

The Alberta SuperNet: A Next Generation Network between Public and Private Sectors



**Connecting the Future: Rural Broadband
Technology, Policy and Impact Conference
Queen's School of Business, December 3-4, 2012**

Who we are

broadbandresearch.ca

Ted Rogers School of IT Management

– **Catherine Middleton** (Principal Investigator):

- Canada Research Chair in Communication Technologies in the Information Society

– **Adam Fiser** (Visiting scholar):

- SSHRC postdoctoral fellow (2010-2012)
- adamfiser.com



Broadband
Research



Data collection

- Key informant interviews (2010 – 2011)
- Site visits in 2010 (Edmonton-Calgary corridor)
- Online information retrieval (provincial and municipal documents)
- Literature review: Academic (SuperNet Research Alliance), Private sector (ViTel, Taylor Warwick), Public-Private (AAMDC, ABCTech)

What is SuperNet?





Next Generation Networks: Where does SuperNet fit?

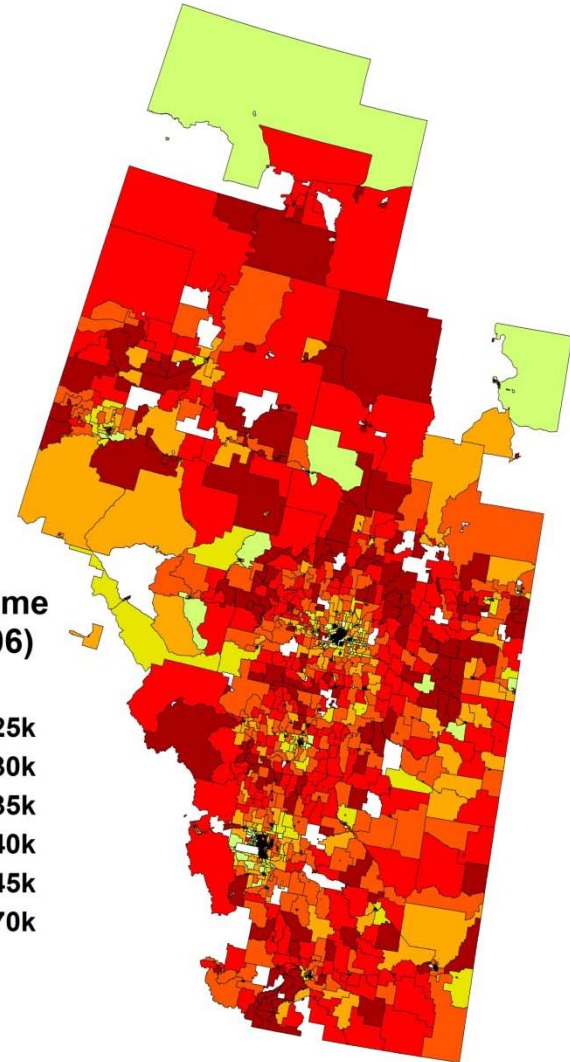
- The **International Telecommunications Union** (ITU) defines a Next Generation Network (NGN) as:
“an evolutionary path in which individual service-specific networks are developing into advanced IP-based networks capable of providing a full range of services and applications accessible from a wide range of devices that can function from any location”.

Geography matters



Surface area: 661,190 km²
Population (2011): 3.8M
GDP (2011): CAD \$295M

Median Income
(Census 2006)



The physical extent of the project

- **15,000 km** is the total length of SuperNet:
 - **13,000 km** of fibre (built and leased)
 - **2,000 km** of new wireless connectivity



