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C.D. Howe Institute Telecommunications Policy Working Group

Communiqué #1: Telecom Sector Investments Key to Future Prosperity

- Action by governments is urgently needed to ensure that public policy and the regulatory framework encourage deployment of the next generation of telecommunications infrastructure for Canada to remain competitive in an increasingly digitally mediated global economy.
- Government policy should support sustainable competition that will ensure that Canadians and Canadian businesses have choice with respect to their telecommunication services in all regions of the country.
- Infrastructure investment by Canadian telecommunications providers outpaces that of their peers internationally. Return on capital is in line with global peers when adjusting for capital intensity.
- Facilities-based providers build the essential infrastructure necessary to deliver telecommunications services. Regulatory certainty, jurisdictional disentanglement and predictable policy is essential for long-term investments and sustainable competition in such a capital-intensive sector.

Canadian telecommunications policy is at a critical crossroads. Policy decisions about the structure and stance of regulation for telecommunications providers will in turn shape commercial decisions about investments in next-generation facilities and capabilities. Government support for the build-out of telecommunications infrastructure will impact the pace at which communities are digitally connected and their ability to participate in an increasingly digital economy.



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To this end, The C.D. Howe Institute has established the Telecommunications Policy Working Group to identify and distill policy directions on the strategic questions facing Canadian telecommunications – particularly concerning:

- Vigorous competition for competitive pricing and high-quality telecommunications services,
- Investment in next generation infrastructure, and
- Inclusive access to telecommunications services and participation in the digital economy.

This first communiqué provides an overview of the policy challenges and questions presently facing the telecommunications sector in Canada and the need to invest in telecommunications infrastructure to enable the gains possible from greater broadband penetration.

Broadly, the Working Group believes governments must focus on regulatory clarity, timeliness, and stability to ensure greater investments in critically needed infrastructure.

The Digital Imperative for the Canadian Economy

Governments nationwide recognize the digital imperative for Canada. The experiences of Canadians with remote work and digital access to services during the COVID-19 pandemic have underscored how essential robust and leading-edge infrastructure are for dependable digital connectivity.

Globally, commerce and innovation depend on the collaboration, information access and tie-in of new technologies to real-time connection and processing. As other advanced economies accelerate the retooling and retraining needed for the digital economy, Canadians' access to next-generation digital infrastructure will determine whether new digitally dependent technologies are developed and deployed domestically.

The degree of penetration of digital technologies will also shape Canadian productivity growth and international competitiveness across services and goods-producing sectors – including Canada's bedrock resource industries and emerging technologies. For example, commercializing innovations in precision agriculture, automated hauling at mine sites, telemedicine, autonomous vehicles, and open banking all depend on a foundation of high-speed connectivity. If Canada faces sluggish rollout of next-generation broadband and wireless infrastructure, consumers and businesses will lack access to the world-leading digital technologies and Canada risks stumbling in the race with other economies.

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Recent reports have also emphasized the contribution of telecommunications infrastructure as an enabling “backbone” for the broader economy. For example, Accenture estimates incremental new telecommunications connections from 2018 to 2019 directly boosted Canada’s output by over \$50 billion – or roughly 2 percent of GDP. Moreover, Accenture estimates a 1 to 1.5 percent boost to a region’s output from a 10 percent increase in broadband penetration.¹ Looking ahead, the Boston Consulting Group highlights that digital infrastructure will be critical to “unlock” Canadian innovation in the “Internet of Things,” big data and advanced robotics, among other applications.²

Governments are alert to the role that digital connectivity plays in social inclusion, access to government services and democratic participation. In particular, the federal government’s most recent throne speech emphasized the importance of access to the internet and the aim of universal broadband availability.³

Nonetheless, a number of factors cloud the path forward. Federal government directives concerning affordability of wireless, the ongoing proceedings concerning rates for mandated access to wholesale broadband, pending decisions around mobile virtual network operators (MVNOs), and the potential revamp of the Canadian Radio-television and Telecommunications Commission (CRTC) – all create confusion and uncertainty about Canada’s long-term direction for telecommunications. In addition, there are multiple potentially overlapping jurisdictions and subsidy programs adding more red-tape and creating even more uncertainty among industry participants.

