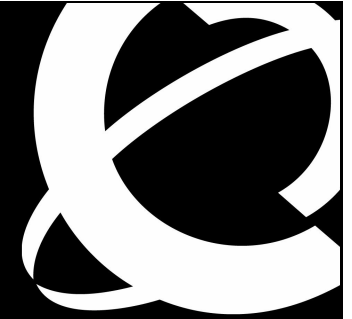


Case Study - WiMAX in rural and remote areas:

Netago Wireless – Special Areas in Alberta, Canada

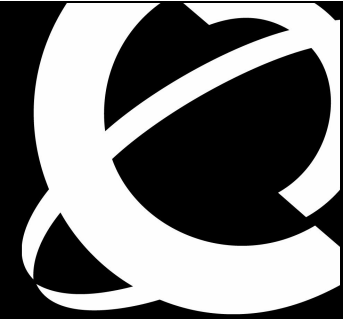
Mahdi Smaoui – Advisor, Advanced Research and Standards

ITU-D Q10 2/2 rapporteur's meeting
Geneva, Switzerland
7-9 May 2007



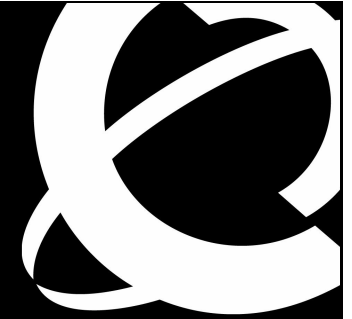
Items covered in this presentation

- Introduction
- Main drivers of the project
- Location and population of the Special Areas
- The Special Areas Board
- Background on Netago Wireless
- Why Netago chose WiMAX?
- Nortel's involvement
- Success Story



Introduction

- This presentation describes a WiMAX trial of a solution in south eastern Alberta in an area called Special Areas of Canada
- The area is administered by the Special Areas Board or SAB
- WiMAX is a leading technology for providing high speed access to sparsely populated rural areas
- WiMAX brings the benefits of DSL-like speeds similar to urban areas to rural and remote areas and enables access to the internet
- Nortel provided a trial deployment of WiMAX for Netago Wireless in the Area
- This trial demonstrated how WiMAX can successfully provide service to a large, remote area that would otherwise be unserved or, at best, significantly underserved.



Main drivers of the project

- The population is growing across Alberta except in the Special Areas. The aim is to attract new businesses and families to SAB, retain future generations
- Provide high-speed data services to residents of rural Alberta at comparable prices to urban areas
- Nortel objective was to supply the customer with the best WiMAX technology and expertise to deliver a cost-efficient fixed broadband solution

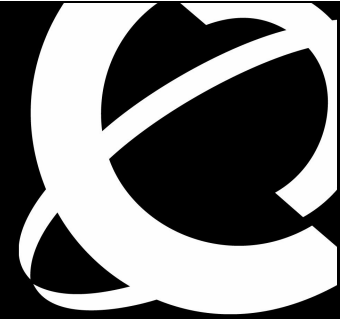
Broadband services is a missing critical economic driver

Location and population of Special Areas



- Special Areas are in the province of Alberta, Canada

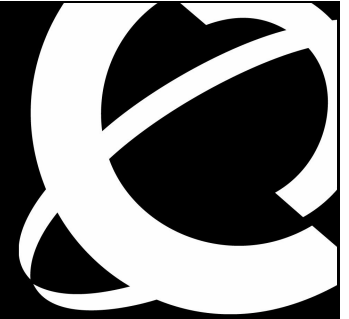
Location and population of Special Areas – cont.



- Population in the area is around 12,000
- Area is approximately 21000 square km
- Arid terrain
- Industries: farming, ranching, oil and gas



Location and population of Special Areas – cont.



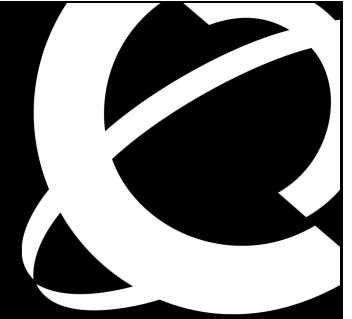
- SAB is a unique rural municipal area covering approximately 2.1 million hectares in south-eastern Alberta



Special Areas Board (SAB)

