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SSI MICRO WINS BIG: \$35 MILLION FROM FEDS

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What does it really mean? Inside the YK company's Ottawa operations and the crazy expensive realities of northern internet.



MARK RENDELL - JULY 7, 2015

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Calling Nunavut: SSi's Ottawa-based satellite dishes | Photos by Mark Rendell

As with most things Northern, it's federal money that greases the wheels of the internet game up here; the gravy train from Ottawa makes or breaks businesses competing to provide internet to communities across the North. Today, Yellowknife-based company SSi Micro got a serious squirt of axle grease, beating rival Northwestel to \$35 million of federal subsidies.

The contract comes at a critical moment for the company, which announced several weeks ago that it's ceasing satellite internet operations in 10 communities in the Northwest Territories; two years ago, SSi's Airware network, which provides internet to remote communities in the NWT, lost a key federal subsidy to Northwestel and has been bleeding money ever since. On top of this, the company recently lost out to Northwestel in a bid to build the Mackenzie Valley Fibre Link and is still embroiled in a lengthy and expensive CRTC appeal battle over Northwestel's internet pricing.

However, winning the \$35 million bid doesn't mean SSi is suddenly rolling in cash – the lion's share of the money will be passed straight to the satellite companies SSi works with.

“Satellite costs are something like 80 percent of the overall cost of delivery, and that's something we don't even see,” explains Tim Froehler, the company's manager of network operations, during my visit to the SSi office outside Ottawa at end of May. “The Canadian government gives money to us and we give it right back out the door to Telesat [a American based satellite operator]... we're just a funnel for that money.”

What the subsidy does mean, however, is that SSi can continue operating in all 25 communities in Nunavut. “In reality,” says Froehler, “if we didn't get it we'd have to shut down the 16 smallest communities. And then we'd relook at all of our business case and see what the nine largest would do for us.”

South to Silicon Valley North

In late May I visited SSi's office in the Ottawa suburb of Kanata, where data zooming up from Nunavut and bouncing off satellites above the equator is captured by a nine-metre satellite dish and channeled into the world wide web. There simply aren't too many companies founded in Fort Providence and headquartered on Old Airport Road that have a significant presence down south – so EDGE figured it was worth checking out.



Silicon Valley North: SSi's Kanata offices, home to 12 employees, a quarter of the company's workforce

The company has had some presence in Ottawa since winning its first \$10 million federal contract in 2004, to establish a Nunavut-wide internet network called Qiniq, and to run the Government of Nunavut's private web system.

“For all the satellites in all the communities, they have to have their internet gateway somewhere,” explains SSi communications manager David Veniot, as he shows me around the spacious building. It has a modern, minimalist design that masks its former incarnations as a Chinese food restaurant and strip club called Jason's. “That somewhere happened to be here, Ottawa, for political reason and for travel purposes. And the internet was actually fairly cheap for fibre-optic pipes to the rest of the world out of here.”

From 2004 until 2012, they'd been renting satellite space from other companies, an arrangement that was both inconvenient, and at times, a bit awkward:

“The place that we moved out of edited pornography. They were the big providers of pornography for satellite television,” says Paul Mariscak, SSi’s manager of Infrastructure, with a laugh. “So they edit, mix it and broadcast it. I got here to work at night, and it was weird because on all the monitors all you’re seeing is this hardcore porn.”

“I don’t know if Jeff [Philipp, SSi’s President/CEO], would want you talking about the fact that the teleporter used to be based in a porn centre,” chips in David Veniot.

“You talk to these guys!” replies Mariscak. “See, I’m not the right person for this job. I’m going to get us all in trouble here.”

In 2012, they moved into their current location. With a large open plan, exposed ventilation pipes, young tech wizards at well-appointed desks, a stylish kitchen and lounge stocked with board games and instruments, it’s the acme of modern tech buildings – a classic Silicon Valley North (as Ottawa is sometimes referred to in tech circles) structure. The building now houses 12 SSi staff, about a quarter of the company’s total workforce.



Look! Tech wizards

“We are still very much a Northern company,” says Froehler. “That being said, once you have a facility here, it’s far cheaper to operate here than it is in the North, which means we have access to more talent. It’s really hard to convince people to move up North, and I don’t know how many times I’ve hired someone to work up in the North and they turned around and left because they didn’t like living in the North.”

As far as I can tell, the two key components of the operation are a row of computer stacks in a cooled room with a glass wall – the brains behind SSi’s satellite network, through which all the data coming and going from Nunavut passes – and the two satellite dishes themselves, located in the parking lot outside the building. The larger of the two dishes, which has a nine-metre diameter, is housed in a large inflatable bubble that makes your ears pop as you go through the pressurized doors.

Northern web, southern cash

Frankly, to a layperson like myself, it's a very impressive setup. Yet one that could easily have seemed like an overconfident investment of capital if Northwestel had won today's \$35 million. Though perhaps it's a chicken and the egg situation – without the investment would they have trumped Northwestel?

The whole business of Northern internet, especially in Nunavut, is utterly reliant on funding agreements like the one they won today, my SSi hosts explain as we stand inside the bubble admiring the satellite.