Thus, at the time when investment in digital infrastructure will be most critical, Canada’s telecommunications facilities and services providers and potential investors in the Canadian telecommunications sector face an uncertain regulatory framework that operates too slowly in a fast-

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- 1 Accenture. 2020. “Investing in Canada’s Digital Infrastructure: The Economic Impact of Wireless/Wireline Broadband and the Post-COVID Recovery.” December. Canadian Wireless Telecommunications Association. Available online: https://www.cwta.ca/wp-content/uploads/2020/12/EN_Investing_in_Canadas_Digital_Infrastructure.pdf
 - 2 Boston Consulting Group Centre for Canada’s Future. 2019. *In the Balance: Future-proofing Canada’s digital infrastructure to unlock benefits for all*, at p.8. December. Available online: https://media-publications.bcg.com/flash/dotbcg_other/CCF%20Digital%20Infrastructure-%20In%20the%20Balance.pdf
 - 3 Privy Council Office. 2020. *Speech from the Throne to open the Second Session of the Forty-Third Parliament of Canada: A stronger and more resilient Canada*. September 23. Available online: <https://www.canada.ca/en/privy-council/campaigns/speech-throne/2020/stronger-resilient-canada.html>

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paced industry, with challenges of cost and availability for spectrum, and a patchwork of often opaque incentive programs for funding rural and remote facilities.

In particular, certain telecommunications providers believe the federal government's current balance between consumer pricing, service quality, infrastructure requirements and competition in the sector has undermined fair pricing and is not properly balanced with ongoing incentives to invest. Without certainty around the regulatory framework and renewed government support for investment, facilities-based providers (ie., that own or operate transmission facilities) will hesitate to make the long-term investments in next-generation facilities and may struggle to access capital for these outlays. This uncertainty also impacts the development of services and products that ride on these critical infrastructure layers affecting the downstream innovation layer.

Balancing Incentives for Telecommunications Investment

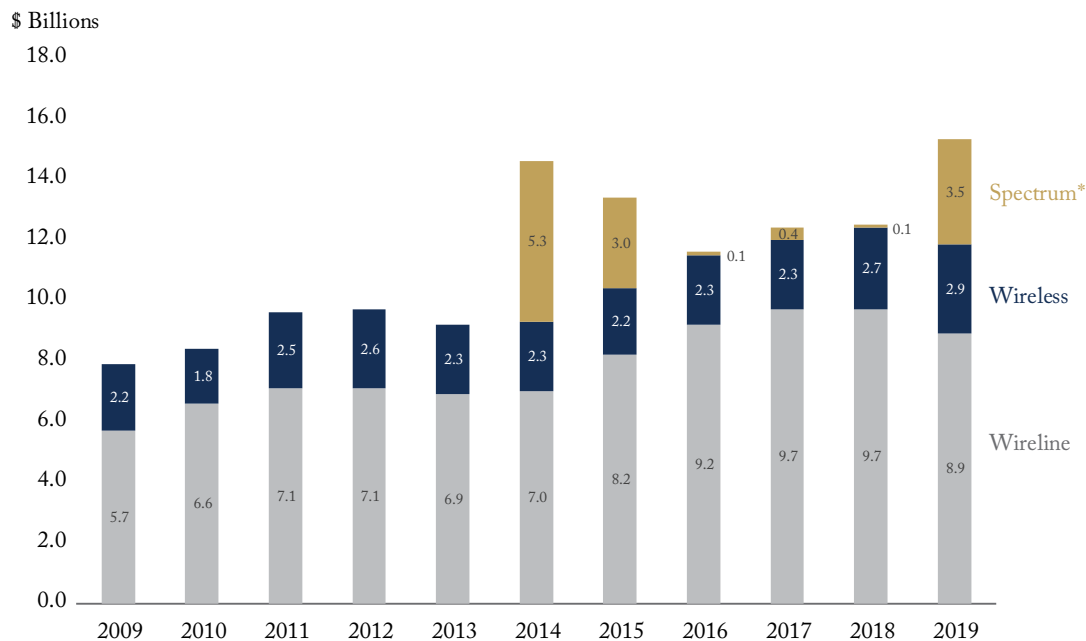
Facilities-based providers make significant capital expenditures in telecommunications infrastructure in Canada. From CRTC data (see Figure 1) annual capital expenditures on wireline infrastructure by Canadian telecommunications providers have increased from \$7 billion in 2014 to \$8.9 billion in 2019, representing a compound annual growth rate of 5 percent. Capital expenditures on wireless have increased from \$2.3 billion in 2014 to \$2.9 billion in 2019, also representing a compound annual growth rate of 5 percent. Spectrum investments amounted to substantial outlays in particular years, including \$3.5 billion in 2019 and totalling \$12.4 billion over the 2014-to-2019 period.