- SAB is responsible for the administration of all municipal services in the area
- SAB is also responsible for public land management with the lease of more than 50% for the purpose of the local economy (e.g. oil and gas development, pastures, grazing for cattle, cultivation of fields etc...)
- Role of maintenance and extension of all local roads comprising some 6000 km and growing.
- Provides for the maintenance of parks including planting of trees, maintaining grass and park facilities.
- Aims for rural stabilization and economic development through a series of partnerships which allow exploration and development of community supported activities

NETAGO Wireless

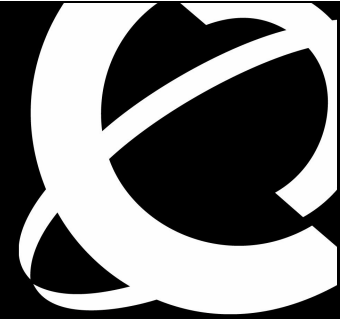


- Internet Service Provider that now provides the Area with broadband services
- 2003: Netago Wireless is created
- 2004: Options for broadband connectivity remain cost prohibitive
- 2005: Alberta SuperNet launches - fiber connections for all of Alberta
 - à Netago establishes partnerships
 - Upstream provider: Alberta SuperNet
 - Municipal government: Special Areas Board
 - Equipment manufacturer: Nortel
- 2006: WiMAX trial and network launch

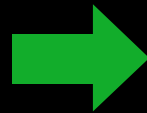


Partnerships are essential
to make the impossible
probable

Decision – Making process: Why NETAGO Chose WiMAX?



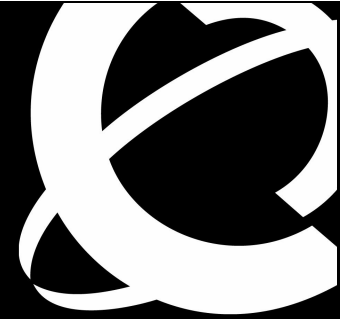
- Non-proprietary solution
- Economies of scale
- Quality of service



- Extend existing coverage by 50%
- Lower cost to consumers
- Enable VoIP, prioritize business over end-users

WiMAX is THE technology to make broadband happen for this area

Nortel involvement in the project

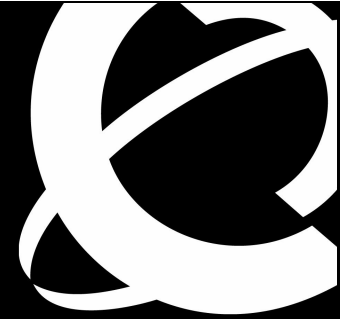


- Timing
 - Summer 2005: RFP requested
 - Dec 2005: Equipment arrives
 - Jan 2006: Trial launched
- Implementation:
 - Cover Hanna and 2 rural areas
 - Network operates in the 3.5 GHz band
 - Trial began with 3 towers/3 Base Transceiver Stations (BTS)
 - Omni directional antennas
 - 35 outdoor and 8 indoor subscriber units
- Results:
 - Ranges up to 20 km and 15 km to outdoor and indoor units
 - Speeds of 1.5 / 2 and 3 Mbps, depending on the needs
 - Tested streaming video at 8 Mbps

"Nortel's product achieved ranges close to 20 km from the base station to the outdoor end-user equipment and 15 km to the indoor solution. This exceeded our expectations. And being such a small company, we really appreciate the relationship we've established with Nortel."

