our data could cause us to lose customers or revenue, incur expenses or experience reputational and goodwill damages. Additionally, such damages could result in us incurring costs arising from investigation efforts, replacement or restoration of assets and potential civil lawsuits or fines imposed by regulatory bodies.

While we believe our team members receive appropriate training, if any person, including any of our team members, negligently disregards or intentionally breaches controls or procedures with which we are required to comply in relation to a customer's data, or otherwise mismanages or misappropriates that data, or if unauthorized access to or disclosure of data in our possession or control occurs, we could be subject to significant liability to our customers, the clients of our TI subsidiary, or the customers of those clients for breaching contractual confidentiality and security provisions or for permitting access to personal information protected by privacy laws, as well as liability and penalties in connection with any violation of applicable privacy laws or criminal prosecution. Unauthorized disclosure of sensitive or confidential customer, client or team member data, whether through breach of computer systems, systems failure, team member negligence, fraud or misappropriation, or otherwise, could damage our reputation and cause us to lose customers and clients and result in liability to individuals whose personal information has been compromised.

Similarly, unauthorized access to our information systems and networks, or those we develop or manage for our customers and clients, whether by our team members or third parties, could result in negative publicity, damage to our reputation, loss of customers, clients or business, class action or other litigation, costly regulatory investigations and other potential liability.

Our operations, including TELUS Health (through the acquisition of LifeWorks) and TELUS Agriculture & Consumer Goods, increasingly take place in a variety of international jurisdictions. Global business activities are associated with a more complex regulatory privacy environment and an elevated exposure to compliance risk. The European Union has comprehensive data governance laws with significant enforcement powers, such as penalties based on a percentage of gross global revenues. For example, non-compliance with the European Union General Data Protection Regulation could result in a fine of up to 4% of TELUS' annual global revenues and orders requiring us to stop processing certain personal data. Other jurisdictions in which we operate may also involve exposure to different regulatory and liability risks related to data security issues, such as data breaches. Shifting social perceptions also increase brand risk, as customer expectations around data handling practices and transparency are heightened.

Changes over the past 12 months

Major trends evident in the cybersecurity threat landscape in 2022 included ongoing use of ransomware and supply chain attacks, as well as emerging threats such as the Russia-Ukraine conflict (which resulted in a heightened global state of alert for security organizations) and other geopolitical developments. Supply chain attacks continue to be attractive to cybercriminals, since they can have a significant impact on downstream organizations, which adds to the pressure on the primary target and could permit cybercriminals to apply that pressure against the downstream organizations and make further demands.

With our perspective and our monitoring capabilities, we have observed that the frequency and sophistication of cyberattacks continue to increase, with attack techniques evolving in parallel with trends in technology. These attacks may involve a variety of techniques that include the targeting of individuals and the use of sophisticated malicious software and hardware, or a combination of both, to evade the technical and administrative safeguards that are in place (including firewalls, intrusion prevention systems, active monitoring and other measures).

Mitigation

Our security program addresses risk through a number of mechanisms, including:

- Detailed security reviews of all third-party connections, identifying risks and developing plans for remediation
- Added security due diligence for all new business acquisitions to ensure their security is protected at the same high standards and the level of risk mitigation we have in place for our existing infrastructure and applications
- Security awareness programs
- Controls based on policies, standards and methodologies that are aligned with recognized industry frameworks and practices
- Monitoring of external activities by potential attackers
- Rapid security incident response
- Regular security evaluations of our most important assets

- Identification and regular re-evaluation of our known security risks
- Regular reviews of our standards and policies to ensure they address current needs and threats
- Regular reviews of our business continuity and recovery planning processes that would be invoked in the event of a disruption
- A privacy and security impact assessment process
- A secure-by-design process that incorporates security provisions into new initiatives across the Company .

Our Data and Trust program addresses data privacy and data governance risks through a number of mechanisms, including:

- The TELUS privacy commitment and code (additional information can be found at: **telus.com/en/about/privacy/commitment-code**)
- The TELUS privacy management program, which includes mechanisms for the identification, mitigation, monitoring and reporting on privacy risk. This framework has been made available to all of our team members, as well as our customers (additional information can be found at: **telus.com/en/about/privacy/management-framework**)
- Our robust data governance model that addresses the operational risks associated with the use and handling of personal data, with guidance on the risks associated with data, the importance of respecting the confidential nature of customer data and the essential objective of maintaining customer trust
- Our data enablement plan process and data risk management process, which supplement the existing mechanisms for the early identification, assessment, treatment and monitoring of data privacy risks. These processes are supported by a growing network of trained business data stewards deployed across our operating units. The business data stewards provide more informed practical insight and monitoring for data governance.

Incident response is also a critical component of control within our organization. Our technical capabilities help us identify security-related events, respond to potential threats and adjust our security posture appropriately. Additionally, our approach to cyber-hygiene includes regular vulnerability assessments and the prioritization and remediation of any identified exposure through patching or other mechanisms. Our security office also works with law enforcement and other agencies to address ongoing threats and disruptions, and provides awareness training to our team members to help them better recognize and report threats.

10.7 Our environment

Risk category: Operational

Our operations, infrastructure and team members are exposed to climate-related physical risks, which include extreme weather events and other natural hazards. We may also be exposed to transition risks related to climate change, such as the impact of changes in policy or the deployment of lower-emission technology.

Our data and voice communications infrastructure, including TI delivery locations in Asia Pacific, Europe and the Americas, may be damaged or disrupted as a result of natural disasters or extreme weather events, including those resulting from or exacerbated by climate change, such as earthquakes, floods, volcano eruptions, heavy rains, winter storms, extreme heat waves, tsunamis and cyclones; epidemics or pandemics; technical disruptions and infrastructure breakdowns, including damage to, or interruption of, electrical grids, transportation systems, communication systems or telecommunication cables; issues with information technology systems and networks, including hardware malfunctions, software vulnerabilities and electronic viruses or other malicious code; accidents and other events, such as fires, floods and failures of fire suppression and detection, heating, ventilation or air conditioning systems; or other events, such as protests, riots, labour unrest, security threats and terrorist attacks. Any of these events may lead to the disruption of information systems and telecommunications services for sustained periods, cause delays and inefficiencies in providing services to clients and potentially result in the closure of our operating sites. They also may make it difficult or impossible for team members to travel to, or work in, our business locations. Some locations may not be well-suited to work-from-home approaches to providing client services due to connectivity, infrastructure or other issues.

Certain areas of our operations are subject to environmental considerations, such as the construction of telecommunications infrastructure, handling and disposing of waste, electronic waste or other residual materials, managing our water use, and responding to spills and releases. The pace at which we can reduce emissions of greenhouse gas (GHG) depends on a variety of factors that can change over time. Our most significant sources of scope 1 and 2 GHG emissions include, but are not limited to, direct energy and indirect energy for use at our owned and leased real estate properties in Canada, cell tower sites and vehicle fleets, as well as remote generator fuel, which is within our operational control but subject to other risks. Some areas of our operations are also subject to evolving and increasingly stringent federal, provincial and local environmental and health and safety laws and regulations. Such laws and regulations impose requirements with respect to matters such as the release of certain substances into the environment, corrective and remedial action concerning such releases, protection of sensitive ecosystems and associated wildlife habitat, and the proper handling and management of certain substances, including wastes.

Potential impact

Evolving public expectations and increasingly stringent laws and regulations could result in increased costs of compliance, while failure to recognize and adequately respond to them could lead to penalties, regulatory scrutiny or damage to our reputation and brand. We may not be able to achieve our targets and objectives with respect to reducing GHG emissions, which may lead to adverse publicity and damage to our reputation. As it relates to our sustainability-linked bonds issued through 2022, failure to achieve our sustainability performance target – a reduction of 46% in our absolute scope 1 and 2 GHG emissions by 2030 from a base year of 2019 –would trigger higher interest payments associated with these bonds through an interest rate step-up.

Damage or destruction that interrupts our provision of services could adversely affect our reputation and our relationships with our customers and clients, and could also cause us to incur additional expenditures to repair or replace damaged equipment or sites. Our resiliency provisions and disaster recovery plans may not be sufficient to support continuity and reliability of service during disruptions or reduce the duration and impact of service outages. While we currently have commercial liability insurance, our insurance coverage may be insufficient or may not provide coverage at all for certain events. Furthermore, we may be unable to secure such insurance coverage at premiums acceptable to us in the future, or such insurance may become unavailable. Prolonged disruption of our services could also entitle our customers and clients to terminate their contracts with us or require us to pay penalties or damages. Any of the above factors may materially adversely affect our business operations, financial performance, financial condition and cash flows.

Changes over the past 12 months

Along with the continued and widely shared concerns about climate-related and other environmental impacts on our business operations, there are growing expectations and evolving global regulatory regimes for the disclosure of environmental and sustainability governance, strategies, metrics and targets, and risk management practices, including climate-related scenario analysis. In its 2022 Status Report, the TCFD stated that the number of organizations expressing support for TCFD had grown to more than 3,800 globally, with many companies having begun to implement TCFD recommendations. Our disclosure aligning with these recommendations can be found in our 2022 AIF.

Potential impacts associated with low levels of non-ionizing radio frequency (RF) emissions from mobile phones and cell towers continue to be a matter of public concern, and will remain a public concern as we deploy 5G technology, with the number of small cells in our infrastructure expected to increase as we continue to upgrade our network.

Mitigation

We have in place widely recognized and award-winning business continuity and disaster recovery programs that encompass provisions for monitoring and preparedness, mitigation, response and recovery. These programs enhance the safety of our team members, minimize the potential impact of threats to our facilities, infrastructure and business operations, support the maintenance of service to our customers and help keep our communities connected.

Our EMOC continued to meet periodically to coordinate strategic management of the pandemic and advise on tactical issues such as door-to-door activities, safety measures at our retail locations, and technician safety in the field. COVID-19 case counts are closely monitored so that we can align our operations with public health measures within individual public health agency jurisdictions. These actions are likely to continue in 2023.

The Corporate Business Continuity Office convened the EMOC to manage the impacts of three events in 2022: COVID-19, the Russian invasion of Ukraine, and Hurricane Fiona. Several other weather-related incidents, such as flooding and wildfires, required enhanced monitoring and coordination, but they were successfully managed by specialized operational teams without the need for an EMOC activation.

We have established an enterprise-wide proactive climate change event preparedness program. This forward-looking program is intended to bolster our network infrastructure and ensure operational resilience in response to the risks and vulnerabilities associated with events that may be driven by climate change. Specific initiatives include structural mitigation, vegetation management, dynamic risk forecast mapping and evolving network build standards that address a rapidly changing climatic environment. This is an ongoing effort, with clearly identified objectives and outcomes that extend several years into the future.

We continue to move forward on a number of projects and programs to reduce energy use – the primary source of our GHG emissions – such as lighting retrofits and network equipment upgrades, along with longer-term initiatives such as our vehicle fleet electrification program, which includes a fit-for-purpose component.

We are committed to following sustainable and responsible business practices and making decisions that balance economic growth with social and environmental benefits. We have implemented award-winning sustainability and environmental governance practices and related disclosure. The review and monitoring of our approach to environmental, governance and sustainability matters is the responsibility of the Corporate Governance Committee, acting on behalf of our Board. This includes our strategic plans and objectives, as well as our reporting on exposures to climate-related risks. Our Chief Executive Officer and Executive Team exercise oversight of climate-related risks and opportunities and provide approval of the overall strategic direction of our sustainability programs. Our Sustainability and Environmental Compliance team prepares quarterly reports for the Corporate Governance Committee, as well as other updates for the Board as required, on risks, targets and other key performance metrics related to climate change and the environment.

