

QIMIRLUK*

An Open Gateway Solution for Northern Broadband



EXECUTIVE BRIEF

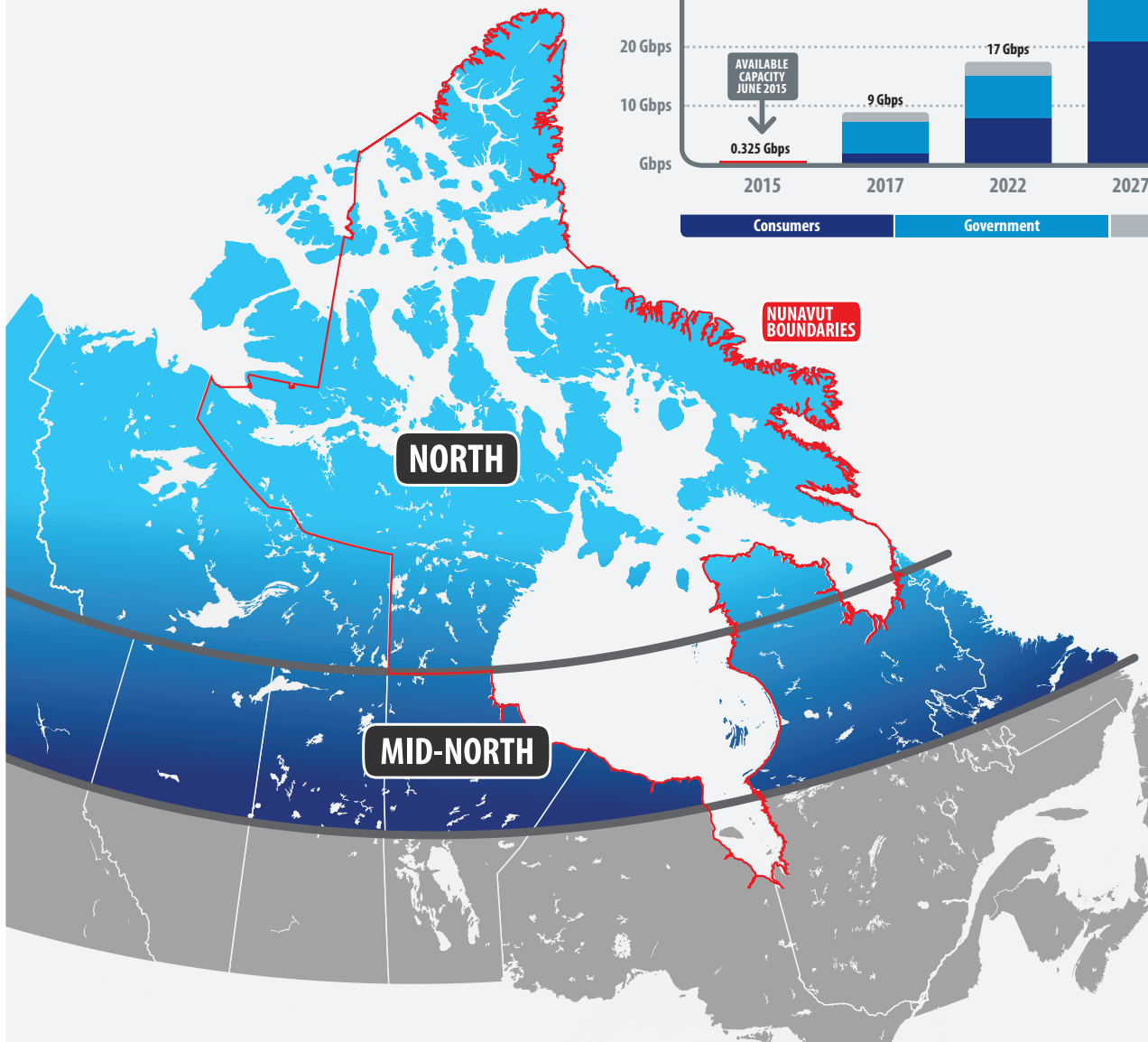
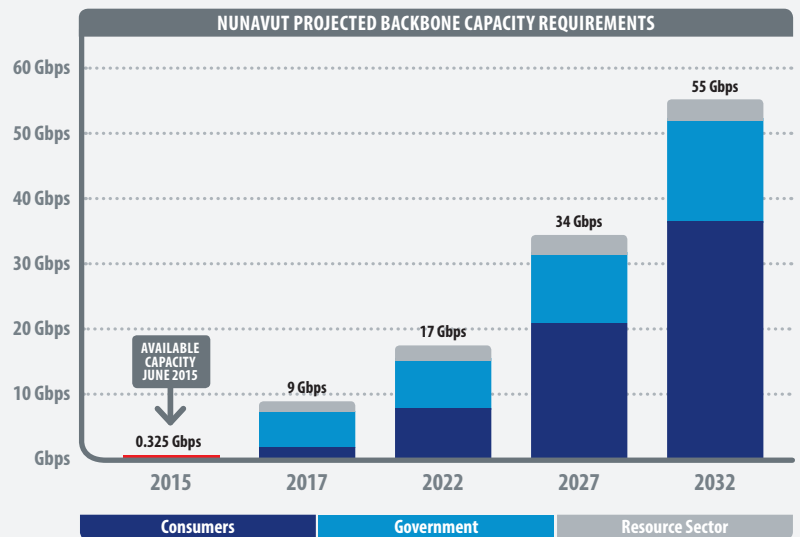
The Challenge: Digital Infrastructure Deficit in Canada's North

