SSI MICRO LTD.

Presentation to the Canadian Radio-television and Telecommunications Commission

THE QIMIRLUK PROPOSAL

An Open Gateway to Deliver the Promise of Broadband

Telecom Notice of Consultation CRTC 2015-134
Review of basic telecommunications services

Public Hearing, Gatineau, Quebec
April 12, 2016

Remote Connectivity

Local Service

SPEAKER: **JEFF PHILLIP**

1. Good morning. My name is Jeff Philipp and I am the Founder and CEO of SSi Micro Ltd. Joining me on the panel today are, to my right, Dean Proctor, SSi's Chief Development Officer, and Johanne Lemay, Co-President of Lemay-Yates Associates. To my left is Chris Fraser, also a Development Officer at SSi.

2. In addition, SSi team members in Yellowknife, Kanata, Nova Scotia, B.C. and even Nunavut are watching the proceedings thanks to broadband Internet.

3. To begin, I would like to thank the Commission for the efforts over the last several years. There has been a tremendous amount of work done to improve

communication services delivered to Canadians – and in particular the North, where SSi started. So thank you.

4. I am hopeful that the current undertaking will provide the feedback required for further, positive policy reform.

5. SSi is a Northern company. Our headquarters are in Yellowknife, Northwest Territories.

6. We specialize in remote-area connectivity, providing broadband and other communications services across Canada's North. We built the QINIQ network a decade ago and today we are still the only provider to all 25 communities of Nunavut.
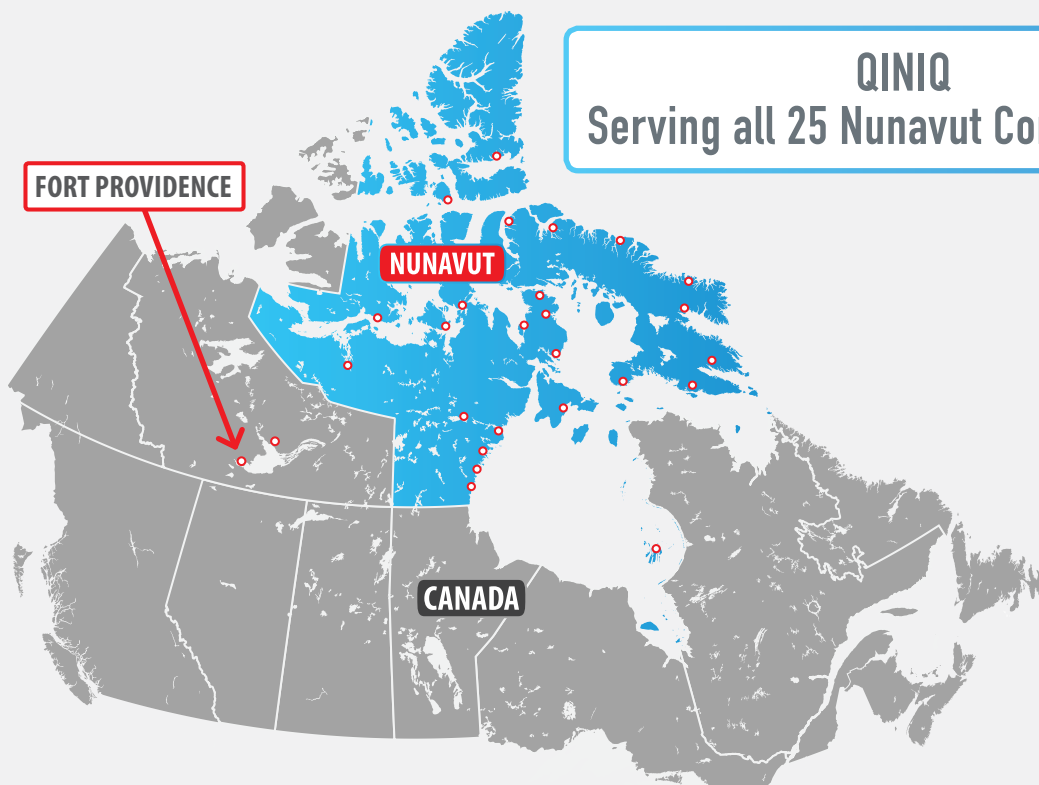
7. We have seen, know, and live daily the positive impact that information technology has. It should therefore come as no surprise that our position in this proceeding is that broadband is a must-have service and that improving the basic service objective **is a critical national issue.**