Disclosure in our sustainability and ESG report and other filings contains information pertaining to the governance and management of climate-related risks and opportunities. We conduct scenario analysis to assess the resilience of our corporate strategy in different climate scenarios. Analyzing and disclosing the outcomes under the various scenarios informs our planning and supports our efforts to help mitigate changes in climate, as new climate-related regulations emerge and new technologies evolve. At the same time, these analyses help us identify new opportunities for our business and inform our stakeholders about our approach to managing the new and emerging risks that accompany these opportunities. In 2022, working with a third party, we undertook a comprehensive qualitative scenario analysis assessment of our business operations (excluding upstream and downstream activities). The analysis combined an assessment of transitional climate risks and opportunities and an assessment of physical climate risks and opportunities. Additionally, we have established corporate targets with respect to operational net carbon neutrality, renewable energy, energy efficiency and waste reduction. Included in these are science-based targets, approved by the Science-based Targets initiative, for our scope 1, 2 and 3 GHG emissions. Related action plans include entering into multiple virtual power purchase agreements for renewable energy.

An ISO 14001:2015 certified environmental management system is in place to identify and control environmental impacts associated with our operations and to support compliance with regulatory requirements. We continue to identify new ways to reduce our environmental impact.

See our climate-related financial disclosure in *Section 5.2* of our 2022 AIF. Additionally, a detailed report of our environmental risk mitigation activities and details with respect to our targets can be found in our sustainability and ESG report at **telus.com/sustainability**.

Canada's federal government is responsible for establishing safe limits for human exposure to RF electromagnetic fields. We are confident that the mobile handsets and devices we sell, and our cell towers and other associated devices, comply, in all material respects, with all applicable Canadian and U.S. government safety standards. We continue to monitor new published studies, government regulations and public concerns about the health impacts of RF exposure. Stakeholder engagement is also ongoing as part of the regulatory process involved in the installation of new cell towers.

10.8 Operational performance and business combination

Risk category: Strategic

We will partner, acquire and divest as necessary to accelerate the implementation of our growth strategy. Through the partnerships and acquisitions we pursue, we may seek opportunities to expand the scope of our existing services, add new customers or enter new markets around the world. There can be no assurance that we will successfully identify suitable candidates in the future for partnerships, for strategic transactions at acceptable prices or at all, or be able to complete any such transactions.

As we implement this strategy, we continue to experience rapid growth. We have significantly expanded our operations into new business sectors and geographic markets, and the number of our team members has grown significantly over the past several years. We expect to develop and improve our internal systems in the locations in which we operate in order to address the anticipated continued growth of our business. We are also continuing to look for delivery locations, service offerings and organizations outside of our current geographic operating regions in order to minimize the risks of operating in a limited number of countries and/or expand our capabilities and customer value propositions. However, we may not be able to effectively manage our infrastructure and team member expansion, establish additional delivery locations or hire skilled team members as and when they are required to meet the ongoing needs of our customers and clients and to maintain our current growth trajectory, and we may not be able to extend or improve our internal systems. We also need to manage cultural differences among our team members, which may heighten our exposure to the risk of employment law claims. Our inability to execute our growth strategy, to ensure the continued adequacy of our current systems or to manage our expansion, capital and other resources effectively could have a material adverse effect on our business operations, financial performance, financial condition and cash flows.

A substantial amount of the assets and operations of our TI and TELUS Agriculture & Consumer Goods businesses are located outside of Canada and the United States. With our recent acquisition of LifeWorks, we are also adding to the number of health assets and operations of TELUS Health outside of Canada. In addition, the business strategies of TI, TELUS Health and TELUS Agriculture & Consumer Goods may involve further expansion or development of their business operations in Europe or in emerging market regions, including Asia-Pacific. Due to the international nature of our business operations, we are exposed to various economic, political and other risks associated with doing business globally.

Potential impact

Business combination transactions add complexity to our corporate structure, product and service offerings, and operational systems and processes. If pre-acquisition due diligence is insufficient or ineffective, our investments may not achieve potential synergies or generate strategic growth.

We may be unable to successfully identify, complete, integrate and realize the benefits of our current or future acquisitions, or manage the associated risks. Consequently, any acquisition we complete may not result in anticipated or long-term benefits or synergies to us, and we may not be able to develop the acquired business in the manner we anticipated.

Acquisitions involve a number of risks, including diversion of management's attention from operating our business, managing our infrastructure and team member expansion, developing our relationships with customers and seeking new revenue opportunities; failure to retain key personnel of acquired companies; legal risks and liabilities associated with an acquisition or an acquired entity's legacy operations that may be unknown or undisclosed and for which we may not be indemnified fully or at all; failure to integrate an acquisition in a timely manner; and in the case of potential acquisitions, our ability to finance the acquisitions on attractive terms or at all, any of which could have an adverse effect on our business operations, financial performance, financial condition and cash flows. Future acquisitions may also require that we incur indebtedness or issue equity securities.

We could also experience financial or other setbacks if transactions encounter unanticipated problems, including problems related to execution, integration or underperformance relative to prior expectations. Due diligence and post-acquisition activities include the review and alignment of team member cultures, accounting policies, treasury policies, corporate policies such as ethics and privacy policies, team member transfers and moves, information systems integration, optimization of service offerings and the establishment of control over new operations. Such activities may not be conducted efficiently and effectively. Our management may not be able to successfully integrate any future acquired business into our operations and culture on the anticipated timeline or at all, or maintain our standards, controls and policies, which could negatively impact the experience of our customers and clients, the optimization of our service offerings and our control over operations, and otherwise have a material adverse effect on our business, financial performance, financial condition and cash flows. Consequently, acquisitions may not produce anticipated or long-term benefits or synergies for us, and we may not be able to develop the acquired business in the manner we anticipated.

The risks associated with doing business globally and in emerging markets may impede the execution of our strategy by limiting the countries and regions in which we are able to expand. The impacts of these risks may also emerge only after we have begun preparations and made investments to provide services in a new country or region. Our exposure to such risks may cause us to incur additional costs to mitigate the potential impact of these risks on our business. As we continue to operate our business globally, our success will depend, in part, on the nature and extent of any such impacts and our ability to anticipate, respond to and effectively manage these impacts. Finally, international trade and political disputes can adversely affect the operations of multinational corporations like TELUS by limiting or disrupting trade and business activity between countries or regions. For example, we may be required to limit or halt operations, terminate customer or client relationships or forgo profitable opportunities in countries which may, in the future, be subject to sanctions or other restrictions on the business activity of corporations such as TELUS, by U.S. or Canadian legislation, executive order or otherwise. Some TI clients have been targeted by, and may in the future be subject to, such sanctions. Additionally, trade disputes between countries may also lead to unexpected operating difficulties in certain countries, including heightened regulatory scrutiny, greater difficulty transferring funds or negative impacts on currency exchanges. All of the foregoing could have a material adverse effect on our business operations, financial performance, financial condition and prospects.

Given the rapid rate of technological change, we may also look to partner and invest in emerging opportunities that may not yet be fully viable and established. These investments may require high levels of initial funding and experience low levels of initial adoption, growth and returns, all of which could impact our financial position in the short term.

Changes over the past 12 months

Over the course of 2022, we made a number of acquisitions to support our growth strategy. Please refer to *Note 18* of the Consolidated financial statements for more information.

Mitigation

To support ongoing investment in leading-edge and innovative technology, we have diversified our approach to allow for varied levels of investment, which we determine based on the relative maturity of a technology in its life cycle, its alignment with our strategy and its linkage with our value proposition. Through TELUS Ventures, we invest in line with our commitment to help develop exciting new technologies with the potential to deliver benefits for our customers, stakeholders and shareholders while minimizing risks. In addition, we continue to engage in partnerships that can conduct research and development of leading-edge innovative technology and services in sectors such as healthcare, agriculture and entertainment.

Over the course of time, we have built a disciplined corporate development and ventures expertise, with due diligence and post-acquisition integration planning rigour, reinforced by a well-defined process and governance approach to evaluating investments and acquisitions. Where a larger-scale business combination is contemplated, our teams follow a well-established and collaborative due-

diligence review process, with oversight by our senior leadership and Board. In addition, formal post-acquisition processes are in place to support onboarding and engagement, as well as operational integration with our risk monitoring and management practices.

TELUS Health is currently realigning its organizational priorities to ensure that its business model is customer-facing and its operations focus on customers first. The acquisition of LifeWorks is a catalyst for transformation, and TELUS Health has moved at a rapid pace to build a team committed to its forward-looking strategic objective of becoming a leading global healthcare organization.

10.9 Customer service

Risk category: Operational

Our customers' loyalty, their likelihood to add to the services they engage us for, and their likelihood to recommend us all depend on our ability to provide a service experience that meets or exceeds their expectations and is differentiated from our competitors. Our service delivery teams focus on operational excellence and efficiency, implementing radical simplification, investing in digitization to enhance the customer experience and becoming best-in-class solution advisors, with the objective of safely minimizing the effort involved for our customers when they interact with us. Having our TI team members assist with customer-serving activities further strengthens our ability to continue delivering exceptional customer service.

Potential impact

Delivering sub-optimal experiences when our customers engage with us for the provision of services or support may negatively impact customer satisfaction, our portfolio of brands and our ability to grow our customer base, including customers of our telecom businesses, our digitally-led customer experiences – TELUS International (DLCX) segment, TELUS Health and TELUS Agriculture & Consumer Goods. Inadequate or inefficient customer interactions (e.g. order taking, support contact, service delivery, billing accuracy, and network and services reliability) may increase customer dissatisfaction and churn rates. Failure to continue to execute effectively on organizational initiatives, such as our solutions advisor support, digitization and simplification, or our customers first priority, may lead to a deterioration in the customer experience we provide. Any significant or prolonged systems and service disruptions or outages may negatively impact customer satisfaction and our brands.

Our corporate sustainability and social purpose initiatives are an important part of our organizational culture and are key factors in attracting and retaining customers and employees and differentiating us from our competitors. If we are unable to meet or exceed the evolving expectations of our customers in these areas or implement high-quality corporate sustainability and social purpose initiatives on a timely basis, and effectively communicate them to our customers, our reputation may suffer, which may negatively impact our ability to attract new customers and retain existing customers.

Our DLCX business has derived a significant portion of its revenue from a limited number of large clients, and we believe this will continue in the near term. A leading social media company was TI's largest external client in the years ended December 31, 2022 and 2021, and accounted for approximately 15% and 18%, respectively, of its revenue in those periods. Additionally, the volume of work performed for specific clients of TI or the revenue it generates can vary from year to year. Any significant reduction in, or elimination of, the use of the services TI provides as a result of client consolidation or our removal from a key client's provider network would reduce TI's revenue and could negatively affect our business. In addition, such consolidation may encourage clients of TI to apply more pressure on our subsidiary to lower the prices it charges for its solutions.

Changes over the past 12 months

Changes in customer expectations and preferences, resulting in part from their experiences throughout the COVID-19 pandemic, have had widespread effects on many areas of service delivery. These include a major acceleration of our transformation into a digital-first organization and the proliferation of self-serve capabilities to help our customers. The related impacts have affected our teams around the world, requiring us to be agile in enabling team members to work with customers virtually through our virtual technician model (VTM) and do-it-yourself (DIY) capabilities.

Mitigation

Continued simplification and digitization, including our ongoing work on conversational interactive voice response and enhanced call-back capabilities, have improved first-time interaction experiences by reducing the number of call transfers and shortening customer wait times. We continue to enhance the reliability and functionality of our websites and applications, while promoting digital

engagement to minimize effort for our customers and reduce the volume of calls related to basic transactions, interactions and other concerns.

Continuing to build on the innovative capabilities we developed during the pandemic, our field teams are now focused on reducing time in the home by retrofitting customer premises with DIY equipment as we update our customers' understanding of billable professional services. This is in conjunction with our focus on further developing our DIY installation and repair program and our VTM, which will generate further internal cost savings and offer greater choice for our customers. We have also invested in our work-from-home capabilities around the world, including additional virtual private network (VPN) capacity, allowing more than 90% of our global workforce to work from home or from alternative locations for the foreseeable future and serve our customers safely.

Our TI subsidiary was created with an intensive focus on customer service excellence, continuous improvement and a values-driven culture with the strategic objective of better serving a growing portfolio of global clients. Through TI, customer care and business services are delivered from within a unified TELUS-wide culture by a flexible team of over 69,000 team members in 28 countries, minimizing business disruptions. In October 2022, we announced a definitive agreement to acquire WillowTree, and the transaction was completed in early January 2023. WillowTree is a full-service digital product provider focused on end-user experiences, such as native mobile applications and unified web interfaces. The acquisition will enhance the premium front-end design and build capabilities that TI offers to its clients.