Additionally, CRTC data on capital expenditures for wireline providers show that investments in plant and equipment to deliver wireline services is overwhelmingly financed by incumbents (who existed prior to the introduction of [competition](#)) and other facilities-based providers (see Figure 2). Resellers make comparably negligible aggregate investments in telecommunications infrastructure: for example, resellers invested \$50 million in capital expenditures in 2018, compared with \$5.7 billion spent by incumbents and \$3.9 billion spent by facilities-based providers.

Infrastructure investment by Canadian telecommunications providers also outpaces that of their peers internationally. Analysis by Boston Consulting Group's Centre for Canada's Future found that, over the 2005-to-2015 period, Canadian telecommunications infrastructure investment was US\$255 per capita

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Figure 1: Annual Telecommunications Expenditures by Type of Service



Note: * Data on spectrum costs not published for years prior to 2014.

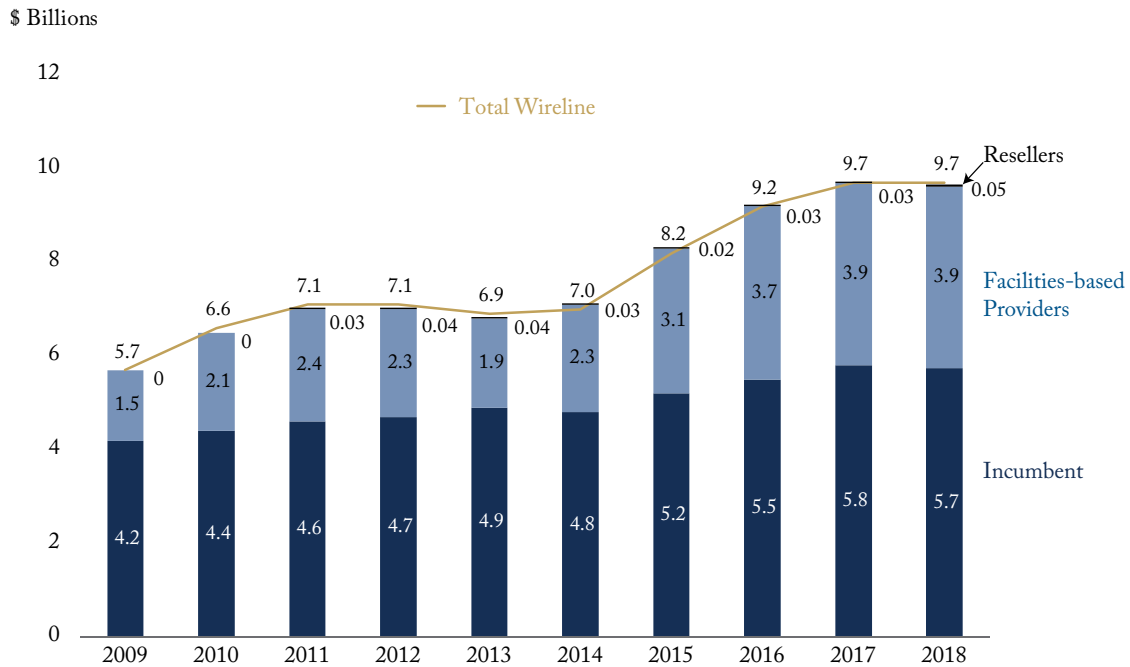
Source: CRTC Communications Monitoring Reports.

compared to an average of US\$156 across the OECD, with Canadian per capita investment exceeding all other members of the G7.4 BCG also observes that, while Canadian telecommunications providers achieve higher earned margins relative to revenue, return on capital is in line with global peers when adjusting for their greater capital intensity. Specifically, while Canadian providers generated higher EBITDA/revenue than those in other OECD countries over 2016-18, their return on capital invested (ROCE) was equivalent with their peers (see Figure 3).

4 Boston Consulting Group Centre for Canada's Future. Op.Cit. Available online: https://media-publications.bcg.com/flash/dotbcg_other/CCF%20Digital%20Infrastructure-%20In%20the%20Balance.pdf

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Figure 2: Annual Wireline Capital Expenditures by Type of Provider



Source: CRTC Communications Monitoring Reports.

