



Southwestern Integrated Fibre Technology Inc.

Pre-Budget Consultations in Advance of the 2019 Budget

Submitted by:

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STATEMENT OF INTENT & IMPACT

As part of its 2019 Budget, the Government of Canada has included legislation to create expanded funding for regional/rural broadband infrastructure. **This legislation will have the strongest impact in terms of generating economic growth and improving Canada’s competitiveness if it prioritizes stable, long-term funding for broadband infrastructure to connect non-urban users who fall below the national broadband standard.** Increased broadband connectivity will help rural, remote and First Nations communities become more competitive in the global marketplace and facilitate their economic growth. Previous funding programs have taken a short-term, “pop-up” or stop-gap approach, which has historically benefitted the profit-margin of “the big three” telecommunication providers.

Future investments in broadband infrastructure should take a long-term approach, with policies that incentivize partnerships to generate high-value economic and social benefit. This brief presents our recommendations for prioritizing the local needs of citizens and businesses through increased funding in 2019 and stable, long-term funding for broadband infrastructure beyond the 2019 budget.

SWIFT would welcome the opportunity to expand on this presentation by appearing as a witness before the Committee. Thank you for your consideration of this request.

RECOMMENDATIONS

Recommendation 1: That the government of Canada commit to stable, long-term funding for broadband infrastructure in the 2019 budget and beyond.

Recommendation 2: That the government of Canada implement a policy review in relation to the CRTC funding model.

Why is new and stable funding needed for rural and regional broadband?

Recent research indicates that rural communities and regional economies are still struggling to achieve the level of Internet connectivity required to generate benefits at the household level and for businesses to compete globally while remaining locally based. **Failure to appropriately invest in modern broadband infrastructure, both immediately and through stable, long-term funding, and failure to adequately regulate those investments, puts rural communities at risk of falling behind in the digital economy.** The consequences of inadequate investment and ineffective regulatory policies are significant; without modern digital infrastructure, people and resources will continue to leave rural and small communities, contributing to the overburdening of urban centres already struggling to accommodate growing populations. Further, strong broadband infrastructure policy and investments will support Canada's mid-size cities in becoming critical regional hubs for their immediate regions and the national economy.

Since 1993, the Government of Canada and provinces/territories have pursued policies that have committed billions of dollars to closing rural/remote broadband gaps – and yet, significant infrastructure and service gaps continue to challenge rural and remote communities. This indicates a mis-match between the intentions of these investments and their long-term impact and efficacy. In Ontario alone, approximately \$500 million has been invested in the past decade to improve internet access at rural residential and farm premises. Most recently, under the 2017-18 “Connect to Innovate” program, the federal government committed \$500 million over 5 years to expand broadband internet services in rural and remote communities. Recently, the federal government announced a further \$750 million in funding to be delivered over five years (to 2022). **All of this funding was or will be delivered in short-term, non-scalable program initiatives that have often served to further entrench telecommunications monopolies and have, so far, failed to address long-term broadband infrastructure needs.**

Funding broadband infrastructure through a ‘program approach’ produces significant challenges to the long-term economic viability and competitiveness of communities of every size – but particularly rural communities. Building scalable infrastructure requires a policy mechanism that ensures investment addresses not only present needs, but future needs. This challenge is most evident, for example, when trying to harmonize investments in 5G with building fiber and higher capacity last-mile wireless. Stable investments are most likely to create long-term assets that can be shared among multiple operators, such as open access transport facilities, fibre access networks and towers for mobile, fixed wireless and 5G environments. Regional networks, such as SWIFT, could address this challenge by using stable funding to strategically leverage capital from other partners, including TSPs, private sector stakeholders (e.g. large firms), and other public dollars available within municipalities and First Nations.

Why do we need to review the CRTC policy model to ensure broadband investments create maximum benefits for Canadians?

The Government of Canada must ensure broadband infrastructure investments support *responsible innovation* that encourages communities and service providers to work together to

come up with innovative and cost-effective local solutions that deploy scalable next generation networks. The current regulatory system does little to ensure equitable deployment of new infrastructure and has produced significant inequality in service availability, poor market competition, and default monopolies in many rural and remote communities that are serviced by a single TSP. For example, Bell announced in 2017 that it was investing \$854 million – nearly double the Connect to Innovate budget – to improve already ultra-fast connectivity in Montreal alone. The overall impact of this environment means that private TSPs are choosing the broadband winners and losers in a world where Internet connectivity is considered a basic human right.

New funding policies must require TSPs achieve contractual performance metrics and Quality of Service standards that ensure actual speeds (not advertised speeds) are delivered or exceeded at the premise. Next generation networks must prioritize metrics for latency and capacity to ensure the use of the most-advanced electronics possible, while ensuring TSPs are responsive to immediate repair and restoral standards. Further detail on this approach was presented by SWIFT to the CRTC 2017-112 Telecom Notice of Consultation in June 2017.

Equally concerning and challenging to ensuring broadband infrastructure investments are appropriately valued and evaluated is limited long-term comprehensive data to support accurate assessment of return on investment of earlier broadband programs. Lack of data deters new public investment and partnerships. Each successive “pop up” program spends inordinate amounts of time and resources collecting feasibility study data, only to have no funds to sustain the baseline data needed to assess return on public investment. In April 2018, the Report of the Standing Committee on Industry, Science and Technology (42nd Parliament, 1st Session) made improved performance metrics and data a key recommendation. SWIFT’s partnership with the University of Guelph’s Regional and Rural Broadband (R2B2) Project represents an innovative approach to addressing the data analytics and mapping challenge by engaging a public institution in the long-term data stewardship effort. This partnership means that residents, decision makers, researchers and funders will have access to critical data about both the immediate- and long-term social and economic impacts of investing in broadband infrastructure.