Through TELUS Health, we deliver healthcare technology solutions, health and well-being services, and financial and administration products and services to our customers. TELUS Health's employee assistance programs (EAPs) represent a significant global growth opportunity. We are committed to providing employee and family assistance programs (EFAPs) and mental health and well-being solutions to our customers. We have also introduced a hybrid approach to the implementation of our software solutions to better facilitate the delivery of healthcare services to our customers. Throughout 2022, more than 580 million digital health transactions (service utilization) have been recorded.

As a social capitalism company, we are committed to making a difference by building stronger, healthier communities and ensuring that the most vulnerable among us are not left behind. Through our Connecting for Good programs, we are making our technology accessible for all. Our Internet for Good program is focused on connecting Canadians in need by providing low-cost high-speed internet access for low-income families and seniors, young people leaving foster care, and people with disabilities. In addition, our Mobility for Good program provides subsidized smartphones and plans for young people leaving foster care, low-income seniors and Indigenous women at risk, helping them stay in touch with loved ones, maintain vital support networks and build new lives. Driven by the generosity and passion of our team members, retirees, family and friends, we volunteered 1.4 million hours globally in 2022, helping build stronger communities. Moreover, with the support of the TELUS Friendly Future Foundation and our 13 Canadian TELUS Community Boards, we are helping improve outcomes for over two million youth each year by directing our support to local charities across Canada. Further, our five TI Community Boards and our new TELUS Community Board in North Carolina ensure we support local charities in all of the communities in which we operate around the world. We believe these initiatives strengthen our customers' loyalty and their likelihood to recommend, and are key factors in differentiating us from our competitors. Additional information on our sustainability and environmental governance practices and related disclosure is included in *Section 10.7 Our environment*.

We continue to be ranked favourably in third-party reports based on customer and network experience. In 2022, we were ranked first in speed and recognized for providing the best video experience, best coverage and consistent quality by OpenSignal, Ookla and Tutela, as well as the best nationwide ISP in Canada for the third year in a row by PCMag. This successful performance was the result of continuing to evolve our coverage across Canada, increasing the accessibility of our network, and working to better understand the emerging network methodologies that can enhance coverage, all of which earned TELUS recognition for providing the best network coverage among our competitors.

10.10 Our systems and processes

Risk category: Operational

We are a key provider of essential telecommunications and security services in Canada. Through TI, we provide digital customer experience services to global brands, and through TELUS Health, we ensure optimal care is made possible by combining the power of technology and data with the provision of market-leading experiences. Within TELUS Agriculture & Consumer Goods, we leverage technology and data to improve the flow of information across the agricultural, food and consumer goods production industries in Canada and internationally. Our success depends on our ability to deliver reliable and continuous services to all of our customers.

We have a large number of interconnected operational and business support systems. Acquisitions, business combinations and the development and launch of new services typically require significant systems development and integration efforts. Acquisitions may also expose us to potential cybersecurity, privacy and brand risks. As leading-edge services are introduced, they must work with next-generation systems, frameworks and IT infrastructures, while also being compatible with legacy services and support systems. In addition, our large enterprise deals and the contracts our TI subsidiary enters into with its clients may involve complex and multi-faceted customer-specific enterprise requirements, including customized systems and reporting requirements in support of service delivery.

Potential impact

Our network, technology, infrastructure, supply chains, team members and operations may be materially impacted by disruptions in the functioning of critical infrastructure due to intentional threats (see *Section 10.6 Security and data protection*), labour disruptions (see *Section 10.11 Our team*), climate-related risks and natural hazards or unintentional threats (see *Section 10.7 Our environment*), health threats (such as epidemics or pandemics), competitive threats and geopolitical pressures. Any of these risks or hazards may lead to the disruption of our ability to deliver services to our customers and may also make it difficult or impossible for team members to travel to, or work in, our business locations. Damage or destruction that interrupts our provision of services could adversely affect our brand and reputation, our relationships with our customers and our leadership team's ability to administer and supervise our business operations, and could also cause us to incur substantial additional expenditures to repair or replace damaged equipment or sites. We may also be liable to our customers for any service disruption resulting from such damage or destruction. Our resiliency provisions and disaster recovery plans may not be sufficient to support the continuity and reliability of service during disruptions or reduce the duration and impact of service outages. While we currently have commercial liability insurance, our insurance coverage may be insufficient, or may provide no coverage at all for certain events. Furthermore, we may be unable to secure such insurance coverage at premiums acceptable to us in the future, or such insurance may become unavailable. Core expertise and competencies in all areas of our organization are in high demand worldwide and our operations and continued growth depend on our ability to hire, retain and develop highly skilled leaders and key personnel. Any of the above factors may adversely affect our business.

As the complexity of our systems increases, our system stability and availability may be affected. There can be no assurance that any of our proposed IT systems or process change initiatives will be implemented successfully, that they will be implemented in accordance with anticipated timelines, or that sufficient numbers of skilled team members will be available to complete such initiatives and maintain our competitive position in the marketplace. If we fail to implement and maintain appropriate IT systems on a timely basis, fail to create and maintain an effective governance and operating framework to support the management of our teams, or fail to understand and streamline our significant number of legacy systems and proactively meet constantly evolving business requirements, we could experience an adverse impact on our business and financial performance.

Changes over the past 12 months

Similar to other organizations, we rely on third-party cloud-based computing services to deliver our IT services through either software-as-a-service (SaaS) or infrastructure-as-a-service (IaaS) solutions. While this can result in benefits in terms of our speed to market, reliability, performance and agility, it requires adjustments to our operations and may increase the potential for service disruptions. Operational support processes and vendor negotiations must take into account that the delivery of hardware and software services may occur outside of our own infrastructure, and therefore controls need to be incorporated into our operational support processes and tools.

In addition, we routinely have numerous integration activities, complex system and process change initiatives, and development projects underway.

Mitigation

During the COVID-19 pandemic, we expanded our VPN capacity in order to ensure stability, productivity and security for team members working from home and from alternative locations, and we accelerated the purchase and deployment of a new VPN system, improving connection capacity and reliability while enhancing security measures. For clients of our TI's subsidiary, to the extent possible, we redirected customer volumes away from facilities impacted by local government-mandated temporary site closures to locations that were less affected. We have also equipped the majority of our customer-serving TI team members to provide remote support to clients, as they have done since the onset of the pandemic, and in some cases we have carefully and strategically had team members return to work on-site. In addition, the TI AI Data Solutions (TIAI) business utilizes the services of a crowd-sourced provider base that is geographically dispersed across the globe.

We have established a next-generation business support systems (BSS)/operational support systems (OSS) framework, based on the telecommunications industry's TeleManagement Forum standards, which separates BSS and OSS from underlying network technologies. This decouples the introduction and ongoing evolution of new network technologies from the provision of customer services, so both can evolve independently, enabling us to optimize network investments while limiting the impact on customer services. For example, we can deploy vendor technologies and SaaS and IaaS capabilities to avoid custom development where possible. We deployed this BSS/OSS framework concurrently with our fibre roll-out and legacy copper migration, and continue to use the framework for our 5G roll-out. As we make significant investments in system resiliency and network reliability in support of our ongoing customers first initiatives, the framework will allow us to advance and extend these systems and networks independently and more rapidly than we have been able to historically.

For each new large enterprise deal, we look to leverage systems and processes developed for previous contracts while incorporating other elements as required, using a controlled methodology to draft a new custom solution and following standard industry practices for project management and systems support. We have release and change management policies, processes and controls in place that are based on industry best practices. In general, we strive to ensure that system development and process changes are prioritized, and we apply a project management approach to such initiatives that includes appropriate risk identification and contingency planning, scope and change control, and resource and quality management. We conduct reasonable functional, performance and revenue assurance testing, as well as capturing and applying any lessons learned. Where a change involves major system and process conversions, we often shift our business continuity planning and emergency management operations centre to a heightened state of readiness in advance of the change.

Consistent with best practice, we continue to make investments in mitigating risk in older technology, modernizing key platforms and capabilities for greater flexibility and reliability, and securing the benefits and capabilities that cloud-based operations can offer. We continue to make progress in modernizing and improving our systems and critical applications by leveraging proven, state-of-the-art, cloud-based technologies and capabilities. We continue to augment our teams with additional digitization and cloud expertise so they can play a leading role, today and into the future. We are leveraging our 10-year partnership with Google to supplement our in-house expertise and experience as we extend the digitization of our business operations by harnessing the capabilities of Google Cloud Platform, as well as other partners and cloud-based service providers.

We have adopted a post-acquisition stabilization period for the SmartHome Security and automation line of business in order to thoroughly assess any risks, vulnerabilities and exposures, and consider the mitigation of key risks, before integrating common elements into our core systems and critical applications.

We conduct ongoing monitoring of our systems and critical applications. Risk-based disaster recovery capabilities are leveraged to help prevent outages and limit impacts on our customers and operations. In addition, enterprise-wide business continuity programs are in place to support monitoring, preparedness, mitigation, response and recovery.

10.11 Our team

Risk category: Operational

Our success depends on the well-being and engagement of our team members, and their diverse abilities and experiences, as well as our ability to attract, advance and retain the skilled and talented employees upon which our service offerings depend. Each year, we launch a number of unique initiatives that are intended to improve our productivity and competitiveness. These may include

acquisitions, operational business integrations, efficiency programs, business process automation and/or outsourcing, offshoring and reorganizations. Since providing support and resources that can help our team members keep themselves physically and mentally healthy is critical for engagement and productivity, our well-being strategy involves an array of programs and initiatives that foster optimal health and well-being for our team.

We believe that our unique customers first focus and our inclusive and caring culture have contributed to our ability to attract and retain a highly skilled, engaged and motivated workforce, which in turn has driven strong customer and client retention. It may become more difficult for us to maintain a culture that supports our success as we continue to evolve our products and services, enter new geographic areas, open new delivery locations, increase the number of team members and acquire new businesses. If our unique culture is not maintained, our ability to attract and retain highly skilled team members across our core verticals, as well as our customers and clients, may be adversely impacted, and our operational and financial results may be negatively affected.

Our business could also be adversely affected if individuals providing their data annotation services through TIAI's crowdsourcing solutions were classified as employees. The classification of certain individuals who provide their services through third-party digital platforms as independent contractors is currently being challenged by legislators and government agencies in the United States and many other countries in which our TIAI business uses the services of independent contractors. Similarly, some of our healthcare practitioners who are supporting our virtual care business in TELUS Health, as well as some of our engineers who are supporting the development of technology solutions in TELUS Agriculture & Consumer Goods, may be classified as employees instead of independent contractors by decision-makers in certain jurisdictions. We generally believe that most of those individuals who provide their data annotation services through TIAI's crowdsourcing solutions, those healthcare practitioners who support our virtual care business and those engineers who support the development of technology solutions are independent contractors. Independent contractors can choose whether, when and where to provide services, while data annotation professionals are free to provide services on competitors' platforms, and they use their own equipment. In the case of healthcare practitioners, they are free to provide services in other non-virtual healthcare settings. We may not be successful in defending the independent contractor classification in the jurisdictions in which we operate or such classification is challenged. The costs associated with defending, settling or resolving any future lawsuits (including demands for arbitration) that address the independent contractor classification could be material to our business.

Potential impact

Lost work time resulting from team member illness or injury can negatively affect organizational productivity and employee benefit costs. The loss of key team members through short-term and long-term disability (including absences resulting from mental health concerns), attrition and retirement, as well as the inability to attract and retain team members with essential or evolving skills, including familiarity with legacy systems, or, in the case of team members leading recent acquisitions in emerging areas of our business, specialized knowledge of such businesses, or any deterioration in overall team member morale and engagement resulting from organizational changes, unresolved collective agreements or ongoing cost reduction initiatives, could have an adverse impact on our growth, business and profitability and our efforts to enhance the customer experience. In addition, changes in technology are shifting the set of skills needed by our team and driving competition for resources among global players.