Terry Duchcherer, president and founder, Netago Wireless

Success Story: Some enabled services and applications



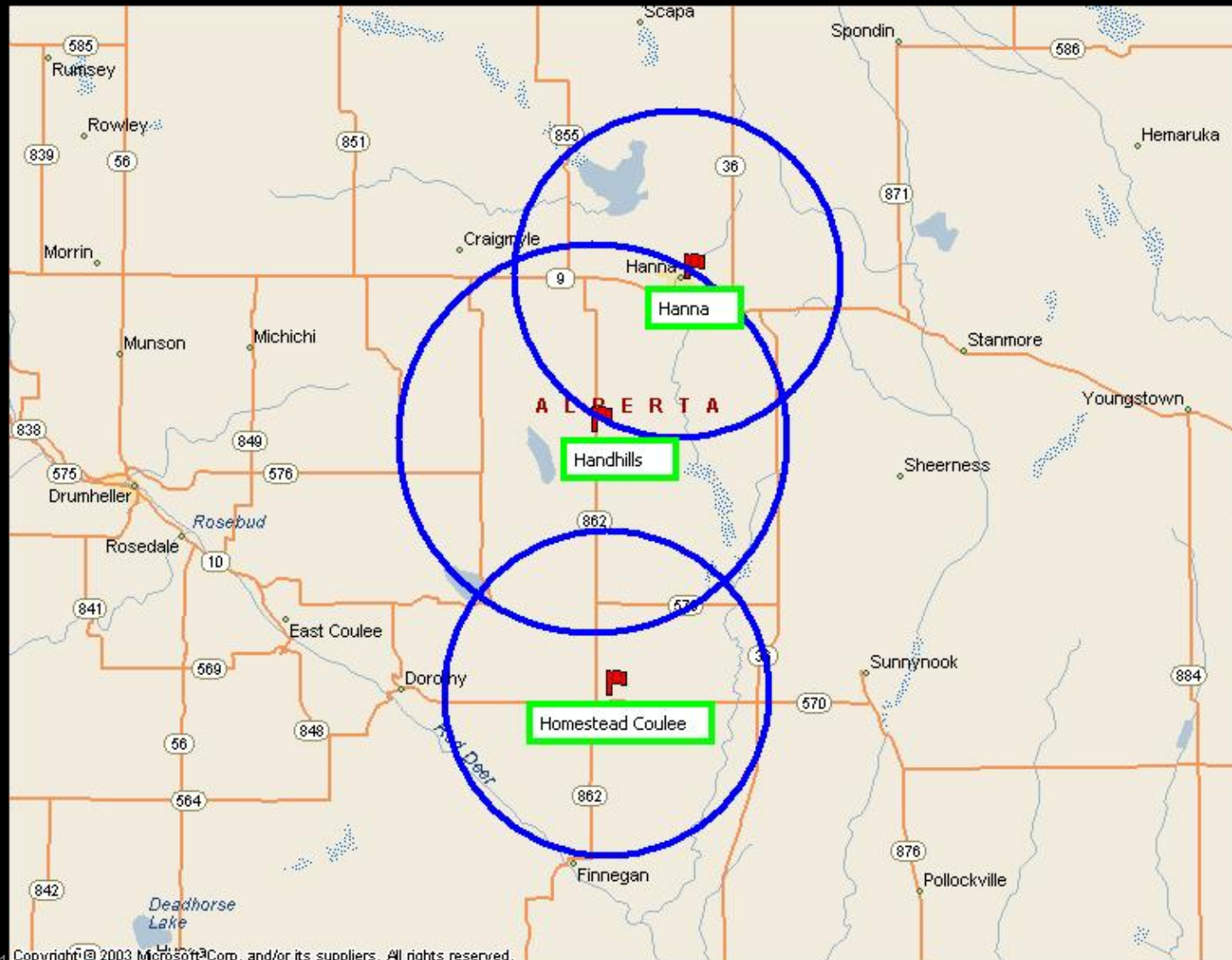
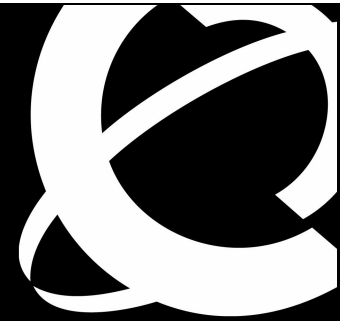
- Residents: office from home, online banking, distance learning
- Ranchers: agricultural research, buy/sell cattle
- Oil company: company LAN speeds of 2 Mbps increased work productivity
- Calgary Stampede: 2 Mbps enables transfer of high-bandwidth data