- Canada's North lacks critical digital infrastructure; satellite-served communities are at a particular disadvantage
- Impacts of the connectivity deficit include:
 - o Essential government services - education, health, justice, environment, public security – are severely constrained
 - o Residents and small business are isolated, struggling to be part of the digital economy
 - o Key industries cannot advance without proper communications infrastructure
 - o Economic and social development is impeded by high-cost, capacity shortfalls and lack of competitive choice
- Government broadband programs and contracts for communications services are short-term and uncoordinated; a holistic, longer term approach will greatly improve service and reduce costs for consumers, business and government
- Significant and long-term investments by Government and private sector are needed for better backbone capacity and shared gateway facilities (the digital equivalent of highways and on-ramps)
- This is the Qimirluk solution

*Qimirluk is the Inuktitut word for "backbone"

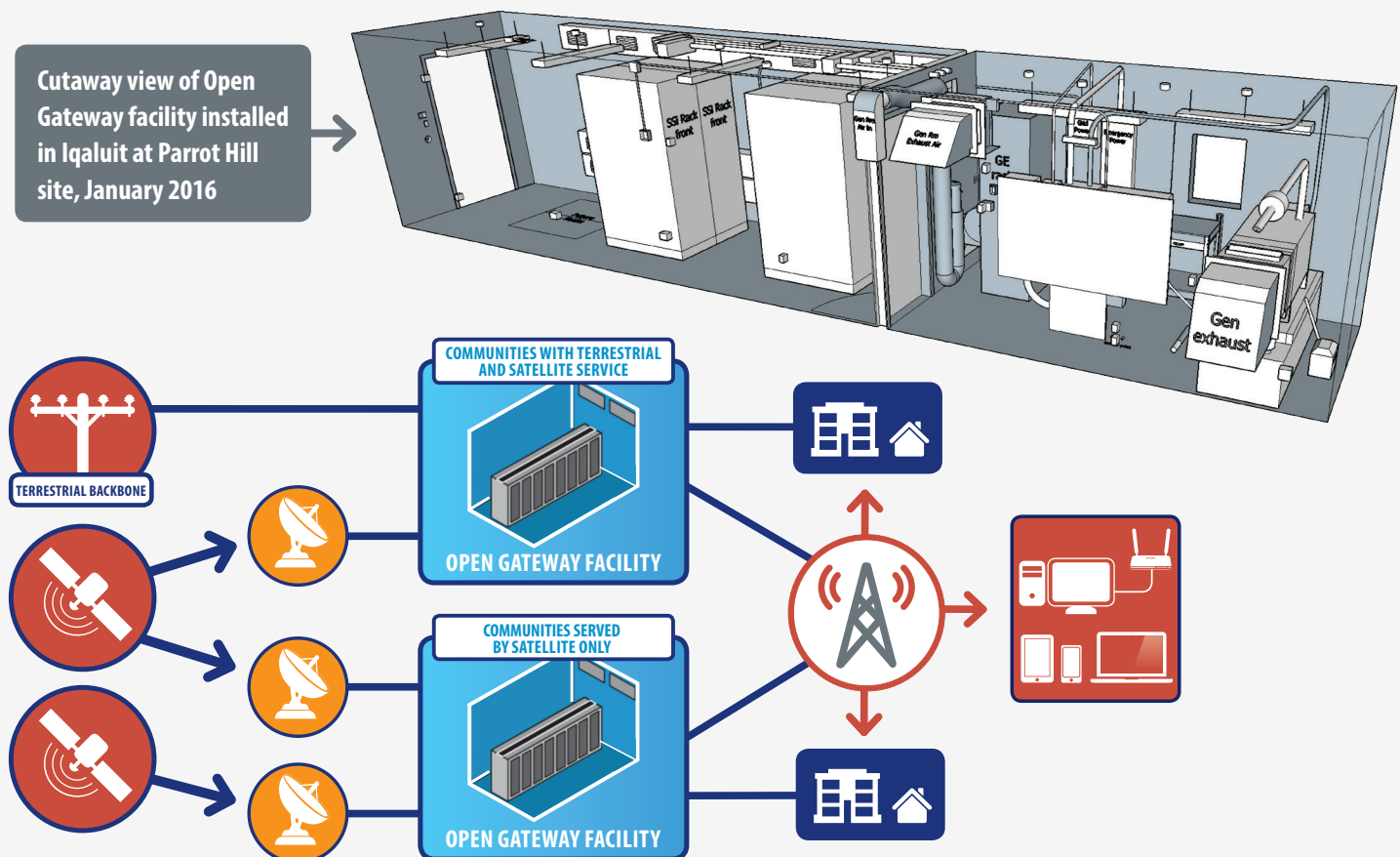
An Underserved Market: Canada's North and Mid-North