8. Consistent with our presentations in past proceedings, we come before you today with three key messages:

i. One, from a practical level, the essential nature of broadband must be recognized. I think we all agree on this point.

ii. Two, from a policy level, broadband must become the core component of the basic service objective.

iii. Three, from an implementation level, the Commission must recognize that a "one size fits all" policy will not work;
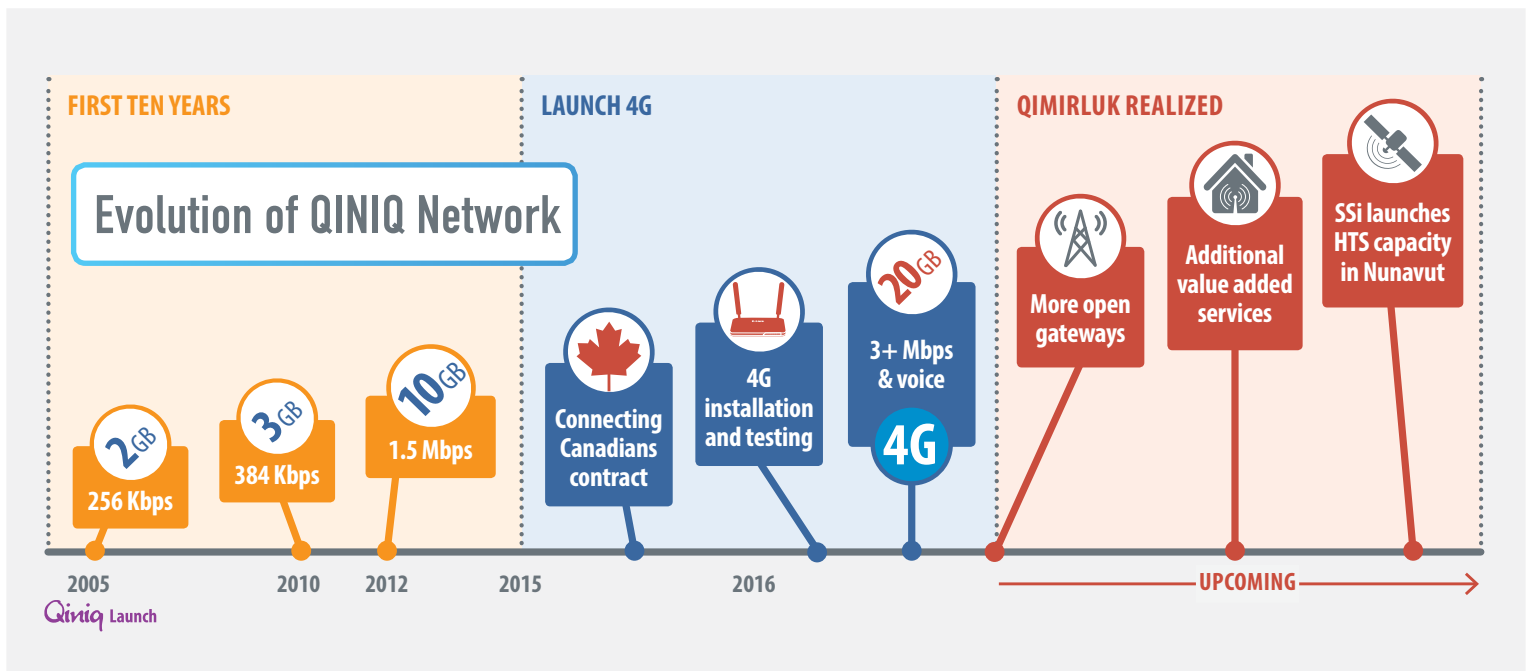
SSI AND THE NORTH

9. Before I go further, let me tell you a bit more about SSI and why communications in the North is personally so important.

10. My parents founded the Snowshoe Inn 50 years ago in Fort Providence, a town of approximately 800 people in the Northwest Territories. Twenty-five years ago, my wife Stefanie (who is also our CFO) and I started SSi Micro.