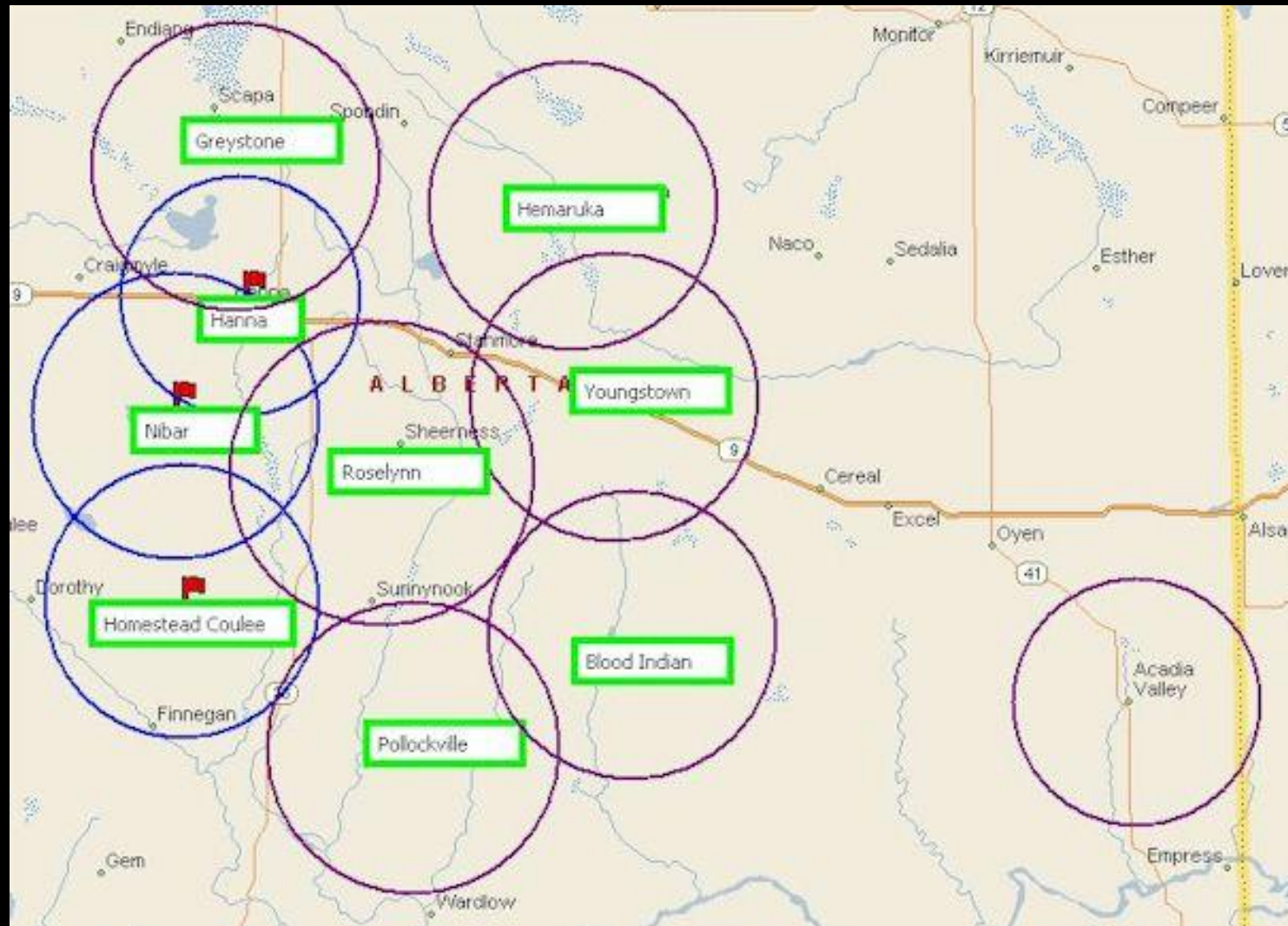
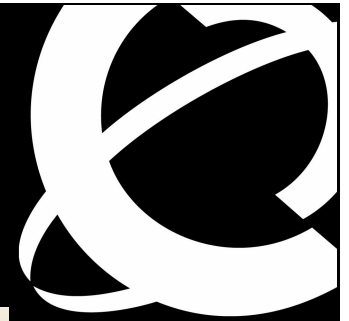
Customers are delighted

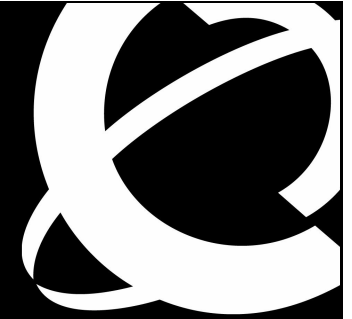
Success Story – cont.

Coverage at the start of the Netago trial



Success Story – cont. Current Coverage by Netago Wireless





References and more information

- SAB:
<http://www.specialareas.ab.ca>
- Netago Wireless:
<http://www.netago.ca>
- Nortel Netago Case Study:
http://www2.nortel.com/go/news_detail.jsp?cat_id=-9252&oid=100198324&locale=en-US
- **Nortel WiMAX solutions:**
http://products.nortel.com/go/solution_content.jsp?segId=0&parId=0&prod_id=56600&locale=en-US
- Alberta Super Net:
<http://www.albertasupernet.ca>