At first blush, it might seem that \$35 million is an insane amount of public money to pump into internet service for a mere 8600 households in Nunavut – just over \$4,000 per home. Even more insane, perhaps, given that this latest round of subsidies will only bring the download speed in Nunavut up to around three megabits per second; Yellowknife speeds, by contrast, can get up to 100 megabits per second. But with no fibre-optic cables connecting Nunavut to the rest of North America (yet), such is the cost of bringing internet to one of the most remote parts of the world.

“Today, the Canadian government is subsidizing all the satellite-fed internet across Canada's North to the tune of about two-and-half times, which means if you buy an \$80 plan, you're actually paying a portion of a \$200 plan,” explains Froehler. “A small company could make money on the bigger communities, Iqaluit, Cambridge Bay, Rankin, all those communities, selling \$60-a-month plans, because there's just enough. But as soon as you go to Grise Fiord, where there's, I don't know, 50 accounts but three quarters of a million in ground infrastructure – the power bill alone isn't covered by the 50 accounts. It's just mind-boggling.”

The cost is driven by a number of factors: the equipment on the ground (a satellite dish in each community), the cost of Northern transportation, staff and office space, etc. Mostly, though, cost is driven the satellites themselves.

“Twenty or 15 years ago, Telesat launched Anik F2 [the satellite SSi uses] for, I don't know, \$400 million, and they're still trying to recoup cost,” says Froehler. Add to that the fact that there are so few functional satellites orbiting the earth, and satellite companies can charge enormous prices, especially when being asked to point their beams at remote areas.

“If I’m a satellite operator, I can either focus my beam and hit 10 million people in New York, or I can spread my beam out and hit 10 million people across North America. What’s your business case? Who’s buying?” says Froehler. “The difficult part is finding a satellite provider that’s got any real interest pointing their beams at the North. There’s not a lot of people in the North, so how do you convince them? Well the way you convince them, or anyone else, is you sign a really long contract, you say, ‘listen I’ll buy 20 years capacity now.’ Oh hey, no problem, we’ll get a pattern for you.’

The scarcity of satellites is also the main thing limiting internet speed in the remote communities of both Nunavut and the NWT.

“Think of a satellite as having a certain amount of modems on it. So say it has 12 modems on it, those are 12 people; you can only ever have 12 people on that satellite. Say you hit that, and say, ‘I want more bandwidth’ – well, it’s not like down south where you can readily give someone more bandwidth and it’s infinite almost. When you want new bandwidth in Nunavut, then it’s putting a new satellite in space.”

Telesat is planning on putting up a new satellite in 2017, and you can be sure SSI will be chatting with them in the coming months and years, pockets full of federal cash.

In the longer term, SSI is starting to plan for what Froehler says is the inevitable arrival of fibre optic in the North. Last year, a company called Arctic Fibre floated the idea to the Canadian government of helping build a fibre-optic cable from the U.K. to Japan through the Northwest Passage. The feds didn’t get behind it, but according to Froehler, “there’s absolutely no question it will be built. The only real question is, is it three years or ten years from now?”

“I think what he’s probably going to have to do is get the whole line that runs from Asia to Europe funded privately and then the Canadian government will probably seriously consider funding the spur lines to all communities, because remember the Canadian government can’t be seen just bringing it into a couple communities and not all, they have to be seen as being fair to all.”

What then of SSI’s satellite business? Well there’s always a need for redundancy in case the fibre line goes down, says Froehler. And should fibre arrive, SSI is hoping to position itself as the central internet distributor. “We believe someone should build a regulated monopoly, should build Northwestel 2, a regulated backbone in Nunavut. It would need some sort of facility in a community, to ensure anyone that comes in, whether it’s Northwestel, SSI, Telus, Bell, would pay the same rack rate in that facility. Then you can get Telus and Bell in, because frankly the customer will have a better service if there’s more than just SSI and Northwestel.”

Still facing uphill battles

With their gorgeous building and nice new federal contract, one could almost forget SSi still faces uphill battles: they've all but lost the NWT's satellite internet game to Northwestel, and their viability in Yellowknife and the larger communities is heavily dependent on a key CTRC decision that should be announced any week now.

The decision relates to a convoluted set of appeals, and appeals of appeals, between Northwestel and SSi over the retail and wholesale price for internet brought north by Northwestel infrastructure.

"We have to buy our transport, from the border of Yellowknife down to the south to connect to the rest of the world, from Northwestel," explains Dean Proctor, SSi's chief development officer and legal guru. "They were selling us units of transport seven times higher than they're selling it to the retail customers, so how could we possibly compete with them in the retail market if we're paying seven units per gigabyte, and they're selling it to you as a retail customer for one unit?"

In 2011, SSi asked the CRTC, which regulates the telecommunications industry, to force Northwestel to lower the cost of wholesale internet. After 18 months, the CRTC ruled in their favour, but then went ahead and knocked down Northwestel's retail price – a great move for customers, but one that once again threw the wholesale/retail balance out of whack, and made it tough for SSi to compete. The latest round of appeals will, Proctor hopes, help get these back in line.

Until then, it seem like SSi's cash cow is going to be on the Nunavut side of the border. But they're also looking further afield: "Our focus right now is in the North. But Jeff described it well, it's kind of like high school... it's a very difficult environment. So if you can operate successfully in the North, the lessons learned serve very well in other remote areas around the world."

Note: Air North provided the flight to make this story possible. While we're incredibly thankful for their contribution, the company did not influence the story's content.

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