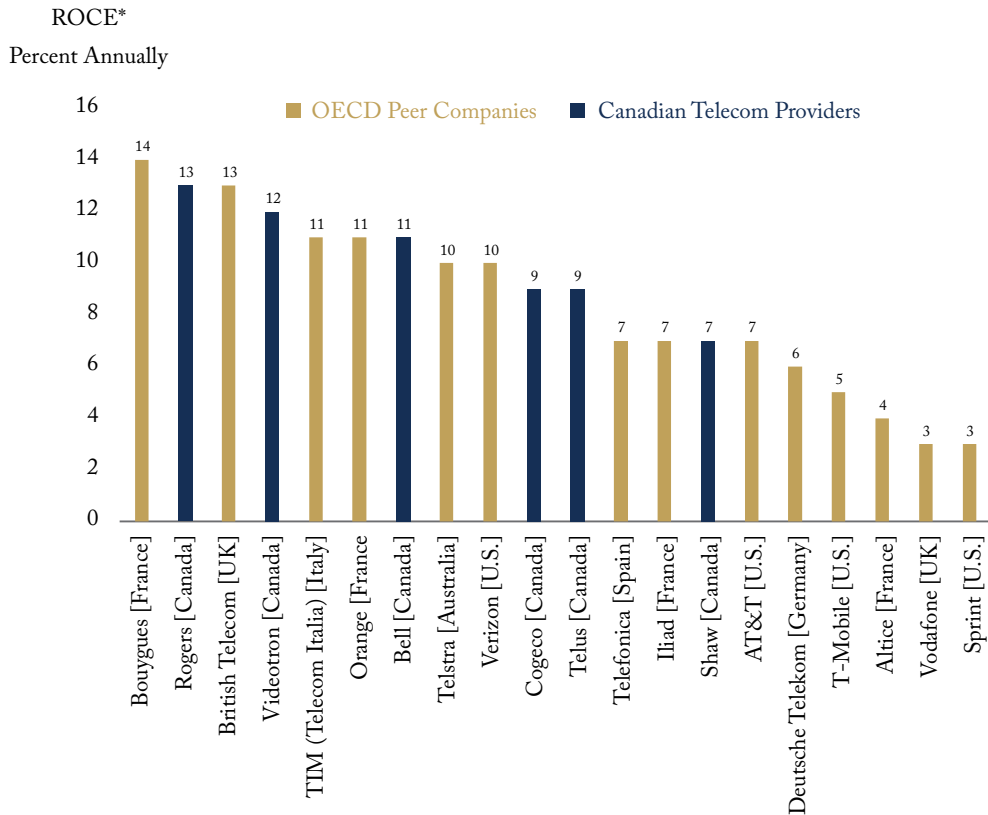
Similarly, analysis by the consultancy PwC indicates that capital expenditures as a share of revenue by Canadian telecommunications providers are 5.3 percent higher than comparison countries.⁵ PwC attributes these larger relative capital outlays to higher cost factors of production and notes that such elevated production costs therefore require higher EBITDA levels in Canada than in other countries to maintain investment levels while sustaining healthy free cash flows.

BCG's analysis of international experience with mandated access similarly suggests that the combination of mandated access to wireline facilities at the rates prescribed in the Broadband Decision and mandated access for MVNOs could reduce capital intensity by 25 percent across both wireline and

⁵ PricewaterhouseCoopers LLP. 2020. *The Importance of a health telecommunications industry to Canada's high tech success*. July. Available online: <https://www.pwc.com/ca/en/industries/telecommunications.html>

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Figure 3: Average Return on Capital Employed (ROCE) for Fiscal Years 2016-2018



Note: * Return on capital employed (ROCE) has been calculated as Net Operating Profit After Tax (NOPAT) divided by capital employed.

Source: BCG Centre for Canada's Future "In the Balance" (December 2019) based on Capital IQ; OECD; United Nations; BCG analysis.

wireless facilities-based providers. Such a scenario would translate to an "investment gap" in wireline and wireless capital expenditures (reflecting the reduction in investment relative to the projected baseline investment by incumbents) of \$2.0 billion in 2021, rising to \$2.5 billion in 2025.⁶ BCG concluded that such a significant investment gap would hamper 5G deployment nationwide.

⁶ BCG Centre for Canada's Future, note 23 at p.20.