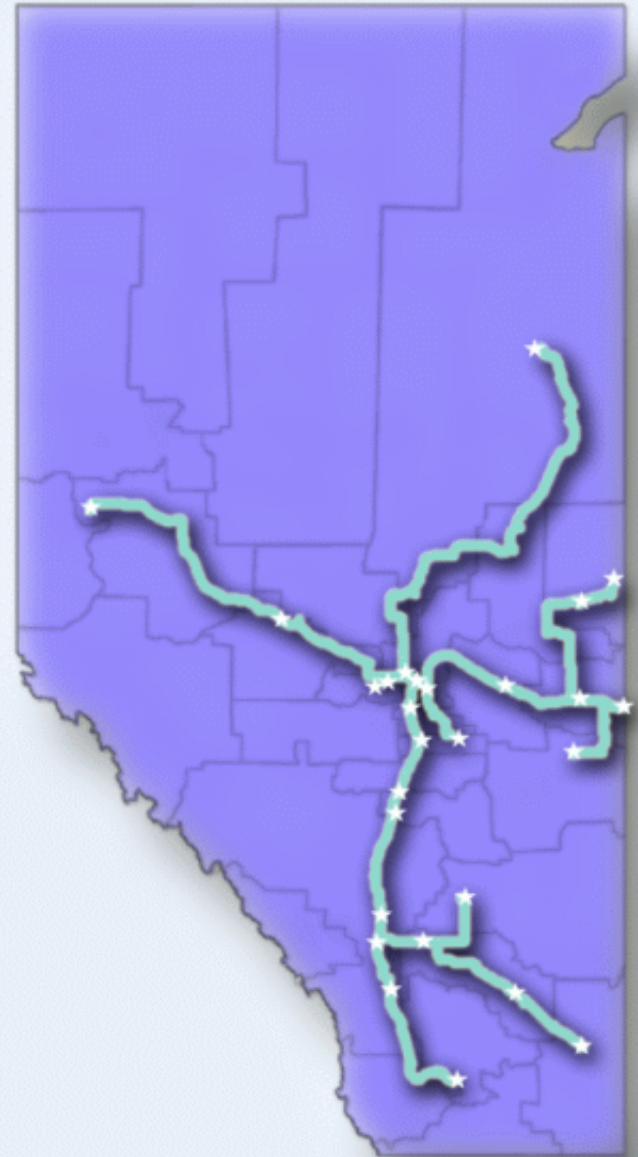
Who were the key investors?

- Government of Alberta: ~\$193M (not including ongoing grant support for rural broadband, etc.)
- Bell Canada (aka Bell Nexxia, Bell Intrigna, Bell West): >\$200M (with cost overruns)
- Axia SuperNet Ltd: ~\$30M (not including ongoing investments, etc.)
- Service Providers (In 2012: 89, including 53 WISPs)
- 64 Municipal Districts (various investments)

The Base Area Network

The Base Area Communities are the 27 larger communities.