Building the future: Lessons we’ve learned at SWIFT...

SWIFT aims to create net high-value gains from improved connectivity due to regionally-specific internet use patterns and social trends. Specifically, in the SWIFT area, the following benefits have been recently reported through SWIFT’s users’ surveys analysis (2016-to date) and multiple datasets, including data shared by telecommunications providers:

- A. The telecommuting surplus in SW Ontario is substantial. **Private net benefit is \$8,820 to \$23,964 per annum per telecommuter for two to five days of telecommuting.** In brief, this means, on average, telecommuting three days a week provides a telecommuter with a surplus of \$14,560 per year. Telecommuter surplus will increase, in the short to intermediate term, as SWIFT builds out the network and operations of fibre-enabled connectivity across the region.
- B. **In 2016, 37% of surveyed crop farmers in SW Ontario had connectivity below 5/1.5 Mbps** (below the 2016 national target, which has now been increased to 50/10 Mbps). The majority of farmers who adopted at least one precision agriculture technology lacked

adequate connectivity to use the full functionality of cloud-based precision agriculture technologies.

- C. Key agricultural and agri-food businesses require **fibre-to-the-farm** to support capital investments and increasing labour productivity from blockchain, autonomous farm vehicles and robotics (e.g. dairy, poultry). Broadband infrastructure investments are critical to supporting the recommendations set out in the Barton Report, which advocated for Canada to become a world leader in agriculture and agri-food innovation.
- D. Based on approximately 52,000 CIRA speed tests run in SW Ontario in 2017, broadband infrastructure quality benchmarking indicates that **average effective bandwidth available to access content and applications from the open internet remains below 10 Mbps**. Users in leading communities experience speeds three to five times faster than lagging clusters of (rural) communities in SW Ontario.
- E. **Connectivity varies substantially across SW Ontario** due to access type (fibre/cable modem, fixed wireless and mobile technologies), bandwidth and latency. Mid-size cities in the region have access to VDSL, cable modem, and fibre-optic connections, whereas most surrounding rural areas access the internet through fixed wireless and mobile technologies. Comparative analysis of mid-size cities, including **London, Sarnia, and Orillia indicates significant results in broadband pricing and quality of service**. Sarnia has significantly higher costs for lower speeds. London and Orillia compare more favourably in price, but not in speeds, with London experiencing much higher speeds. Mid-sized cities realize economic benefits from lower internet prices and substantially faster speeds relative to the rural areas of the region which lack competition among providers. **Sarnia and Orillia are predicted to benefit substantially from network aggregation, as offered by the SWIFT initiative, and therefore, funding programs focused only on small communities, in isolation of the wider region, is not strategic, in terms of economic outcomes and social benefits**.
- F. In SW Ontario benefits from SWIFT will be realized by users who can access fibre on an unlimited plan reducing monthly costs of going over a data plan. SWIFT baseline data indicates that from January to April 2018, **58% of residential/farm internet users have a limited data plan and more than half of these users regularly exceed their monthly data limit**. On average, this is an extra cost of \$126 per month.
- G. 5G and FTTP do not necessarily represent substitutable technologies for improving connectivity in rural communities and closing the urban-rural digital divide. **Range and quality limitations of high throughput 5G relative to FTTP are apparent. Links between fibre infrastructure and 5G funding programs are lacking**.
- H. Access to optical fibre at MUSH sector premises in the SWIFT area has steadily increased in recent years. **Approximately 60% of more than 1200 MUSH premises are fibre-connected. Social housing and community-recreation centres lag significantly in connectivity indicating need to address social equity**.
- I. According to data from CRTC (2016), the average minimum price for broadband in rural Canada is about \$52 per month. Monthly prices in rural Ontario range from \$30–\$93, compared to \$53 in urban Ontario. **SWIFT average monthly recurring residential costs (excluding one-time connection costs) is \$86/month**.

SWIFT releases regular updates on its baseline data analysis, and datasets of user and provider data are cross-referenced, and compared to other supplementary data sources (e.g. CIRA data). Citations for the information provide above are available upon request.

ABOUT SWIFT

SouthWestern Integrated Fibre Technology (SWIFT) is an initiative by the Western Ontario Warden's Caucus (WOWC) and other communities in Southwestern Ontario and Niagara Region to promote the development of ultra-high capacity fibre-optic connectivity. SWIFT represents more than 350 communities, covering 3.5 million Ontarians (or 10% of Canada's population) within 45,000 km²). By leveraging a collaborative funding model, with investments from the federal and provincial governments, as well as First Nations and municipal members and members from the broader public sector, SWIFT is working to ensure everyone across the region has equitable access to ultra-high speed fibre-optic connectivity by 2040, regardless of the size of their community, their geographic location, their age, education, or where they work. SWIFT is also designed to address gaps in mobile coverage and capacity by subsidizing the fibre optic connectivity to mobile towers necessary to enable LTE/5G. SWIFT funding will also subsidize fibre to the cabinet, fibre to the node, and fibre to the tower to enable shorter-term broadband upgrades necessary to enable VDSL, Docsis 3.1 and higher bandwidth fixed wireless connectivity.

About R2B2

R2B2 (Regional and Rural Broadband) is a research project, based at the University of Guelph. R2B2 represents a new approach to partnership between a regional network (SWIFT) and a public institution (University of Guelph) to ensure that broadband planning and impact assessment develops and applies state-of-the-art economic and geo-spatial analytics while ensuring long-term data stewardship. R2B2 accomplishes two elusive aspects of evidence-based decision making in broadband: 1) managing and analyzing proprietary and relevant public data; 2) establishing robust baseline to endline datasets that ground-truth diverse internet quality of service and support in-depth outcome analysis.