11. Our mission is to ensure that all Northern communities have access to affordable, high quality Internet access. To achieve this grand vision we have had to invest heavily in facilities and infrastructure.

FORT PROVIDENCE

NUNAVUT

CANADA

QINIQ
Serving all 25 Nunavut Communities

Evolution of QINIQ Network

FIRST TEN YEARS | LAUNCH 4G | QIMIRLUK REALIZED

- 2 GB / 256 Kbps
- 3 GB / 384 Kbps
- 10 GB / 1.5 Mbps
- Connecting Canadians contract
- 4G installation and testing
- 20 GB / 3+ Mbps & voice / 4G
- More open gateways
- Additional value added services
- SSi launches HTS capacity in Nunavut

2005   2010   2012   2015   2016   UPCOMING

Qiniq Launch

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12. To put this in perspective, in 2005 SSi was the first company to launch broadband service in Nunavut. It did not exist prior to our arrival.

13. To this day, we are still the only provider in the majority of the communities. And we are the only company to offer the same broadband packages, at the same price, in every market - no matter how small.

14. In 2011, the Commission determined that: "Canadians who reside in the North should be able to enjoy the full benefits of competition. [T]he Commission […] decided to introduce local competition in Northwestel's territory to provide a choice of service providers and different service options."

15. That decision enabled SSI to move forward with additional investment, delivering on the goal to provide more choice and innovation to Northern consumers. It has taken considerable money and effort, but the new network infrastructure is now in place, and we will soon complete our first interconnection arrangements with Northwestel.

16. Unfortunately, without further policy changes, and inclusion of broadband as part of the basic service objective, remote areas in Canada will suffer.