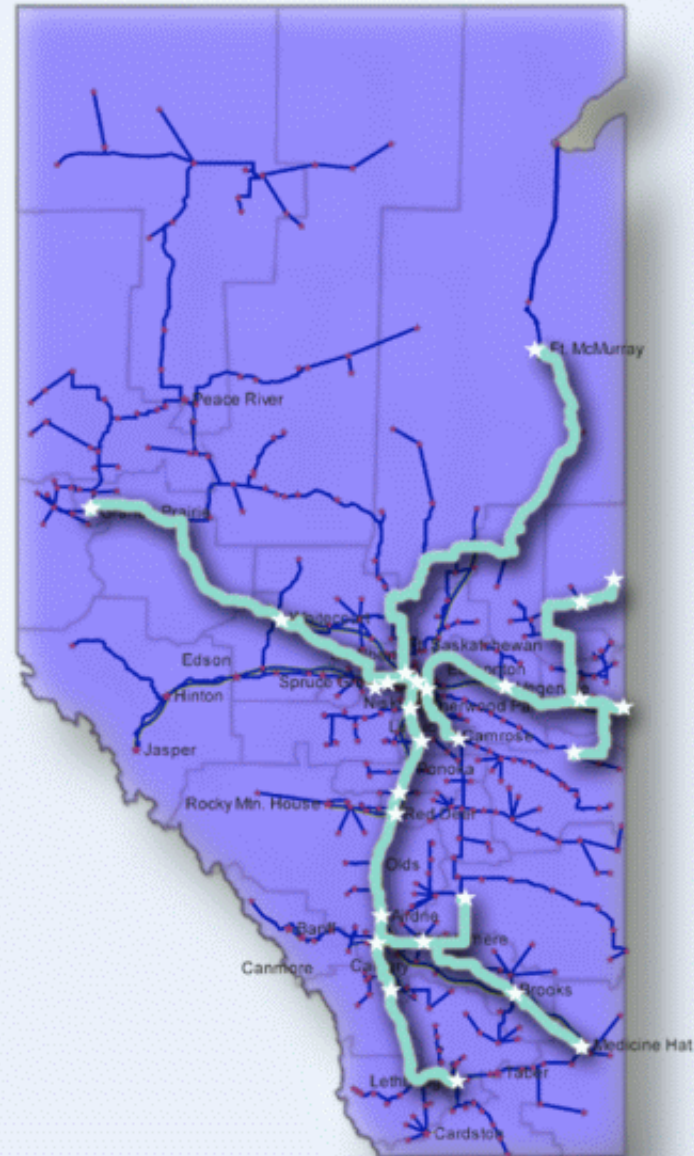
- Airdrie
- Bonnyville
- Brooks
- Calgary
- Camrose
- Cold Lake
- Drumheller
- Edmonton
- Fort McMurray
- Grande Prairie
- High River
- Lacombe
- Leduc
- Lethbridge
- Lloydminster
- Medicine Hat
- Red Deer
- Sherwood Park
- Spruce Grove
- St. Albert
- Stony Plain
- Strathmore
- Vegreville
- Vermilion
- Wainwright
- Wetaskiwin
- Whitecourt