Our corporate sustainability and social purpose initiatives are also important to our team members, as is our ability to offer resources and services to maintain optimal health and well-being. Our failure to meet or exceed our team members' evolving expectations in these areas could have adverse impacts on our ability to attract and retain team members.

Changes over the past 12 months

The COVID-19 pandemic continues to cause heightened uncertainty in many of our lives, resulting in higher levels of stress and anxiety and waning resiliency among our team members. Many Canadian workers – our team members included – are still working from home, isolated from peers and extended family members and friends, and juggling multiple competing priorities.

Global events and ongoing efforts in marginalized communities to achieve equality and social justice have also focused attention on the discrimination and racial injustice that continue to affect many communities.

The collective agreements related to our three largest bargaining units, covering approximately 7,120 employees, have expired and negotiations to renew these agreements are currently underway. The collective agreement between TELUS and the TWU, USW Local 1944, covering approximately 5,880 employees in customer service, support and technology operations positions, expired on

December 31, 2021. Collective bargaining between the parties commenced in October 2021, and continued through to October 2022, when the TWU filed for conciliation and sought the assistance of a federal mediator. While the conciliation process did not result in an agreement, our offer was submitted to employees for a ratification vote in January 2023. The vote, which concluded on January 28, 2023, resulted in the offer being rejected by 65% of TELUS employees who voted. While the union is not in a legal position to initiate a strike as of the date of this MD&A, a work stoppage remains a possibility if an agreement cannot be reached in the future and all other legal pre-conditions are met by the parties.

Mitigation

Our People and Culture team works to provide an environment for our team members that is safe, empowering and engaging. Our culture is anchored in our TELUS values. Those values have been the cornerstone of our high-performance culture, defining TELUS as both an organization and a team, and guiding our interactions with each other, our customers and communities. In 2021, we reviewed our values to ensure they mirror the evolution of our organization and our transformative journey to build a friendlier future for all. Our evolved values that were launched in 2022 are a direct reflection of feedback from our team members and the spirit of our original values, which have driven our success for over 20 years. They encompass our unwavering customers first mindset, our commitment to diversity and inclusion, and our support for communities:

- We passionately put our customers and communities first
- We embrace change and innovate courageously
- We grow together through spirited teamwork.

Our objective is to attract, develop and retain talented employees. We achieve this objective by investing in our people throughout their careers, and by offering diverse and inclusive employment prospects and development opportunities.

To support team members' overall well-being and to achieve a positive effect on absenteeism in the workplace, we take a holistic and proactive approach to health that involves risk prevention, early intervention, team member and family assistance, mental health training, engaging social and educational well-being initiatives, assessment and support services, disability management, and accommodation and return-to-work services. Our well-being strategy aligns with best-in-class frameworks, including the National Standard for Psychological Health and Safety, and encourages our team members to develop optimal personal health across five dimensions of well-being: physical, psychological, financial, social and environmental. To promote safe work practices, we offer training and orientation programs for team members and contractors who have access to our facilities.

Having teams that are engaged leads to a better team member experience, which in turn drives an improved customer service experience – our customers are more satisfied, resulting in a lower churn rate for our products and services.

Through our annual Pulsecheck engagement surveys, we continue to assess our team's health and well-being and gather their insights about our work environment, including changes due to the COVID-19 pandemic. Key highlights included team members confirming their belief that their safety is a priority for their leaders; that their leaders have been providing the support they need during this extraordinary time; and that their work arrangements allow them to collaborate productively to meet the needs of customers. According to Kincentric, our survey provider, TELUS is the most engaged organization globally among organizations of our size and composition.

At TELUS, we believe that honouring the diversity of our team, customers and communities opens up new perspectives and enables us to connect for good and deliver remarkable outcomes for everyone. In 2022, by focusing on both behavioural and structural changes, as well as confirming our alignment with current best-in-class diversity and inclusion (D&I) practices, we continued to advance our equitable workplace culture and our multi-year D&I evolution strategy.

We appreciate and celebrate every team member's unique talents, voice and abilities, and we encourage them to always bring their whole selves to work. In 2022, we achieved a score of 85% on our inclusion index, which is an indicator of the strength of our inclusive culture – one that values diversity of thought and meaningful input.

We are working on the implementation of our first five-year Indigenous Reconciliation Action Plan (IRAP), remaining steadfast in our accountability and commitments to Reconciliation. We continue to push for innovation and creativity in responding to the needs of Indigenous communities. Additional information can be found at **telus.com/reconciliation**.

We aim to attract and retain key team members through both monetary and non-monetary approaches. Our compensation and benefits program is designed to support our high-performance culture and is both market-driven and performance-based. Where required, we implement targeted retention solutions for employees with critical skills or talents that are scarce in the marketplace, and we have a succession planning process in place to identify top talent for senior-level positions.

We focus on and manage organizational change through a formal business transformation function that leverages the expertise, key learnings and successful practices developed in recent years during the implementation of mergers, business integrations and efficiency-related reorganizations.

We have a post-acquisition integration team that works with our business units and the operations they acquire, applying an integration model based on learnings from previous integrations, while also focusing on the unique attributes and workplace cultures of the acquired companies, which advances the standardization of our business processes and is intended to preserve the unique qualities of each acquired operation.

With respect to collective bargaining, a governance model is in place to ensure the financial and operational impacts of any collective agreement settlements are assessed, and the outcomes are cost-effective, affordable and aligned with our strategic direction. In addition, while a possible work stoppage may lead to reduced productivity and increased costs, extensive business continuity planning has been undertaken over a period of months, resulting in comprehensive emergency operations plans and a high level of readiness for this possibility.

Additionally, we continuously strive to raise the level of our team members' engagement. We believe that our strong team member engagement continues to be driven by our focus on the customer and team member experience, our success in the marketplace and our social purpose. We plan to continue our focus on other non-monetary factors that are supportive of team member engagement, including performance development, career opportunities, learning and development, recognition, diversity and inclusion, well-being resources and programs, our leading-edge Work Styles program (enabling team members to work where and how they will be most effective and equipping them with robust digital collaboration tools to stay connected), and our community volunteerism, including TELUS Days of Giving. Additional information on our programs can be found in our sustainability and ESG report at **telus.com/sustainability**.

10.12 Suppliers

Risk category: Strategic

We rely on our relationships with multiple vendors, including large suppliers such as Amazon, Apple, Cisco, Ericsson, Google, Microsoft, Nokia and Samsung, which are important in supporting our network and service evolution plans and our delivery of services to our customers. Our suppliers and vendors may experience business difficulties or privacy and/or security incidents, and may face external challenges, such as epidemics or pandemics, global supply chain shortages or global shipping and port disruptions, as well as government or regulatory pressures. They may restructure their operations, be consolidated with other suppliers, discontinue or cease to provide support or updates for certain products, or sell their operations or products to other vendors. In addition, various suppliers may sell products or services directly to our customers, rather than selling those products and services through us.

In certain cases, the number of suppliers of a product, service or technology that we use is limited. In addition, government or regulatory actions with respect to certain countries or suppliers may affect our relationship with certain vendors and our future use of their products and services.

Potential impact

Our agility in the delivery of products and services is directly linked to our ability to engage or replace a supplier or vendor on a timely basis and without incurring additional cost. Reliance on certain manufacturers may strengthen their market power and adversely affect our ability to purchase certain products at an affordable cost. Consequently, the success of upgrades and the evolution

of technology that we offer our customers may be impacted, as well as the cost of acquisition or the time required to deploy certain technologies and systems.

There is no guarantee that our vendor strategies and agreements will not be impacted by operational difficulties or government/regulatory pressures experienced by vendors, or that we will not incur additional costs or delays in continuing to provide services or in deploying our technologies and systems.

Changes over the past 12 months

The continued reduction in air cargo capacity related to the COVID-19 pandemic has resulted in a rising demand for ocean freight. This has put pressure on the availability of both shipping vessels and ports, as well as domestic road and rail transportation capacities. The widely reported global supply chain shortages have had a notable impact on technology products, beginning with a shortage of silicon wafers and extending to the chipsets and circuit boards that are embedded in almost all of the products that we purchase. These shortages have resulted in both longer lead times and higher costs. While the combined logistical and supply chain challenges have mostly stabilized, the extent to which they will continue to adversely impact our operations and financial performance is uncertain.

As part of our 5G network upgrade, we have also chosen to replace many of the Huawei products in other layers of our network with enhanced equipment from the suppliers of our 5G network (either Ericsson, Nokia or Samsung). During the transition phase, components removed from the network will be used as replacements, as required on the remaining network, thus ensuring a supply of necessary materials.

Mitigation

We value our relationships with our suppliers because they help us achieve our business objectives and contribute to our success. We work closely with key strategic suppliers to ensure appropriate timing in the manufacturing, delivery and warehousing of their products so that our needs will be met regardless of changing conditions. We strive to direct our business to suppliers that have demonstrated a strong commitment to sustainable development by adopting ethical, labour, health and safety, and environmental principles and compliance practices that align with our expectations and support the well-being of their employees, contractors and communities.

In response to the impact of the pandemic and global supply chain challenges, our supply operations, in collaboration with our product development and marketing teams, have extended future forecasts and increased purchase order quantities to help maintain our fulfilment capabilities in the context of longer lead times. In addition, we continue to seek alternative devices or sources of supply, and where possible, we refurbish equipment in the form of certified pre-owned devices, including smartphones from our Bring-it-Back program and our professional device repair businesses, such as Mobile Klinik and uBreakiFix, to support sustainability.

As a leading network aggregator, we partner with several network equipment suppliers and work with numerous international and domestic vendors to deliver the best possible experience for our customers across our businesses. We consider possible vendor strategies and/or restructuring outcomes when planning for our future growth, as well as the maintenance and support of existing equipment and services. We have reasonable contingency plans for different scenarios, including working with multiple vendors, maintaining ongoing strong vendor relationships with periodic reviews of vendor performance, and working closely with other product and service users to influence vendors' product or service development plans. With continued international focus on telecom suppliers, business continuity plans have been formalized to ensure availability of supply in compliance with U.S. Bureau of Industry and Security (BIS) Entity List restrictions. For our 5G network build, we entered into partnerships with Ericsson, Nokia and Samsung, consistent with our multi-vendor strategy of limiting the risk that single-vendor dependence may lead to a single point of failure, which could be triggered by adverse economic conditions, geopolitical tensions, natural disasters or other difficult circumstances.

In addition, we regularly monitor the risk profiles of our key vendors and review the applicable terms and conditions of our agreements to determine whether additional contractual safeguards are required. We also promote our supplier code of conduct, which is based on generally accepted standards of ethical business conduct.

In respect of the risks associated with a dominant supplier's market power, we offer and promote alternative devices to provide greater choice for consumers and to help limit our reliance on a few key suppliers.

Additional information on supply chain sustainability can be found in our sustainability and ESG report at **telus.com/sustainability**.

10.13 Real estate matters

Risk category: Operational

Our real estate properties (owned or leased) include administrative office spaces and mixed-use office, commercial and residential properties, all of which may be developed through joint ventures, as well as other real estate development projects that advance our social purpose, work centres and space for the location of telecommunications equipment. Some buildings are constructed on leasehold land, and the majority of wireless radio antennae are either located on towers situated on lands, or are located on buildings that are held under leases or licences with varying terms. We are currently participating in two real estate joint ventures.

Investments in real estate property development, including return on investment and benefits realization, may be impacted by local economies, changes in construction costs and timelines, financing costs and partnership agreements. Our current and future investments in real estate may also continue to experience the effects of the COVID-19 pandemic, and we are monitoring the evolving return-to-office models.

Potential impact

Risks associated with our real estate investments include financing risks and uncertain future demand, occupancy and rental rates, especially during the pandemic. There can be no assurance that future real estate developments will be completed on budget or on time or will obtain lease commitments as planned. Accordingly, we are exposed to the risk of loss in relation to our loans and investments should the business plan of a real estate development project not be successfully realized.