17. This is the issue that concerns us most, and which we will focus on today.
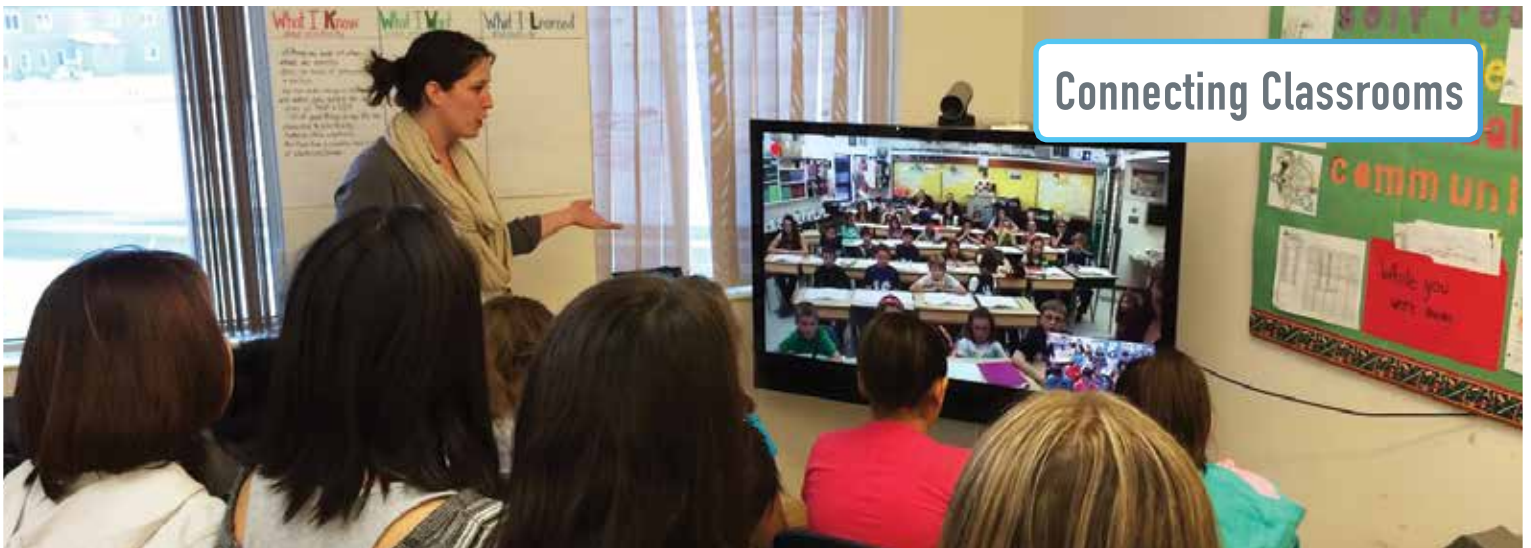
"A coherent plan for the whole thing"
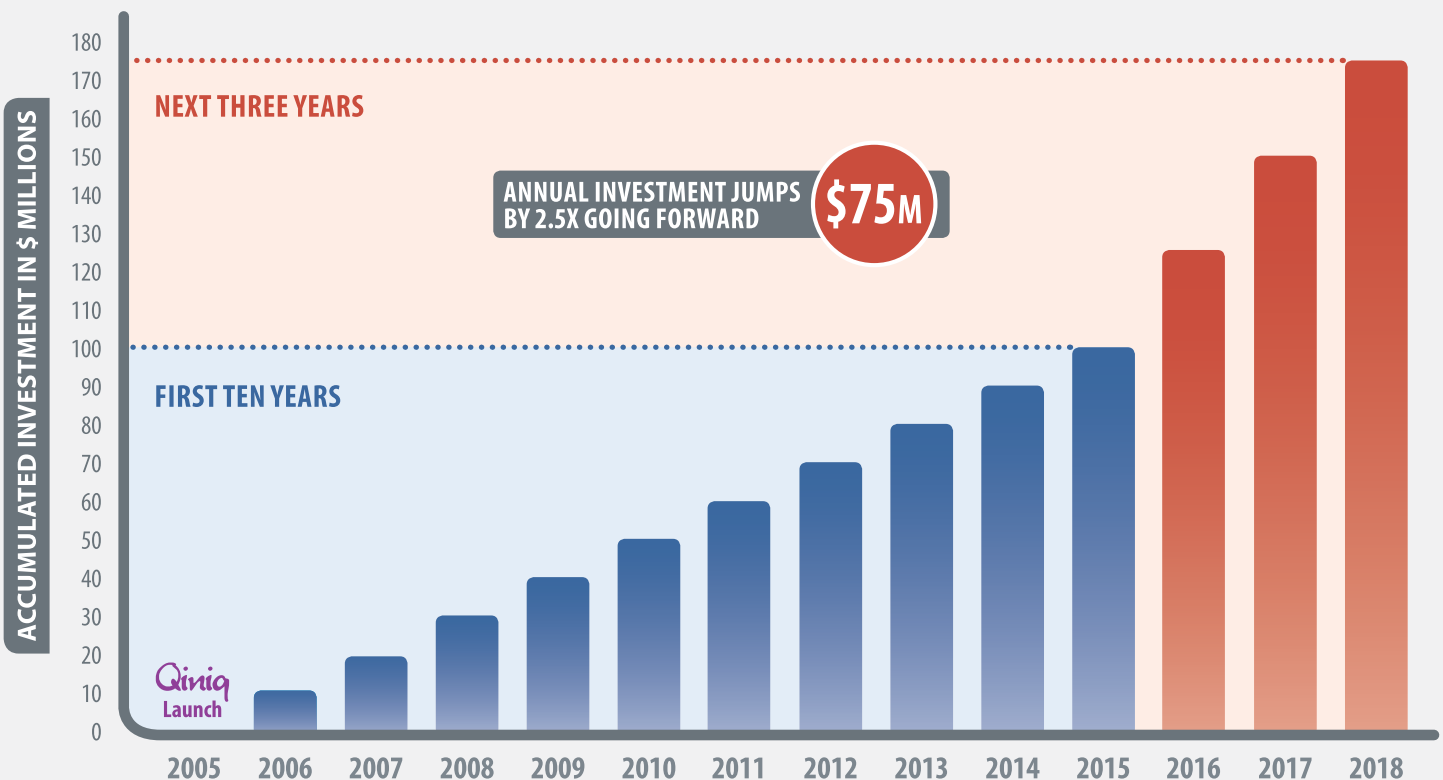

A Promising Future for Northerners

Upgrading Infrastructure

18. SSi has consistently advocated for a holistic approach to address the communications challenges and needs in the North. The Government of Nunavut noted that a holistic approach means more than "proposing little band-aids of this subsidy here and that grant there. We need a coherent plan for the whole thing."