- There are over 150 communities and 450 reserves in Canada's North and Mid-North
- Significant activity of government, resource sector, military and emergency services
- The CRTC has identified 89 satellite-dependent communities and another 109 "disconnected" communities and reserves
- Growth in demand for broadband capacity cannot be met, further exacerbating the digital divide with the south



Solution: Long-term Investments in an Open Backbone and Gateways

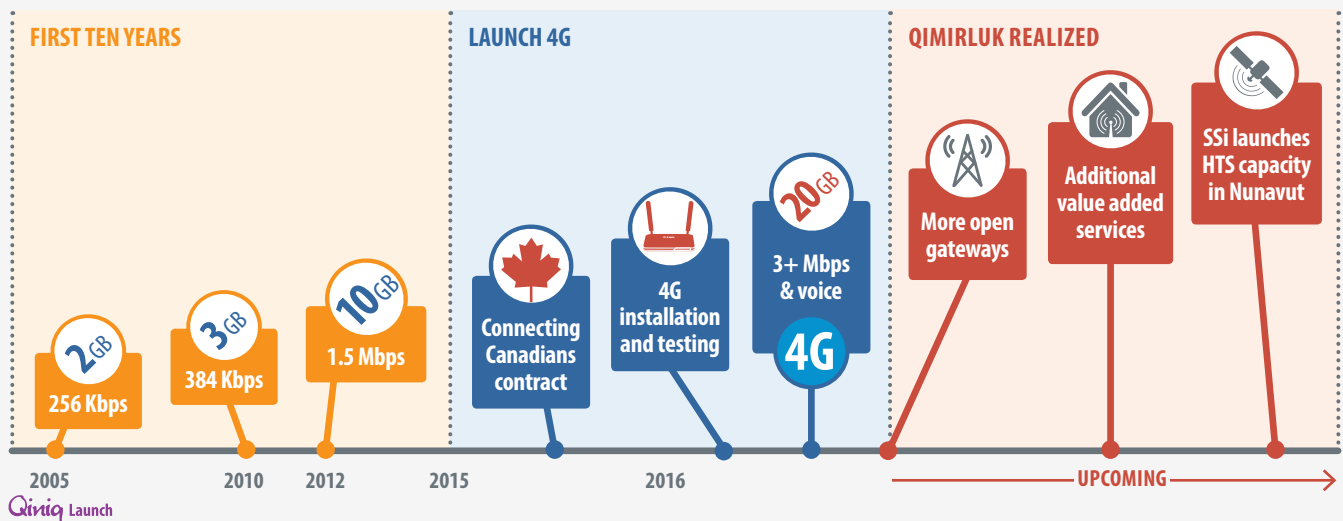
- “Open Gateway Providers” should be developed to deliver shared backbone capacity and open gateway facilities in the North
- The Open Gateway Provider will co-invest with Government to build and operate:
 - o A shared backbone delivered via high throughput satellite (HTS) first, and fibre in the future
 - o Open Gateway facilities to provide equipment collocation space with access to the backbone and a shared tower in each community
 - o Backbone and gateway services made available on a utility basis to all service providers, reducing costs and supporting local competition
 - o Training programs, delivered in partnership with territorial agencies, to develop essential local service and support jobs
- The Open Gateway provider will coordinate among all stakeholders to ensure long-term capacity needs are met
- Over the next 5 years the capacity demands in the North can be met with a single high throughput satellite (HTS). For redundancy, and to meet the growing demand in satellite served communities, a second HTS will need to be deployed. These investments will provide 15 years and more of service
- Over time, as fibre transport becomes available in some communities, the HTS capacity can be re-distributed to the remainder of the network while still providing critical redundancy in the event of a fibre break