Changes over the past 12 months

Over the course of 2022, we have:

- Entered into non-binding joint venture development agreements with two external real estate development firms for the redevelopment of four surplus real estate sites. These are expected to become definitive agreements by mid-2023, as their feasibility is confirmed
- Continued the execution of our future-mode-of-operation real estate projects, which involve consolidation of a number of large office holdings throughout the country representing a reduction of approximately 25% in the total floorspace at our office locations compared to our pre-pandemic office space
- Continued to downsize the critical network infrastructure located in our existing network buildings and reduced our requirements for equipment space through customer migrations from copper to fibre-based services.

TELUS Sky has completed the development phase and additional office and residential leasing is underway. TELUS Ocean in Victoria, B.C. received the required municipal approvals and construction and pre-leasing are proceeding as planned.

Mitigation

For our construction projects (residential and commercial) in progress, our exposure to the risk of budget overruns is limited by fixed-price supply contracts and expert project management oversight. Costs for the real estate projects are monitored through our capital gating and approval processes, and we plan to mitigate any risks related to leasing vacant space by arranging pre-lease agreements with prospective tenants prior to completion of construction.

On new deals, joint venture partners and developers are compensated partially on a performance basis that encourages projects to meet timing and budget objectives, and we engage independent third-party consultants to verify key assumptions such as market rental rates, construction costs and management costs. We also rely on our internal and external legal teams to ensure that the terms of any contracts, partnerships and procurement arrangements with third parties represent our interests.

We plan our lease strategy in advance for those properties that are not directly owned, including quarterly reviews of current market demand and requirements, as well as any related exposure to lease expiry risk, rental rate risk, landlord risk and physical risk (such as poor building condition or flooding).

10.14 Financing, debt and dividends

Risk category: Financial

Risk factors, such as fluctuations in capital markets, the economic environment or regulatory requirements pertaining to bank capitalization, lending activity or changes in the number of Canadian chartered banks, may impact the availability of capital and the cost of capital for investment-grade corporate issuers, including us.

The market price of our Common Shares may be affected by various factors, such as TELUS Corporation's continued access to bank credit facilities, trade receivables securitization and public debt markets, as well as the continuation of the dividend growth plan outlined in our multi-year objectives.

The market price may also be affected by TI factors, including, but not limited to:

- The market price of TI subordinate voting shares
- TI's access to banks and public markets
- Actions taken or statements made by TELUS, TI or others concerning our relationship with TI
- Factors affecting the performance of TI, that may impact TI's financial performance and subsequently our financial performance.

Our financial instruments, and the nature of the credit risks, liquidity risks and market risks to which they may be subject, are described in *Section 7.9 Financial instruments, commitments and contingent liabilities*.

Potential impact

Our business plans and growth could be negatively affected if current financing is not sufficient to cover funding requirements. External capital market conditions could potentially affect our ability to make strategic investments or meet ongoing capital funding requirements, and may prohibit the roll-over of commercial paper at low rates.

There can be no assurance that we will maintain or improve our current credit ratings. Given the cash demands of the 3500 MHz spectrum auction held in 2021 and the upcoming spectrum auctions, we may be unable to lower our net debt to EBITDA ratio to our objective range in the medium term, which could eventually have a further negative impact on our credit ratings. Our cost of capital could increase and our access to capital could be affected by a reduction in the credit ratings of TELUS and/or TELUS Communications Inc. (TCI). A reduction in our ratings from the current investment grade could result in an increase in our cost of capital.

While future free cash flows and sources of capital are expected to be sufficient to meet current requirements, our intention to return capital to shareholders could constrain our ability to invest in our operations for future growth.

Changes over the past 12 months

At December 31, 2022, our senior unsecured debt was approximately $21.6 billion (see the *Senior unsecured debt principal maturities* chart in *Section 4.3*). We operate a commercial paper program (maximum of US$1.5 billion) that currently provides access to low-cost funding. As at December 31, 2022, we had $1.5 billion of commercial paper outstanding, all of which was denominated in U.S. dollars (US$1.1 billion). When we issue commercial paper, it must be refinanced on an ongoing basis in order to realize the cost savings relative to borrowing on the $2.75 billion credit facility.

Mitigation

We may finance future capital and funding requirements with internally generated cash flows, including the possible monetization of non-core assets and cash-generating working capital initiatives, borrowings under the unutilized portion of our bank credit facilities, use of securitized trade receivables, use of commercial paper and/or the issuance of debt or equity securities. We have a shelf prospectus in effect until September 2024, under which we can offer an unlimited amount of securities qualified thereunder in Canada and up to $3.5 billion of securities qualified thereunder in the U.S. as of the date of this MD&A. We believe that our investment-grade credit ratings, coupled with our efforts to maintain constructive relationships with banks, investors and credit rating agencies, continue to provide reasonable access to capital markets.

To enable us to meet our financial objective of generally maintaining $1.0 billion of available liquidity, we have a $2.75 billion credit facility that expires on April 6, 2026 ($1.3 billion available at December 31, 2022), as well as availability under other bank credit facilities (see *Section 7.6 Credit facilities*). At December 31, 2022, we had an unsecured non-revolving $1.1 billion bank credit facility, maturing July 9, 2024, with a syndicate of financial institutions, which is to be used for general corporate purposes. In addition, our TCI subsidiary has an agreement with an arm's-length securitization trust, ending December 31, 2024, under which it is able to sell an interest in certain of its trade receivables up to a maximum of $600 million, of which $500 million was available at December 31, 2022 (see *Section 7.7 Sale of trade receivables*).

We successfully completed a number of debt transactions in 2021 and 2022 (see *Section 7.4*). As a result, the average term to maturity of our long-term debt (excluding commercial paper, TELUS bank credit facilities, the revolving components of the TELUS International credit facility, lease liabilities and other long-term debt) was 12.1 years at December 31, 2022 (compared to 12.5 years at December 31, 2021), and the average cost of our long-term debt was 4.03% (excluding commercial paper, TELUS bank credit facilities, the revolving components of the TELUS International credit facility, lease liabilities and other long-term debt). Foreign currency forward contracts are used to manage currency risk arising from the issuance of commercial paper and substantially all long-term, fixed-term debt denominated in U.S. dollars. Our commercial paper program is fully backstopped by our $2.75 billion credit facility.

At December 31, 2022, TI had a credit facility consisting of US$800 million of revolving components and US$1.2 billion of amortizing term loan components. For further details on the TI credit facility, see *Section 7.6 Credit facilities*.

We manage our financial capital structure and adjust it in light of changes in economic conditions and the risk characteristics of our business. We have financial policies in place that are reviewed annually and are intended to help maintain our existing investment-grade credit ratings. Four credit rating agencies currently have ratings that are in line with this target. Access to our $2.75 billion credit facility would be maintained, even if our ratings were reduced to below investment grade.

Funding for future spectrum licence purchases, defined benefit pension plan obligations and any increases in corporate income tax rates will reduce the after-tax cash flow otherwise available to return to our shareholders. Should actual results differ from our expectations, there can be no assurance that we will not change our financing plans, including our intention to pay dividends according to our payout policy guidelines and to maintain our multi-year dividend growth program. No shares were purchased in 2022 under the normal course issuer bid (NCIB) program. In June 2022, we received approval for an NCIB to purchase and cancel up to 10 million Common Shares (to a maximum of $250 million) from June 6, 2022, to June 5, 2023, which would allow us to purchase our Common Shares if and when we consider it advantageous, based on our financial position and outlook, and the market price of our Common Shares. For further details on our multi-year dividend growth program and NCIB program, see *Section 4.3 Liquidity and capital resources*.

Our Board reviews and approves the declaration of a dividend each quarter, and the amount of the dividend, based on a number of factors, including our financial position and outlook. This assessment is subject to various assumptions and the impact of various risks and uncertainties, including those described here in *Section 10*.

10.15 Tax matters

Risk category: Financial

We collect and pay significant amounts of indirect taxes, such as goods and services taxes, harmonized sales taxes, provincial sales taxes, sales and use taxes and value-added taxes, to various tax authorities. As our operations are complex and the related tax

interpretations, regulations, legislation and jurisprudence that pertain to our activities are subject to continual change and evolving interpretation, the final determination of the taxation of many transactions is uncertain. Moreover, the implementation of measures that are compliant with new legislation in itself has its own complexities, including those of execution where multiple systems are involved and the interpretation of new rules as they apply to specific transactions, products and services.

TELUS, along with TI, TELUS Health and TELUS Agriculture & Consumer Goods, operates in a number of foreign jurisdictions, including Armenia, Australia, Austria, Bahamas, Bosnia and Herzegovina, Brazil, Bulgaria, China, Costa Rica, Czechia, Denmark, El Salvador, Finland, France, Germany, Guatemala, India, Ireland, Japan, Latvia, Mexico, Netherlands, the Philippines, Poland, Romania, Singapore, Slovakia, Spain, Switzerland, the Republic of Korea, Turkey, the United Kingdom and the United States, which increases our exposure to multiple forms of taxation. Generally, each jurisdiction has certain peculiarities in the forms of taxation imposed (e.g. value-added tax, gross receipts tax, stamp and transfer tax, and income tax), and differences in the applicable tax base and tax rates, legislation and tax treaties, as well as currency and language differences. In addition, the telecommunications industry faces unique issues that lead to uncertainty in the application of tax laws and the division of tax between domestic and foreign jurisdictions.

Potential impact

We are subject to the risk that income and indirect tax amounts, including tax expense, may be materially different than anticipated, and that a general tendency by domestic and foreign tax collection authorities to adopt more stringent interpretations and aggressive auditing practices could adversely affect our financial condition and operating results.

We have significant current and deferred income tax assets and liabilities, income tax expenses and cash tax payments. Income tax amounts are based on our estimates, applying accounting principles that recognize the benefit of income tax positions only when it is more likely than not that the ultimate determination of the tax treatment of a position will result in the related benefit being realized. The assessment of the likelihood and amount of income tax benefits, as well as the timing of realization of such amounts, can materially affect the determination of net income or cash flows. We expect the income taxes calculated at applicable statutory rates to range between 24.7 to 25.3% in 2023 (compared to 25.6% in 2022). These expectations can change as a result of changes in interpretations, regulations, legislation or jurisprudence.

The timing of the monetization of deferred income tax amounts is uncertain, as it is dependent upon our future earnings and other events. The amounts of deferred income tax liabilities are also uncertain, as the amounts are based on substantively enacted future income tax rates that were in effect at the time of deferral, which can be changed by tax authorities. As well, the amounts of cash tax payments and current and deferred income tax liabilities are also based on our anticipated mix of revenues among the jurisdictions in which we operate, which is also subject to change.

The audit and review activities of tax authorities affect the ultimate determination of the actual amounts of indirect taxes payable or receivable, income taxes payable or receivable, deferred income tax liabilities, taxes on certain items included within capital and income tax expense. Therefore, there can be no assurance that taxes will be payable as anticipated and/or that the amount and timing of receipt or use of the tax-related assets will be as currently expected.

Changes over the past 12 months

Global and local tax policies are subject to continual change, which increases the complexity of taxation.

Canada, together with approximately 140 other countries comprising the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS), approved in principle in 2021 model Global Anti-Base Erosion Rules. These proposals introduced a form of 15% global minimum tax which is intended to be effective in 2024. Similar proposals were introduced by the European Commission in December 2021. In August 2022, the President of the United States signed into law the Inflation Reduction Act, a 15% corporate alternative minimum tax starting in 2023. If applicable, these items, together with related changes to domestic laws and tax treaties, may result in an increase to our effective tax rate in certain jurisdictions.

Mitigation

We follow a comprehensive tax strategy that has been adopted by our Board. This strategy outlines the principles underlying and guiding the roles of team members, their responsibilities and personal conduct, the method of conducting business in relation to tax

law and the approaches to working relationships with external tax authorities and external advisors. This strategy recognizes the requirement to comply with all relevant tax laws. The components necessary to manage tax risk are outlined in the strategy.