19. We could not agree more.

20. To truly safeguard, enrich and strengthen the social and economic fabric in remote communities, reforms must benefit everyone. That means consumers, business and government, regardless of the "last mile" supplier they select.

21. A holistic approach would also have to involve commitments by the private sector. Companies like SSi need to take risks and commit to invest in developing the physical infrastructure as well as the human resources, **the people**, to support it.

22. I am happy to report that we are taking those risks. SSi is in the midst of a massive infrastructure build-out in Nunavut, the largest in our company's history. The new infrastructure will be transformative for the North and serve as a showcase for other remote areas around the world. This truly is a Canadian-made, a Northern-made, and exportable model.

23. Connectivity is critical. Lack of proper communications infrastructure has real-world negative impacts in our remote communities.

24. Let me put this in context. In many remote communities the school and health centre have a hard time finding trained staff. Unemployment is very high. Housing is limited and typically overcrowded. Add to this the fact that there is no bank, one or maybe two flights a week in or out and one sealift a year to get all of life's necessities. Imagine that for a moment, if you can. No TV. No Radio. No Cell Phones. No Internet. No libraries. No book stores. And no ability to leave.

Connecting Classrooms

$75 Million Expansion

ACCUMULATED INVESTMENT IN $ MILLIONS

NEXT THREE YEARS

ANNUAL INVESTMENT JUMPS BY 2.5X GOING FORWARD **$75M**

FIRST TEN YEARS

Qiniq Launch

180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

25. Broadband removes the barriers created by this isolation. Broadband provides access books and knowledge. Broadband brings educators and students together.

26. Education enables these same local kids to take on jobs that are currently filled with transient workers from outside the community. Connectivity has a dramatic impact on social development.

A $75 million expansion program

27. As I have mentioned, we have invested a lot over the last decade, and we are not finished yet.

28. Last September we announced a $75 million investment program for Nunavut's broadband future. Continuing over the next three years, it will drive significant network infrastructure and service improvements.
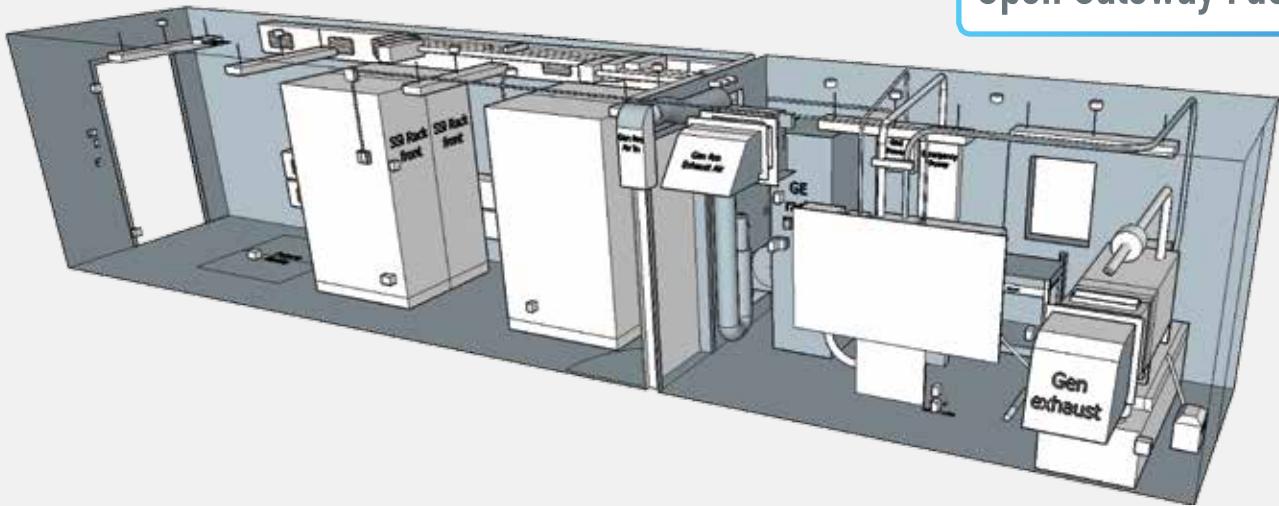
The Connecting Canadians Program

29. The Government of Canada contributed $35 million through the Connecting Canadians Program to help reduce the cost of consumer broadband in Nunavut. And to be clear, all of the Government investment goes directly to satellite capacity.