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Analysis by PwC also concluded that an MVNO mandate would induce telecommunications providers to significantly reduce capital and operating expenditures with the result of large reductions in effective 5G coverage by 2030. Specifically, relative to a baseline of 95 percent effective coverage with 5G for the Canadian population by 2030, PwC estimates that an MVNO mandate would dampen the rollout of 5G coverage, resulting in only 75 percent effective coverage of the Canadian population by 2030.⁷

A similar conclusion was reached in an analysis by TD Securities, which projected that total investments in wireline/cable infrastructure could decline by roughly \$1.68 billion annually after 2021.⁸ Specifically, TD Securities estimated a 22 percent reduction in wireline investment as a result of the estimated anticipated loss of \$2.3 billion in high gross margin broadband revenue. Such revenue loss would also cause management to mitigate cash flow impacts by imposing much higher hurdle rates on new capital investment (i.e., a company's required internal rate of return for undertaking an investment). TD Securities concluded that the diminished investment would likely impair rural network extension and reduce capital spending on broadband capacity and quality in urban areas. TD Securities estimates that the rates in the federal broadband decision as so low relative to the true costs of building and maintaining next generation networks that even some incumbent wireline providers may start leasing from other facilities-based providers in their home territories rather than proceed with currently planned initiatives for upgrading networks.

Key Takeaway: The Need for Telecom Sector Investment

The current cross-roads for Canada's telecommunications sector and the economic imperative for expedient deployment of next generation digital infrastructure requires decisive government action to resolve pressing policy challenges. In particular, the federal government must provide facilities-based providers with a clear and predictable regulatory framework that coherently balances vigorous price competition with incentives for ongoing investment to improve network and service quality.

7 PricewaterhouseCoopers LLP. 2020. *Understanding the likely impact of MVNOs in Canada (Part 2: Impact on Canada's transition to 5G)*. July. Available online: <https://www.pwc.com/ca/en/industries/telecommunications.html>

8 Valentini, Vince, Bentley Cross, and Towaki Dojima, "We See Good Odds of the CRTC Decision Being Revised/Overtuned." TD Securities (4 September 2019). Available online: [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/CRTC-2019-288-Attachment-1.pdf/\\$file/CRTC-2019-288-Attachment-1.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/CRTC-2019-288-Attachment-1.pdf/$file/CRTC-2019-288-Attachment-1.pdf)

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Upcoming from the C.D. Howe Institute Telecommunications Working Group

Future communiqués from this Working Group will address specific policy recommendations regarding rate-setting for mandated access and for MVNOs, the framework and timeliness for allocating spectrum, and how to streamline federal and provincial programs and clarify jurisdiction.

Working Group Mandate:

The C.D. Howe Institute has established the Telecommunications Policy Working Group to identify and distill policy directions on the strategic questions facing Canadian telecommunications – particularly concerning:

- Promotion of vigorous competition for pricing and quality for telecommunications services,
- Investment in next generation infrastructure, and
- Inclusive access to telecommunications services and participation in the digital economy.

Objectives and Format:

This Working Group will:

- Meet monthly to distill perspective for government and identify priority policy challenges,
- Issue communiqués synthesizing discussions, identifying policy options and differing perspectives, (to be drafted in coordination with co-chairs and published after feedback from members),
- Identify pressing policy questions for research by Institute,
- Contribute to Institute initiatives on issues identified by the group (e.g., podcasts, webinars).

Members of the Telecommunications Policy Working Group:

- **Lee Bragg**, Executive Vice Chair, Eastlink.
- **Lucy Casacia**, Vice-President Smart Solutions, WSP.
- **Robert Ghiz**, President & CEO, Canadian Wireless Telecommunications Association.
- **Lawson Hunter**, Senior Counsel, Stikeman Elliott LLP.
- **Elisa Kearney**, Partner, Davies Ward Phillips & Vineberg LLP.
- **Marie-Helene Labrie**, Senior Vice-President, Public Affairs, Cogeco.

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- **Daniel Levitan**, Vice President of Stakeholder Relations, Hydro One.
- **Robert Malcolmson**, Chief Regulatory Officer, BCE – Bell.
- **Viet Nguyen**, Head of Government & Industry Relations, Ericsson.
- **Chima Nkemdirim**, Vice-President, Government Relations, Shaw Communications.
- **Steve Orsini**, Co-chair and Adjunct Professor, Public Policy & Administration, Carleton University and former Ontario Secretary of Cabinet.
- **Wayne Purboo**, Senior Vice-President, New Relic, Inc.
- **Stephen Schmidt**, Vice-President, Telecom Policy & Chief Regulatory Legal Counsel, Telus.
- **Terence Smith**, Partner, Boston Consulting Group.
- **Susan Stanford**, Assistant Deputy Minister, Connectivity and Distributed Growth, Government of British Columbia.
- **Konrad von Finckenstein**, Senior Fellow at the C.D. Howe Institute.
- **Scott Wallsten**, President, Technology Policy Institute.
- **Len Waverman**, Co-chair and Dean of DeGroote School of Business at McMaster University.
- **Ted Woodhead**, Senior Vice-President, Regulatory Affairs, Rogers Communications.