In giving effect to this strategy, we maintain an internal Taxation department composed of professionals who stay current on domestic and foreign tax obligations, supplemented where appropriate with external advisors. This team reviews systems and process changes for compliance with applicable domestic and international taxation laws and regulations. Its members are also responsible for the specialized accounting required for income taxes.

Material transactions are reviewed by our Taxation department so that transactions of an unusual or non-recurring nature are assessed from multiple risk-based perspectives. As a matter of regular practice, large transactions are reviewed by external tax advisors, while other third-party advisors may also be engaged to express their views as to the potential for tax liability. We continue to review and monitor our activities, so that we can take action to comply with any related regulatory, legal and tax obligations. In some cases, we also engage external advisors to review our systems and processes for tax-related compliance. The advice provided and tax returns prepared by such advisors and counsel are reviewed for reasonableness by our Taxation department.

10.16 The economy

Risk category: Financial

Our business operations are impacted by broad economic conditions. Unfavourable economic conditions, such as a recession, an economic slowdown, or rising rates of inflation in the markets in which we operate, could have a material adverse effect on our financial performance. It is difficult to predict the impact that these factors may have on our business operations in the future. Inflation-related impacts were evident in 2022, but the future duration and impacts of current inflationary pressures are unknown.

Risks to the Canadian economy include: fluctuations in oil prices, potential rises in interest rates and levels of consumer and mortgage debt, an acceleration in inflation, volatility in the housing market, the timing and rate of economic recovery from the effects of the COVID-19 pandemic, and uncertainty related to trade issues, including the ongoing imposition of tariffs and supply chain disruption, and the effects of climate change. In addition, as we expand our international operations through acquisitions, such as those within our TI subsidiary and our TELUS Health and TELUS Agriculture & Consumer Goods businesses, we become more exposed to global market conditions. Meanwhile, trade disputes between countries, as well as other economic and political uncertainties and developments outside of Canada, may have global implications, as supply chains have become increasingly integrated.

Our ability to successfully implement cost reduction initiatives and realize planned savings, net of restructuring and other costs, may affect business operations and customer services. Those initiatives include, but are not limited to, our operating efficiency and effectiveness program to drive improvements in financial results, business integrations, business product simplification, business process automation and outsourcing, offshoring and reorganizations, as well as procurement initiatives.

Potential impact

Economic uncertainty may cause consumers and business customers to reduce or delay discretionary spending, impacting new service purchases or volumes of use, and consider substitution by lower-priced alternatives.

Globally, some countries may require financial support, sovereign credit ratings may continue to decline, and there may be a default on the sovereign debt obligations of certain countries. Any of these economic outcomes may increase the cost of borrowing and cause our access to credit to become more limited, which could have a material adverse effect on our business, financial condition, financial performance and cash flows. Economic and political uncertainty could undermine business confidence. Unfavourable economic conditions could cause our business clients to reduce, defer or eliminate spending on our services in order to reduce their operating costs.

Fluctuations in the Canadian economy could adversely impact growth in our customer base revenue, profitability and free cash flow, and could potentially require us to record impairments in the carrying values of our assets, including, but not limited to, our intangible assets with indefinite lives (spectrum licences and goodwill). Impairments in the carrying values of our assets would result in a charge to earnings and a reduction in owners' equity, but would not affect cash flow. Continued inflationary pressures could lead to increases in input costs such as labour, which may not be offset by revenue growth and may impact margins. In addition, ongoing

international supply chain disruptions may make it difficult to source key components (such as handsets) in sufficient quantities and at reasonable prices.

Fluctuations in the global economy could affect different industry verticals in different ways. Counter-cyclical industries such as agriculture and logistics should remain largely unaffected, as food producers, distributors and retailers would continue to operate. Healthcare, particularly products and services related to logistics or vaccines, should do well, and hospitals and healthcare providers in certain countries could also perform well.

Because certain acquisitions, operating costs and revenues, including TI's revenues, are denominated in U.S. dollars or other non-Canadian dollar currencies, fluctuations in the Canadian dollar exchange rate may impact our financial and operating results.

Economic and capital market fluctuations could also adversely affect the investment performance, funding and expense associated with our defined benefit pension plans, as obligations are based on certain actuarial assumptions related to expected plan asset returns, salary escalation, life expectancy, the performance of financial markets and future interest rates.

Changes over the past 12 months

In 2022, both the Canadian economy and the global economy proved resilient despite challenges from rising inflation, higher interest rates, the war in Ukraine and lingering restrictions in China related to COVID-19. Central banks have aggressively increased interest rates in an attempt to slow inflation but the economic impacts are not yet measurable because of the time lag between interest rate increases and the effects they have on interest rate-sensitive sectors in the economy. Higher interest rates may impact the housing market and the economy more broadly as households cut back on spending in order to manage higher debt service costs. As inflationary pressures persist, the input costs of goods and labour are increasing, which may impact margins and overall profitability.

Interest rates are expected to continue rising in 2023, with several central banks around the world making specific mention of this monetary tool to combat rising inflation. If central banks raise interest rates more quickly and further than the economy can absorb, there is a risk that both the Canadian economy and the global economy could slide into a recession in 2023.

The Canadian dollar exchange rate with the U.S. dollar was volatile, with the Canadian dollar generally weakening over the year, from $1.27 at the end of 2021 to $1.35 at the end of 2022.

The solvency position of our defined benefit pension plans, in aggregate, as determined under the *Pension Benefits Standards Act, 1985*, was estimated to be a surplus of $1.6 billion at the end of 2022 (compared to a surplus of $1.2 billion at the end of 2021).

Mitigation

While economic risks cannot be completely mitigated, our top priority of putting customers first and pursuing global leadership in the likelihood of our customers recommending our products, services and people also supports our efforts to acquire and retain customers through the economic fluctuations that affect them and us. Our telecommunications services are resilient during recessionary periods, which allows us to navigate through changing market dynamics. We also continue to pursue cost reduction and efficiency initiatives across our business operations, such as labour arbitrage through our TI business. See *Section 4.3 Liquidity and capital resources* for our capital structure financial policies and plans.

Foreign currency forward contracts and currency options are leveraged to fix the exchange rates on U.S. dollar-denominated transactions, commitments, commercial paper and U.S. Dollar Notes in order to help mitigate risks related to exchange rate fluctuations, and we seek to mitigate pension risk through the application of policies and procedures for managing exposure to investment risk and through ongoing monitoring of our funding position. Our best estimate of cash contributions to our registered defined benefit pension plans in 2023 is $19 million ($32 million in 2022). Virtual power purchase agreements with renewable energy projects that develop solar and wind power facilities are being leveraged to manage our exposure to electrical power purchase price risk.

10.17 Litigation and legal matters

Risk category: Compliance

Given the size of our organization, investigations, claims and lawsuits seeking damages and other relief are regularly threatened or pending against us. The continued expansion of our product and service offerings in managed services, security, healthcare, and agriculture and supply chain technology, as well as the initial public offering of subordinate voting shares by TI in February 2021, have added to our compliance requirements and increased our exposure to the risk of litigation and the possibility of damages, sanctions and fines. We may also be the target of class actions due to our millions of customer relationships. In addition, like other public companies, we may be subject to civil liability for misrepresentations in written disclosure and oral statements, and liability for fraud and market manipulation.

The intellectual property and proprietary rights of owners and developers of hardware, software, business processes and other technologies may be protected under statute, such as patent, copyright and industrial design legislation, or under common law, such as trade secrets. Significant damages may be awarded in intellectual property infringement claims and defendants may incur significant costs to defend or settle such claims.

Potentially material certified and uncertified class actions, intellectual property litigation and other claims against us are detailed in *Note 29(a)* of the Consolidated financial statements.

With business operations in a number of jurisdictions, we are required to comply not only with Canadian laws and regulations, but also with local laws and regulations in other jurisdictions. These laws and regulations may differ substantially from Canadian laws and add to our regulatory, legal and tax exposures. We continue to extend our business operations into additional jurisdictions and expand our product and service offerings in such jurisdictions, and this may increase our exposure to regulatory, legal and tax risks, including potential significant fines and penalties (e.g. 4% of global revenues under EU data protection laws). In certain cases, laws with extraterritorial application may also impose obligations on us. See *Section 10.3 Regulatory matters*.

Potential impact

It is not currently possible to predict the outcome of such legal matters due to various factors, including: the preliminary nature of some claims; uncertain damage theories and demands; incomplete factual records; the uncertain nature of legal theories and procedures and their resolution by the courts, at both the trial and appellate levels; and the unpredictable nature of opposing parties and their demands.

We are typically required to process, and sometimes collect and/or store sensitive data, including, but not limited to, personal data regulated by data protection and privacy legislation, where applicable, including the *General Data Protection Regulation* (EU and U.K.), the *Personal Information Protection and Electronic Documents Act* and proposed Bill C-27 (Canada), and the *California Consumer Privacy Act*, *California Invasion of Privacy Act*, *Personal Data Protection Bill of 2018* and *Data Privacy Act of 2012* (U.S.). The adoption and enforcement by governments of increasingly stringent privacy legislation may increase our exposure to risks related to compliance and liability. A successful class action lawsuit or intellectual property infringement claim, by its nature, could result in a sizeable damages award that could negatively affect a defendant's financial or operating results.

There can be no assurance that our financial or operating results will not be negatively impacted by any of these factors.

Changes over the past 12 months

As our TELUS Health team and medical clinics offer services (such as virtual care and electronic prescriptions) directly to consumers and also through third-party partnerships, new risks arise from our reliance on third-party suppliers. Our medical clinics also offer both insured and uninsured medical services, creating risks in relation to regulatory and legal compliance and/or compliance with medical professional standards.

As we extend our offerings in agriculture and supply chain technology (such as animal health and management) and add to the jurisdictions in which we offer them, we also increase our exposure to the risks associated with regulatory compliance and data security and privacy.

With the growth and development of technology-based industries, the value of intellectual property and proprietary rights has increased. Trends in awards for damages, costs to defend and the likelihood of settlements, may encourage property rights holders to aggressively pursue infringement claims. Given the vast array of technologies and systems that we use to deliver products and services, and the rapid change and complexity characteristic of such technologies, the number of disputes over intellectual property and proprietary rights can reasonably be expected to increase.

In Canada, the proposed Bill C-27 *Digital Charter Implementation Act*, contains a private right of action which, if it becomes law, could increase the risk of litigation and class actions. The Province of Quebec has made amendments to the *Act Respecting the Protection of Personal Information in the Private Sector*, as noted in *Section 10.3*. Over three years, the amendments will phase in major changes and new regulatory requirements.

In April 2021, the EU Commission announced the adoption of the Corporate Sustainability Reporting Directive (CSRD), which is aligned with the commitment made under the European Green Deal. We may be subject to the EU sustainability reporting requirements in 2024.

Mitigation

We believe that we have in place reasonable policies, controls, processes and contractual arrangements, as well as insurance coverage, intended to enable compliance and reduce our exposure to any related risks. We have a designated Chief Data and Trust Officer, responsible for ensuring that we have in place appropriate processes and controls across the enterprise in order to facilitate legal compliance, and for reporting on compliance to the Audit Committee.

Our team of internal and external legal professionals advise on and manage risks related to claims and possible claims, vigorously defend class actions and other claims, pursue settlements in appropriate cases, regularly assess our business practices, and monitor legal developments that may impact risk. They seek and obtain contractual protections consistent with standard industry practices to help mitigate the risks of intellectual property infringements and work to protect our intellectual property rights through litigation and other means.

Our corporate disclosure policy restricts disclosure by team members, defines the role of Company spokesperson, provides a protocol for communicating with investment analysts, investors and others, and outlines our communications approach.

We rely on our team members, officers, Board of Directors, key suppliers and other business partners to demonstrate behaviour consistent with applicable legal and ethical standards in all jurisdictions within which we operate. We have an anti-bribery and corruption policy, a comprehensive code of ethics and conduct for our team members and Board of Directors, and mandatory annual integrity training for all team members and identified contractors.

Subject to the foregoing limitations, management is of the opinion, based upon legal assessments and the information presently available, that it is unlikely that any liability related to existing investigations, claims and lawsuits, to the extent not provided for through insurance or otherwise, would have a material effect on our financial position and the results of our operations, excepting the items disclosed herein and in *Note 29(a)* of the Consolidated financial statements.