30. SSi is providing all other funding - more than $40 million over the next few years - for new infrastructure, even more satellite capacity, facility upgrades and operating expenses. To be certain, the investments we are making go well beyond what is required of us under the terms of our agreement with the Government.

31. Consumers saw the first benefits of this on April 1st when we activated new plans and increased usage caps in all 25 communities across Nunavut – without increasing consumer pricing.

Open Gateway Facility

32. Key components of our Nunavut investment program include:

   i. A 4G LTE broadband wireless network in each of the 25 communities to deliver mobile voice and broadband data, and other services like home security systems, content streaming and high definition video conferencing. Even plain old home phone service.

   ii. Significant upgrades to our satellite backbone and gateway infrastructure to support the additional capacity required over the next few years. This capacity is currently delivered via Telesat using C-band with plans to migrate to a new Ka-band High Throughput Satellite (or "HTS") service in 2018.

   iii. Perhaps more importantly than investments in hardware and software, an expansion to our Service North program, which employs and trains local Infrastructure Support Agents. These training programs are critical to developing long-term employment in the communities.

33. The pictures you are seeing are from the installation going on right now. There is no question that it is a challenge to build in the North. It is not a job for the timid and it requires commitment beyond financial return.

A Challenging Environment

Laying the groundwork to meet ever-growing demand

34. The current upgrades will dramatically improve the customer experience and deliver critical new services. But there is still more to be done. Customer demand in these remote and isolated communities is growing exponentially and backbone capacity is constrained.

35. We are hopeful that the results from this hearing will create conditions that enable long term planning and investment. We need to come up with a long-term, sustainable strategy.

36. While on the topic of capacity, let me touch briefly on the subject of minimum broadband speeds. These targets have been a key area of discussion for some time now. We believe asking whether the minimum burst speed should be 5, 10 or 25 Mbps misses the mark. It is the wrong question and invariably results in customer frustration during moderate to peak loading.

37. We believe that the overall quality of the service being delivered, and the user experience on the ground, is what matters. And the variables that impact those elements include backbone oversubscription, wholesale cost (which affects end user pricing) and reliability. Until these basic service conditions are met speed is immaterial.

38. This is not to say that minimum burst speed targets should not be set. However, if a user can never achieve the advertised speed, and their streamed content is constantly buffering, then we have not advanced anything.

39. It would be like suggesting that people in the Arctic should buy Ferraris because they are 3x faster than the current favorite, a ½ ton pickup truck. While we like the idea, it may not be a viable model for the North given our single lane gravel roads that are covered in ice and snow 8+ months of the year.

40. Clearly, the CRTC must implement different broadband targets and objectives for the North – particularly satellite-served communities. What matters most to the consumer is that they have access to global content and services, with a decent user experience, at a price that they can afford. That would be something meaningful.

41. As we have said before, and will continue to repeat, it is reasonably priced access to shared local infrastructure and backbone transport – not the last mile – that is the issue for our remaining underserved communities.

Investment and employment opportunities

42. I am very proud of SSi's contributions to the North over the past several decades – both in terms of direct investment, but also in terms of downstream benefits, new jobs, attractive new services and opportunities made possible through those investments. I am hopeful that the results of this hearing will enable us to complete the mission we started 25 years ago.

43. With that, let me turn it over to Dean to review details of our evidence, and speak to key elements we believe the Commission must address in reviewing the basic service objective.

SPEAKER: **DEAN PROCTOR**

Qimirluk: Focus on the Transport

44. Thank you, Jeff.

45. SSi's intervention is entitled "Qimirluk". Qimirluk is the Inuktitut word for backbone, and this is the cornerstone of our proposal to reform the BSO.

46. For remote communities to receive better broadband and participate meaningfully in the digital economy, focus must be on investing in and developing both backbone and gateway infrastructure.