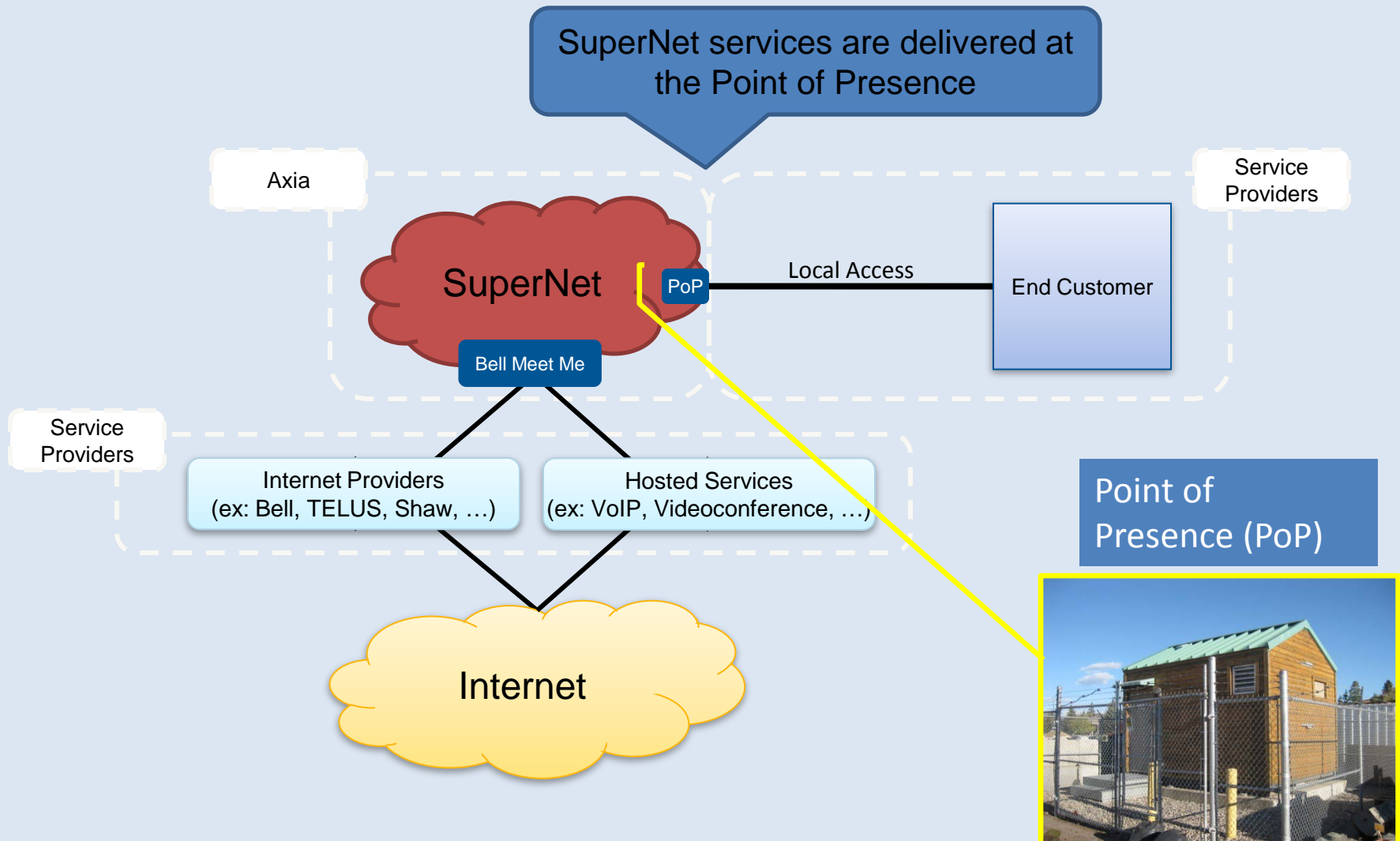
The Extended Area Network

SuperNet's EAN consists of 402 rural communities.

In 2012 ~89 Independent Service Providers are responsible for enabling consumer access in the EAN. (~53 WISPs)



Service model for Service Providers



Source: Axia presentation to Ryerson University (2010)

What do WISPs offer rural residents?

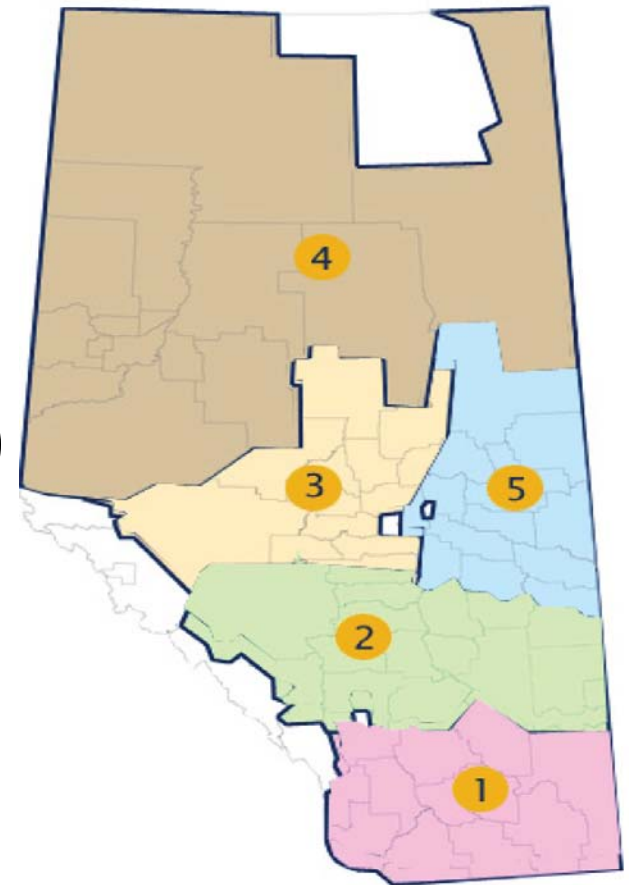
Attribute	Xplornet	Terra-byte	Broadband Surfer
Download speed	Up to 3 Mbps	1.5 to 3 Mbps	< 3 Mbps
Upload speed	Up to 500 kbps	Unspecified	Unspecified
Cap	20 GB	20 GB	Varies: audio/video streaming prohibited
Set up cost	\$149 (2 year term)	\$275 (2 year term)	\$400
Monthly Price	\$49.95	\$49.95	\$49.95
VOIP	Not offered	\$30/month	Not offered