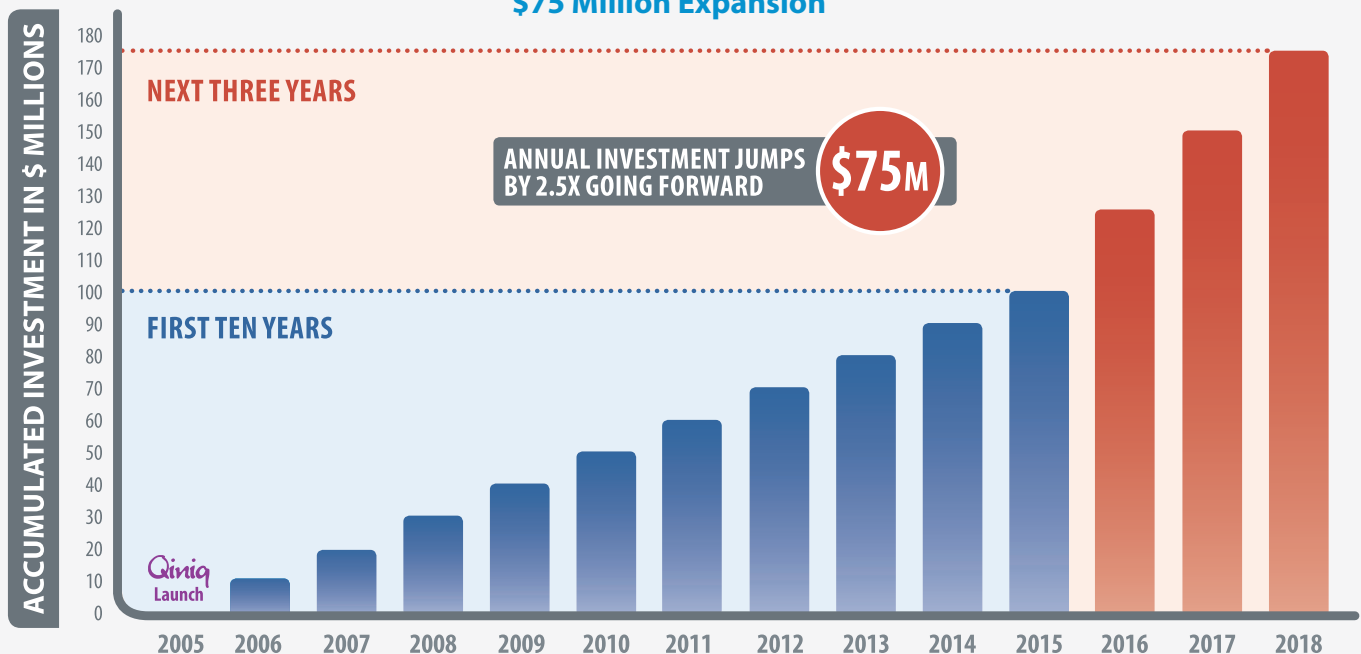
SSi: A Leader in Remote Area Connectivity

- A family company with a 50-year history in the North
- More than 20 years of expertise in remote area connectivity
- Investing in Northern broadband since 2005 – currently in midst of a \$75 million expansion of the Nunavut network
- State of the art LTE/4G mobile network deployed in all 25 Nunavut communities, allowing quality broadband, voice, content and global roaming services
- As an Open Gateway Provider, SSi will focus first on Nunavut where SSi already has significant infrastructure in place, and then expand into underserved communities in the Mid-North

Evolution of QINIQ Network



\$75 Million Expansion





Benefits: Bridging the Digital Divide

- Human resources developed in partnership with the communities, ensuring skills training and jobs for local residents and long-term project sustainability
- Local competition resulting in greater service innovation and choice
- Redundant backbone access via satellite and/or fibre to ensure secure connectivity in Canada's most remote communities in the event of an outage on one system or the other
- Transformative change in the delivery of Education, enabling every classroom to access educators and experts in the south via hi-definition video-conferencing programs like Connected North
- Much needed Health Care support in all communities by improving the access to doctors and medical specialists in the south via hi-definition video-conferencing in every hospital and community health centre
- Enhanced communications for coast guard, military and rescue services to strengthen Arctic sovereignty
- Affordable LTE broadband, mobile and voice to consumers, businesses and government, with service quality comparable to the south
- Ability to support the massive data demand for private sector growth

Conclusion: **A Made-in-the-North Solution Available NOW**

- The Open Gateway solution will overcome the Northern connectivity deficit for the long-term
- All communities of the North and Mid-North can be addressed within a few years
- By leveraging available infrastructure and SSI's expertise, network improvements and new facilities can be deployed quickly and cost effectively
- This is also an exportable solution, able to benefit other underserved areas
- Canada can be a global showcase, where broadband overcomes the barriers of distance, and all regions of the country – no matter how remote – benefit from and participate fully in the digital economy
- SSI is ready to invest and engage partners NOW

Contact: solutions@ssimicro.com