47. Policy reform and new investment mechanisms must also retain and encourage competition and innovation in last-mile service delivered to consumers, business and government.

48. SSi has proposed the creation of a backbone assistance program (what we call the "BAP") as a means to augment backbone transport into remote communities and to develop open gateway facilities. This will allow competing local service providers to deliver quality and affordable communications services to end-users.

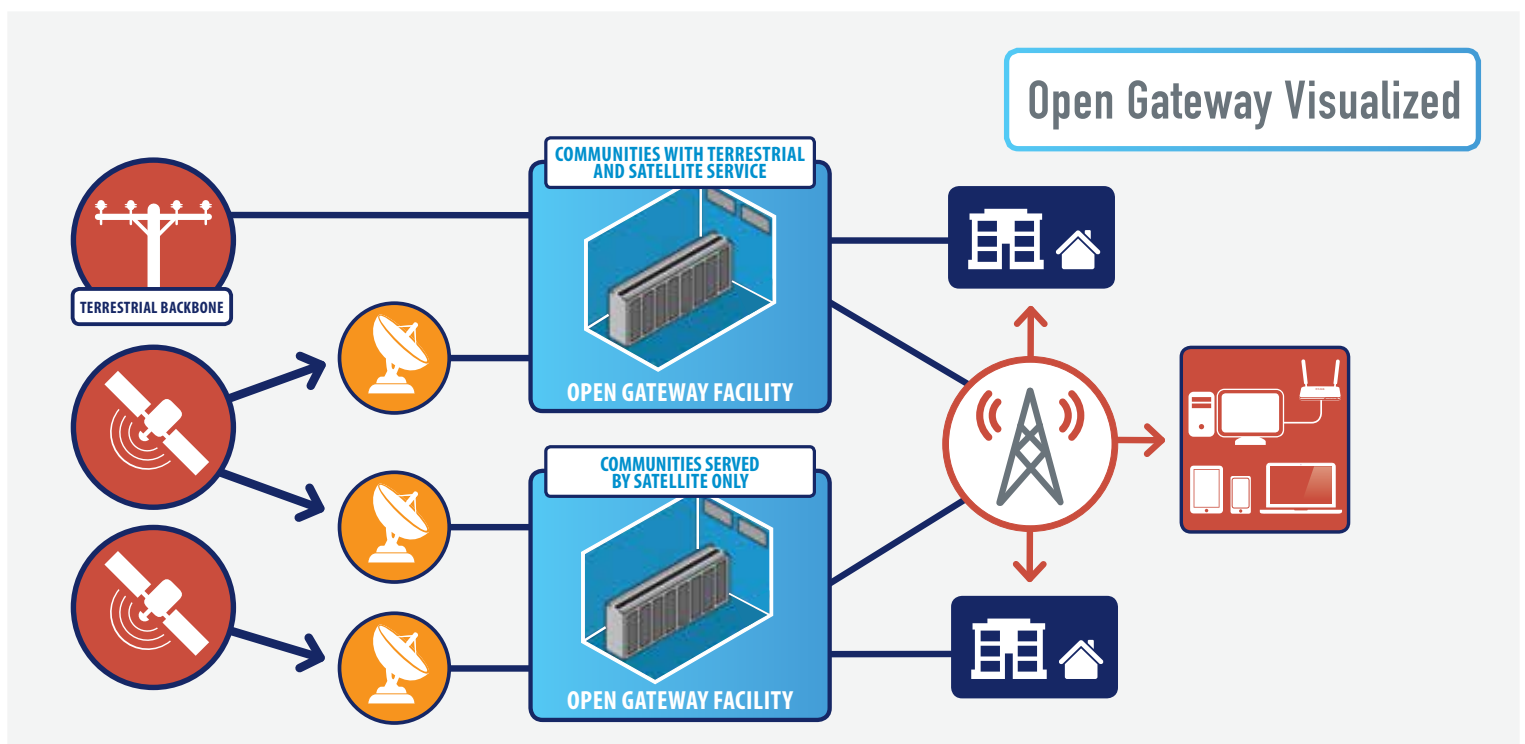**49.** We stated to the Commission at the public hearing in Whitehorse in 2013 that:

"… it is not at all about subsidies for local access infrastructure. SSi's current access network, available today, is capable of delivering 5 Mbps download speeds and can be field upgraded to provide more speed and capacity if required. Unfortunately, consumers will not be able to afford greater speeds without increased assistance on the cost of backbone."