11. Definitions and reconciliations

11.1 Non-GAAP and other specified financial measures

We have issued guidance on and report certain non-GAAP measures that are used to evaluate the performance of TELUS, as well as to determine compliance with debt covenants and to manage our capital structure. As non-GAAP measures generally do not have a standardized meaning, they may not be comparable to similar measures presented by other issuers. For certain financial metrics, there are definitional differences between TELUS and TELUS International reporting. These differences largely arise from TELUS International adopting definitions consistent with practice in its industry. Securities regulations require such measures to be clearly defined, qualified and reconciled with their nearest GAAP measure. Certain of the metrics do not have generally accepted industry definitions.

Adjusted Net income and adjusted basic earnings per share (EPS): These are non-GAAP measures that do not have any standardized meaning prescribed by IFRS-IASB and are therefore unlikely to be comparable to similar measures presented by other issuers. Adjusted Net income excludes the effects of restructuring and other costs, income tax-related adjustments, other equity (income) losses related to real estate joint ventures, long-term debt prepayment premium and other adjustments (identified in the following tables). Adjusted basic EPS is calculated as adjusted net income divided by the basic weighted-average number of Common Shares outstanding. These measures are used to evaluate performance at a consolidated level and exclude items that, in management's view, may obscure underlying trends in business performance or items of an unusual nature that do not reflect our ongoing operations. They should not be considered alternatives to Net income and basic EPS in measuring TELUS' performance.

Reconciliation of adjusted Net income

	Fourth quarters ended December 31		Years ended December 31	
($millions)	**2022**	2021	**2022**	2021
Net income attributable to Common Shares	**248**	644	**1,615**	1,655
Add (deduct) amounts net of amount attributable to non-controlling interests:				
Restructuring and other costs	**82**	43	**219**	170
Tax effect of restructuring and other costs	**(21)**	(11)	**(55)**	(41)
Income tax-related adjustments	**(1)**	3	**6**	(16)
Other equity (income) losses related to real estate joint ventures	**(3)**	1	**(3)**	3
Virtual power purchase agreements unrealized change in forward element	**38**	—	**(193)**	—
Tax effect of virtual power purchase agreements unrealized change in forward element	**(10)**	—	**51**	—
Long-term debt prepayment premium	**—**	—	**—**	10
Tax effect of long-term debt prepayment premium	**—**	—	**—**	(2)
Gain on disposition of financial solutions business	**—**	(410)	**—**	(410)
Tax effect of gain on disposition of financial solutions business	**—**	61	**—**	61
Adjusted Net income	**333**	331	**1,640**	1,430

Reconciliation of adjusted basic EPS

	Fourth quarters ended December 31		Years ended December 31	
($)	**2022**	2021	**2022**	2021
Basic EPS	**0.17**	0.47	**1.16**	1.23
Add (deduct) amounts net of amount attributable to non-controlling interests:				
Restructuring and other costs, per share	**0.05**	0.03	**0.15**	0.13
Tax effect of restructuring and other costs, per share	**(0.01)**	(0.01)	**(0.04)**	(0.03)
Income tax-related adjustments, per share	**—**	—	**—**	(0.01)
Virtual power purchase agreements unrealized change in forward element, per share	**0.03**	—	**(0.14)**	—
Tax effect of virtual power purchase agreements unrealized change in forward element, per share	**(0.01)**	—	**0.04**	—
Long-term debt prepayment premium, after income taxes, per share	**—**	—	**—**	0.01
Gain on disposition of financial solutions business, per share	**—**	(0.30)	**—**	(0.30)
Tax effect of gain on disposition of financial solutions business, per share	**—**	0.04	**—**	0.04
Adjusted basic EPS	**0.23**	0.23	**1.17**	1.07

Available liquidity: This is a non-GAAP measure that does not have any standardized meaning prescribed by IFRS-IASB and is therefore unlikely to be comparable to similar measures presented by other issuers. Available liquidity is calculated as the sum of Cash and temporary investments, net, amounts available from the revolving credit facility and amounts available under our trade receivables securitization program measured at the end of the period. We believe this to be a useful measure because it allows us to monitor compliance with our financial objectives. It should not be considered as an alternative to Cash and temporary investments, net in measuring TELUS' performance.

Available liquidity reconciliation

As at December 31 ($millions)	2022	2021
Cash and temporary investments, net	**974**	723
Net amounts available from the TELUS Corporation revolving credit facility	**1,292**	850
Amounts available under trade receivables securitization program	**500**	500
Available liquidity[1]	**2,766**	2,073

1 Excludes available liquidity from the unsecured non-revolving $1.1 billion bank credit facility.

Capital expenditure intensity: This measure is calculated as capital expenditures (excluding spectrum licences) divided by Operating revenues and other income. It provides a basis for comparing the level of capital expenditures to those of other companies of varying size within the same industry.

Calculation of Capital expenditure intensity

	TTech		DLCX		Eliminations		Total	
Years ended December 31 ($millions, except ratio)	2022	2021	2022	2021	2022	2021	2022	2021
Capital expenditures	**3,337**	3,372	**135**	126	**—**	—	**3,472**	3,498
Denominator – Operating revenues and other income	**15,752**	14,966	**3,214**	2,754	**(554)**	(462)	**18,412**	17,258
Capital expenditure intensity (%)	**21**	23	**4**	5	**n/m**	n/m	**19**	20

TELUS Corporation Common Share (Common Share) dividend payout ratio: This is a historical measure calculated as the sum of the most recent four quarterly dividends declared, as recorded in the financial statements, net of dividend reinvestment plan effects, divided by the sum of free cash flow amounts for the most recent four quarters for interim reporting periods. For fiscal years, the denominator is annual free cash flow. Our objective range for the annual TELUS Corporation Common Share dividend payout ratio is on a prospective basis, rather than on a trailing basis. (See *Section 4.3 Liquidity and capital resources* and *Section 7.5 Liquidity and capital resource measures.*)

Calculation of ratio of Common Share dividends declared to cash provided by operating activities less capital expenditures (excluding spectrum licences)

Determined using most comparable IFRS-IASB measures

For the 12-month periods ended December 31 ($ millions, except ratio)	2022	2021
Numerator – Sum of the last four quarterly dividends declared	**1,899**	1,711
Cash provided by operating activities	**4,811**	4,388
Less:		
Capital expenditures (excluding spectrum licences)	**(3,472)**	(3,498)
Denominator – Cash provided by operating activities less capital expenditures (excluding spectrum licences)	**1,339**	890
Ratio (%)	**142**	192

Calculation of Common Share dividend payout ratio, net of dividend reinvestment plan effects

Determined using management measures

For the 12-month periods ended December 31 ($ millions, except ratio)	**2022**	2021
Sum of the last four quarterly dividends declared	**1,899**	1,711
Sum of the amount of the last four quarterly dividends declared reinvested in Common Shares	**(687)**	(624)
Numerator – Sum of the last four quarterly dividends declared, net of dividend reinvestment plan effects	**1,212**	1,087
Denominator – Free cash flow[1]	**1,274**	777
Ratio (%)	**95**	140

1 Reflects the impacts of our accelerated capital program announced on March 25, 2021.

Earnings coverage: This measure is defined in the Canadian Securities Administrators' National Instrument 41-101 and related instruments, and is calculated as follows:

Calculation of Earnings coverage

For the 12-month periods ended December 31 ($ millions, except ratio)	**2022**	2021
Net income attributable to Common Shares	**1,615**	1,655
Income taxes (attributable to Common Shares)	**566**	544
Borrowing costs (attributable to Common Shares)[1]	**845**	749
Numerator	**3,026**	2,948
Denominator – Borrowing costs	**845**	749
Ratio (times)	**3.6**	3.9

1 Interest on Long-term debt plus Interest on short-term borrowings and other plus long-term debt prepayment premium, adding capitalized interest and deducting borrowing costs attributable to non-controlling interests.

EBITDA (earnings before interest, income taxes, depreciation and amortization): We have issued guidance on and report EBITDA because it is a key measure used to evaluate performance at a consolidated level. EBITDA is commonly reported and widely used by investors and lending institutions as an indicator of a company's operating performance and ability to incur and service debt, and as a valuation metric. EBITDA should not be considered as an alternative to Net income in measuring TELUS' performance, nor should it be used as a measure of cash flow. EBITDA as calculated by TELUS is equivalent to Operating revenues and other income less the total of Goods and services purchased expense and Employee benefits expense.

We calculate EBITDA – excluding restructuring and other costs, as it is a component of the **EBITDA – excluding restructuring and other costs interest coverage** ratio and the **Net debt to EBITDA – excluding restructuring and other costs** ratio.

We also calculate **Adjusted EBITDA** to exclude items of an unusual nature that do not reflect our ongoing operations and should not, in our opinion, be considered in a long-term valuation metric or should not be included in an assessment of our ability to service or incur debt.

EBIT (earnings before interest and income taxes) is calculated for our reportable segments because we believe it is a meaningful indicator of our operating performance, as it represents our earnings from operations before costs of capital structure and income taxes.

EBITDA and Adjusted EBITDA reconciliations

	TTech		DLCX		Total	
Fourth quarters ended December 31 ($ millions)	**2022**	2021	**2022**	2021	**2022**	2021
Net income					**265**	663
Financing costs					**322**	192
Income taxes					**82**	197
EBIT	**586**	973	**83**	79	**669**	1,052
Depreciation	**541**	508	**48**	37	**589**	545
Amortization of intangible assets	**296**	240	**44**	45	**340**	285
EBITDA	**1,423**	1,721	**175**	161	**1,598**	1,882
Add restructuring and other costs included in EBITDA	**59**	36	**35**	8	**94**	44
EBITDA – excluding restructuring and other costs	**1,482**	1,757	**210**	169	**1,692**	1,926
Other equity (income) losses related to real estate joint ventures	**(3)**	1	**—**	—	**(3)**	1
Gain on disposition of financial solutions business	**—**	(410)	**—**	—	**—**	(410)
Adjusted EBITDA	**1,479**	1,348	**210**	169	**1,689**	1,517

EBITDA and Adjusted EBITDA reconciliations

	TTech		DLCX		Total	
Years ended December 31 ($ millions)	**2022**	2021	**2022**	2021	**2022**	2021
Net income					**1,718**	1,698
Financing costs					**632**	796
Income taxes					**604**	580
EBIT	**2,582**	2,841	**372**	233	**2,954**	3,074
Depreciation	**2,064**	1,982	**162**	144	**2,226**	2,126
Amortization of intangible assets	**1,051**	912	**175**	178	**1,226**	1,090
EBITDA	**5,697**	5,735	**709**	555	**6,406**	6,290
Add restructuring and other costs included in EBITDA	**180**	148	**60**	38	**240**	186
EBITDA – excluding restructuring and other costs	**5,877**	5,883	**769**	593	**6,646**	6,476
Other equity (income) losses related to real estate joint ventures	**(3)**	3	**—**	—	**(3)**	3
Gain on disposition of financial solutions business	**—**	(410)	**—**	—	**—**	(410)
Adjusted EBITDA	**5,874**	5,476	**769**	593	**6,643**	6,069

Adjusted EBITDA less capital expenditures is calculated for our reportable segments, as it represents a simple cash flow view that may be more comparable to other issuers.