Midrange WISP offerings fall short of CRTC benchmark: 5/1 Mbps

Rural broadband coverage (and targeted populations)

- ✓ All 108 towns (~452k)
- ✓ All 95 villages (~40k)
- × 44/51 summer villages (~6k)
- × 33/44 First Nations
- ✓ All 8 Métis Settlements (~5.5k)
- ? **64 municipal districts (~457k)**
- ? **8 improvement districts (~2k)**
- ? **3 special areas (~4.5k)**

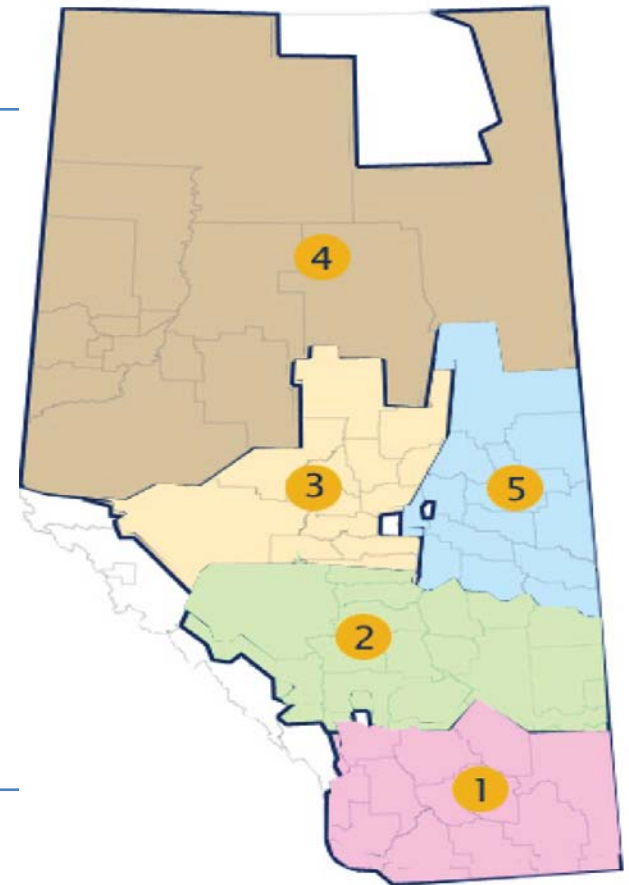


Source: Alberta Rural Coverage Study Final Public Report (November 2011), ViTel Consulting

Where are the coverage gaps?

Alberta's rural municipal districts, special areas and improvement districts consist of hamlets and townships

District	District Pop.	# of Townships	% served	# of Hamlets	% served
One	80k	738	57%	76	98%
Two	128k	1057	40%	88	73%
Three	131k	949	34%	102	84%
Four	153k	3771	10%	62	84%



Source: Alberta Rural Coverage Study Final Public Report (November 2011), ViTel Consulting

Closing the gaps and going beyond

- SuperNet only goes so far...
 - Geo-demographic challenges set limits on design
 - Backhaul infrastructure to reach SuperNet can be costly
 - WISPs need incentives to build for capacity as well as coverage in uneconomic areas

Thank you

Updates available @
broadbandresearch.ca
adamfiser.com