Connecting families

Atii Home	Taki Home 4G	Taki Plus 4G	Taki Pro 4G
For those not on the 4G network, this plan will let you take advantage of 20 GB of usage!	Our standard residential plan, new and improved. The best value in the North!	Need some extra usage? This plan gives you an extra 10 GB at an unbeatable price!	Got a household of heavy users? Feeling the need for speed? This plan is for you
20 GB	20 GB	30 GB	50 GB
⊙ 1.5 Mbps	⊙ 3 Mbps	⊙ 3 Mbps	⊙ 5 Mbps
$80.00	$80.00	$180.00	$399.00

50. Jeff described to you SSi's investment program and technology upgrades currently underway in the North. With these, we are meeting the Commission's broadband targets of 5 Mbps down and 1 Mbps up. In fact, we are capable of delivering many times more that speed to every home, business and government office in Nunavut.

51. Put another way, we are deploying infrastructure in every Nunavut community that can deliver the same quality of broadband as you find in downtown Toronto.

52. Quality local access networks can now be built in remote areas largely due to advances in technology, in particular, wireless and IP technologies.

53. Unfortunately, while last-mile infrastructure in remote communities can match that in southern Canada, the barrier is the backbone transport connecting those same remote communities to the rest of the world.

54. Broadband service offering higher speeds and greater capacity in the North is still not affordable for many consumers and business, and the government remains starved for capacity to deliver their most basic of electronic services. This reality effectively disenfranchises Northerners from the digital democracy.

55. This is why all roads for policy reform lead to a focus on the backbone.

Open Gateway Visualized

TERRESTRIAL BACKBONE

COMMUNITIES WITH TERRESTRIAL AND SATELLITE SERVICE

OPEN GATEWAY FACILITY

COMMUNITIES SERVED BY SATELLITE ONLY

OPEN GATEWAY FACILITY

56. In terms of implementation, the exact amount of BAP funding will have to be established based on the service obligations to be met, and the number and identity of communities to be served. Service providers that receive BAP funding, "Open Gateway Providers", would be competitively selected.

57. A BAP-funded gateway provider will have to make available and consume exactly the same backbone connectivity and co-location services on the same terms as other local service providers in any given community.

58. The selected Open Gateway Provider will:

- Acquire satellite (or other) backbone transport from network operators;

- "Light" this capacity through the use of ground infrastructure, earth stations and other needed equipment and electronics;

- Bring this capacity into a point of presence in each community; and

- Make backbone connectivity services and co-location facilities available to all local service providers.

59. SSi also proposes that any Open Gateway Provider, the party receiving BAP funding, be considered the "carrier of last resort" for the communities it serves.

60. Finally, a key item is how to fund any new mechanism. We have detailed in our evidence how the Commission can evolve the existing primary exchange service and service improvement plan subsidy regime to redirect funds to the BAP. This would go a long way to addressing the funding needs.

Conclusions

61. In closing: today, consumers and businesses in the North are not full participants in the digital economy, while governments in the North cannot offer many essential services that rely on broadband - services that are taken for granted elsewhere.

62. Commission policy reform must address shortcomings in the delivery of basic telecommunications service to remote areas, including the North. SSi is proposing the backbone assistance program as the principal mechanism to do so.

63. Those living in remote and outlying communities, and the businesses, governments and other organizations that serve these communities, must have access to affordable communications services and competitive choice. Quality broadband must become a key component of the basic service objective.

64. The Commission has the means and the ability to enact substantive reform. Doing so successfully will allow Canada to be a global showcase, where broadband overcomes the barriers of distance, and where all regions of the country – no matter how remote – benefit from and participate fully in the digital economy.

65. Thank you for having allowed us the opportunity to present today. Johanne, Chris, Jeff and I would be pleased to answer any questions you may have.

It's a dry cold

25
YEARS

SSi

THANK YOU