Adjusted EBITDA less capital expenditures reconciliation

	TTech		DLCX		Total	
Fourth quarters ended December 31 ($ millions)	**2022**	2021	**2022**	2021	**2022**	2021
Adjusted EBITDA	**1,479**	1,348	**210**	169	**1,689**	1,517
Capital expenditures	**(627)**	(866)	**(33)**	(43)	**(660)**	(909)
Adjusted EBITDA less capital expenditures	**852**	482	**177**	126	**1,029**	608

Adjusted EBITDA less capital expenditures reconciliation

	TTech		DLCX		Total	
Years ended December 31 ($ millions)	**2022**	2021	**2022**	2021	**2022**	2021
Adjusted EBITDA	**5,874**	5,476	**769**	593	**6,643**	6,069
Capital expenditures	**(3,337)**	(3,372)	**(135)**	(126)	**(3,472)**	(3,498)
Adjusted EBITDA less capital expenditures	**2,537**	2,104	**634**	467	**3,171**	2,571

We calculate **EBITDA margin** and **Adjusted EBITDA margin** to evaluate the performance of our operating segments and we believe these measures are also used by investors as indicators of a company's operating performance. We calculate EBITDA margin as EBITDA divided by Operating revenues and other income. Adjusted EBITDA margin is a non-GAAP ratio that does not have any standardized meaning prescribed by IFRS-IASB and is therefore unlikely to be comparable to similar measures presented by other issuers. We calculate Adjusted EBITDA margin as Adjusted EBITDA divided by adjusted Operating revenues and other income.

Calculation of EBITDA margin

Fourth quarters ended December 31	TTech		DLCX		Eliminations		Total	
($ millions, except margin)	**2022**	2021	**2022**	2021	**2022**	2021	**2022**	2021
Numerator – EBITDA	**1,423**	1,721	**175**	161	**—**	—	**1,598**	1,882
Denominator – Operating revenues and other income	**4,368**	4,237	**855**	757	**(165)**	(122)	**5,058**	4,872
EBITDA margin (%)	**32.6**	40.6	**20.4**	21.4	**n/m**	n/m	**31.6**	38.6

Calculation of EBITDA margin

Years ended December 31 ($ millions, except margin)	TTech		DLCX		Eliminations		Total	
	2022	2021	**2022**	2021	**2022**	2021	**2022**	2021
Numerator – EBITDA	**5,697**	5,735	**709**	555	**—**	—	**6,406**	6,290
Denominator – Operating revenues and other income	**15,752**	14,966	**3,214**	2,754	**(554)**	(462)	**18,412**	17,258
EBITDA margin (%)	**36.2**	38.3	**22.1**	20.2	**n/m**	n/m	**34.8**	36.4

Calculation of Adjusted EBITDA margin

Fourth quarters ended December 31	TTech		DLCX		Eliminations		Total	
($ millions, except margin)	**2022**	2021	**2022**	2021	**2022**	2021	**2022**	2021
Numerator – Adjusted EBITDA	**1,479**	1,348	**210**	169	**—**	—	**1,689**	1,517
Adjusted Operating revenues and other income:								
Operating revenues and other income	**4,368**	4,237	**855**	757	**(165)**	(122)	**5,058**	4,872
Other equity (income) losses related to real estate joint ventures	**(3)**	1	**—**	—	**—**	—	**(3)**	1
Gain on disposition of financial solutions business	**—**	(410)	**—**	—	**—**	—	**—**	(410)
Denominator – Adjusted Operating revenues and other income	**4,365**	3,828	**855**	757	**(165)**	(122)	**5,055**	4,463
Adjusted EBITDA margin (%)	**33.9**	35.2	**24.5**	22.5	**n/m**	n/m	**33.4**	34.0

Calculation of Adjusted EBITDA margin

Years ended December 31 ($ millions, except margin)	TTech		DLCX		Eliminations		Total	
	2022	2021	**2022**	2021	**2022**	2021	**2022**	2021
Numerator – Adjusted EBITDA	**5,874**	5,476	**769**	593	**—**	—	**6,643**	6,069
Adjusted Operating revenues and other income:								
Operating revenues and other income	**15,752**	14,966	**3,214**	2,754	**(554)**	(462)	**18,412**	17,258
Other equity (income) losses related to real estate joint ventures	**(3)**	3	**—**	—	**—**	—	**(3)**	3
Gain on disposition of financial solutions business	**—**	(410)	**—**	—	**—**	—	**—**	(410)
Denominator – Adjusted Operating revenues and other income	**15,749**	14,599	**3,214**	2,754	**(554)**	(462)	**18,409**	16,851
Adjusted EBITDA margin (%)	**37.3**	37.6	**23.9**	21.6	**n/m**	n/m	**36.1**	36.0

EBITDA – excluding restructuring and other costs interest coverage: This measure is defined as EBITDA – excluding restructuring and other costs, divided by Net interest cost, calculated on a 12-month trailing basis. It is similar to the coverage ratio covenant in our credit facilities, as described in *Section 7.6 Credit facilities*.

Calculation of EBITDA - excluding restructuring and other costs interest coverage

For the 12-month periods ended December 31 ($millions, except ratio)	**2022**	2021
Numerator – EBITDA – excluding restructuring and other costs	**6,646**	6,476
Denominator – Net interest cost	**847**	773
Ratio (times)	**7.8**	8.4

Free cash flow: We report this measure as a supplementary indicator of our operating performance, and there is no generally accepted industry definition of free cash flow. It should not be considered as an alternative to the measures in the Consolidated statements of cash flows. Free cash flow excludes certain working capital changes (such as trade receivables and trade payables), proceeds from divested assets and other sources and uses of cash, as found in the Consolidated statements of cash flows. It provides an indication of how much cash generated by operations is available after capital expenditures (excluding purchases of spectrum licences) that may be used to, among other things, pay dividends, repay debt, purchase shares or make other investments. We exclude impacts of accounting standards that do not impact cash, such as IFRS 15 and IFRS 16. Free cash flow may be supplemented from time to time by proceeds from divested assets or financing activities.

Free cash flow calculation

	Fourth quarters ended December 31		Years ended December 31	
($ millions)	**2022**	2021	**2022**	2021
EBITDA	**1,598**	1,882	**6,406**	6,290
Deduct gain on disposition of financial solutions business	**—**	(410)	**—**	(410)
Restructuring and other costs, net of disbursements	**82**	3	**69**	10
Effects of contract asset, acquisition and fulfilment (IFRS 15 impact) and TELUS Easy Payment device financing	**(185)**	(117)	**(95)**	(45)
Effects of lease principal (IFRS 16 impact)	**(129)**	(131)	**(495)**	(502)
Items from the statements of cash flows:				
Share-based compensation, net	**24**	16	**122**	139
Net employee defined benefit plans expense	**25**	27	**101**	113
Employer contributions to employee defined benefit plans	**(10)**	(15)	**(44)**	(53)
Interest paid	**(238)**	(180)	**(816)**	(744)
Interest received	**6**	2	**17**	17
Capital expenditures (excluding spectrum licences)[1]	**(660)**	(909)	**(3,472)**	(3,498)
Free cash flow before income taxes	**513**	168	**1,793**	1,317
Income taxes paid, net of refunds	**(190)**	(186)	**(519)**	(601)
Effect of disposition of financial solutions business on income taxes paid	**—**	61	**—**	61
Free cash flow	**323**	43	**1,274**	777

1 Refer to *Note 31* of the Consolidated financial statements for further information.

The following reconciles our definition of free cash flow with Cash provided by operating activities.

Free cash flow reconciliation with Cash provided by operating activities

($ millions)	Fourth quarters ended December 31		Years ended December 31	
	2022	2021	**2022**	2021
Free cash flow	**323**	43	**1,274**	777
Add (deduct):				
Capital expenditures (excluding spectrum licences)	**660**	909	**3,472**	3,498
Effects of lease principal and leases accounted for as finance leases prior to adoption of IFRS 16	**129**	131	**495**	502
Gain on disposition of financial solutions business, net of effect on income taxes paid	**—**	(349)	**—**	(349)
Individually immaterial items included in Net income neither providing nor using cash	**14**	162	**(430)**	(40)
Cash provided by operating activities	**1,126**	896	**4,811**	4,388

Mobile phone average revenue per subscriber per month (ARPU) is calculated as network revenue derived from monthly service plan, roaming and usage charges; divided by the average number of mobile phone subscribers on the network during the period, and is expressed as a rate per month.

Net debt: We believe that net debt is a useful measure because it represents the amount of Short-term borrowings and long-term debt obligations that are not covered by available Cash and temporary investments. The nearest IFRS measure to net debt is Long-term debt, including Current maturities of Long-term debt. Net debt is a component of the **Net debt to EBITDA – excluding restructuring and other costs** ratio.

Net debt to EBITDA – excluding restructuring and other costs: This measure is defined as net debt at the end of the period divided by 12-month trailing EBITDA – excluding restructuring and other costs. (See discussion in *Section 7.5 Liquidity and capital resource measures*.) This measure is similar to the leverage ratio covenant in our credit facilities, as described in *Section 7.6 Credit facilities*.

Calculation of Net debt to EBITDA – excluding restructuring and other costs

For the 12-month periods ended December 31 ($millions, except ratio)	**2022**	2021
Numerator – Net debt	**24,152**	20,535
Denominator – EBITDA – excluding restructuring and other costs	**6,646**	6,476
Ratio (times)	**3.63**	3.17

Net interest cost: This measure is the denominator in the calculation of **EBITDA – excluding restructuring and other costs interest coverage**. Net interest cost is defined as financing costs, excluding capitalized long-term debt interest, employee defined benefit plans net interest, virtual power purchase agreements unrealized change in forward element, and recoveries on redemption and repayment of debt, calculated on a 12-month trailing basis. Expenses recorded for the long-term debt prepayment premium, if any, are included in net interest cost.

Calculation of Net interest cost

For the 12-month periods ended December 31 ($millions)	**2022**	2021
Financing costs	**632**	796
Deduct: Employee defined benefit plans net interest	**(8)**	(26)
Add interest on long-term debt, excluding lease liabilities – capitalized	**30**	3
Add virtual power purchase agreements unrealized change in forward element	**193**	—
Net interest cost	**847**	773

11.2 Operating indicators

The following measures are industry metrics that are useful in assessing the operating performance of a mobile and fixed telecommunications entity, but do not have a standardized meaning under IFRS-IASB.

Churn is calculated as the number of subscribers deactivated during a given period divided by the average number of subscribers on the network during the period, and is expressed as a rate per month. Mobile phone churn refers to the aggregate average of both prepaid and postpaid mobile phone churn. A TELUS, Koodo or Public Mobile brand prepaid mobile phone subscriber is deactivated when the subscriber has no usage for 90 days following expiry of the prepaid credits.

Connected device subscriber means a subscriber on an active TELUS service plan with a recurring revenue-generating portable unit (e.g. tablets, internet keys, Internet of Things, wearables and connected cars) that is supported by TELUS and is intended for limited or no cellular voice capability.

Mobile phone subscriber means a subscriber on an active TELUS service plan with a recurring revenue-generating portable unit (e.g. feature phones and smartphones) where TELUS provides voice, text and/or data connectivity.

Internet subscriber means a subscriber on an active TELUS internet plan with a recurring revenue-generating unit where TELUS provides internet connectivity.

Residential voice subscriber means a subscriber on an active TELUS phone plan with a recurring revenue-generating unit where TELUS provides voice service.

Security subscriber means a subscriber on an active TELUS security plan with a recurring revenue-generating unit that is connected to the TELUS security and automation platform.

TV subscriber means a subscriber on an active TELUS TV plan with a recurring revenue-generating subscription for video services from a TELUS TV platform.

Healthcare lives covered means the number of users (primary members and their dependents) enrolled in various health programs supported by TELUS Health services (e.g. virtual care, health benefits management, preventative care, personal health security, and employee and family assistance programs). It is probable that some members and their dependents will be a user of multiple TELUS Health services.

Virtual care member means primary enrolment to receive services on an active TELUS Health virtual care plan.

Digital health transactions mean the total number of health claims, dental claims, consultations or other paid transactions facilitated by TELUS Health services.

Exhibit 99.5

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in Registration Statement No. 333-266633 on Form F-10, Registration Statement No. 333-258770 on Form F-3D and Registration Statement Nos. 333-125486, 333-181463 and 333-268186 on Form S-8 and to the use of our reports dated February 9, 2023 relating to the financial statements of TELUS Corporation (the "Company") and the effectiveness of the Company's internal control over financial reporting appearing in this Annual Report on Form 40-F for the year ended December 31, 2022.

/s/ Deloitte LLP
Chartered Professional Accountants
Vancouver, Canada
February 9, 2023