



**Presentation  
on  
Urban Fibre Study  
in  
Prince George**



# The Prince George Advanced Networks Task Force



*The Backbone of Research,  
Education and Innovation*



Western  
Economic  
Diversification  
Canada

Diversification  
de l'économie  
de l'Ouest  
Canada



# Timeline

- Prince George Advanced Networks Task Force (PGANTF) endorsed by City of Prince George December 2006
- Task Force requests funding from Western Economic Diversification (WED) for Feasibility Study and Business Plan May 2007
- a2b Fiber Proposal delivered Fall 2007
- Feasibility Study presented August 2008
- Business Plan delivered September 2008
- Business Plan delivered to Prince George Council at the end of October 2008



# Feasibility Study Purpose

- Survey of community usage and needs
- Outline current communication technologies
- Suggest governance and management
- Detailed network capital and operating costs
- Projected revenues



# Feasibility Study Steps

- Survey Monkey (online survey plus phone interviews with key stakeholders)

The screenshot displays Adobe Acrobat Professional with a PDF document titled "Survey\_5750545\_3102008.pdf". The document contains interactive form fields. The main content area shows four pages of a survey, numbered 1 through 4. Page 1 is the introduction, page 2 is background information, page 3 is business services, and page 4 is a continuation of the survey questions. The right-hand pane shows a detailed view of the first page, including the following text:

**1. Introduction**  
The aim of this survey is to determine the level of desire for advanced networks within our business community. Advanced networks enable higher bandwidth services such as video conferencing. The Innovation Resource Centre (a member of the Prince George Advanced Networks Task Force - or PGANTF) intends, with your help, to determine if such a network could help develop and diversify the economy of our community. The following questions are of a non-proprietary nature, and your information will not be made public. The survey should only take a few minutes.

**2. Background Information**  
General questions about your company.

**1. What is the web address of your company?**  
\_\_\_\_\_

**2. What is the web address (or street address) of your office? (if different than the above)**  
\_\_\_\_\_

**\* 3. Approximately how many employees work for your organization in this office?**  
 0-20  
 21-50  
 51-100  
 101+

**\* 4. Do you have branch offices?**  
 Yes  
 No

**5. If Yes, how many?**  
Total Branch Offices: \_\_\_\_\_

**3. Business Services**

**\* 6. Have you heard of Video Conferencing?**  
 Yes  
 No

**7. If so, and assuming the service exists at the other end, please indicate how likely you are to use it in your communications with the following:**

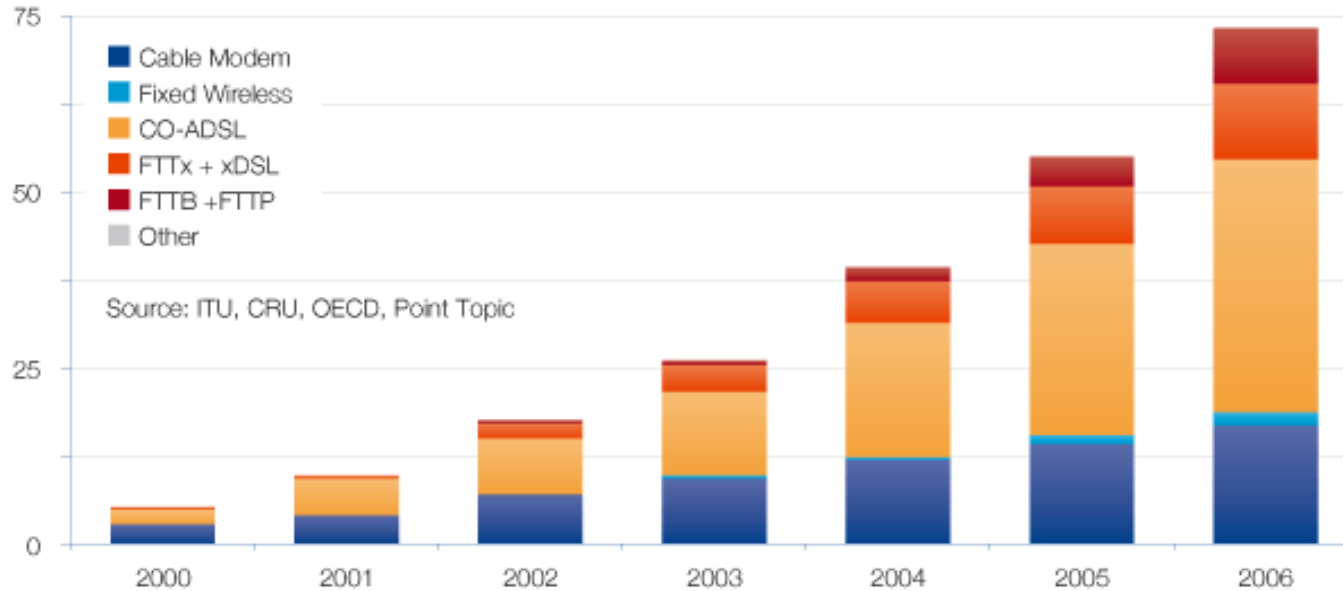
	Never	Rarely	Sometimes	Often	Very Often	N/A
(0) Other Offices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(1) Partners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(2) Suppliers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(3) Others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



# Feasibility Study Steps

- Outline current communication technologies

**BROADBAND SUBSCRIBERS BY TECHNOLOGY (MILLION)**



Cable Modem  
Fixed Wireless  
CO-ADSL  
FTTx + xDSL  
FTTB + FTTP

Fiber is a component of a Hybrid-Fiber-Coax (HFC) network  
Fiber is required for backhaul  
Fiber is required to the CO so that CLECs can obtain tariffed Cu loops  
Fiber to the GPON or AON (FTTN) is required to enable VDSL  
We are recommending that PGANTF connect 100 buildings initially



# Feasibility Study Steps

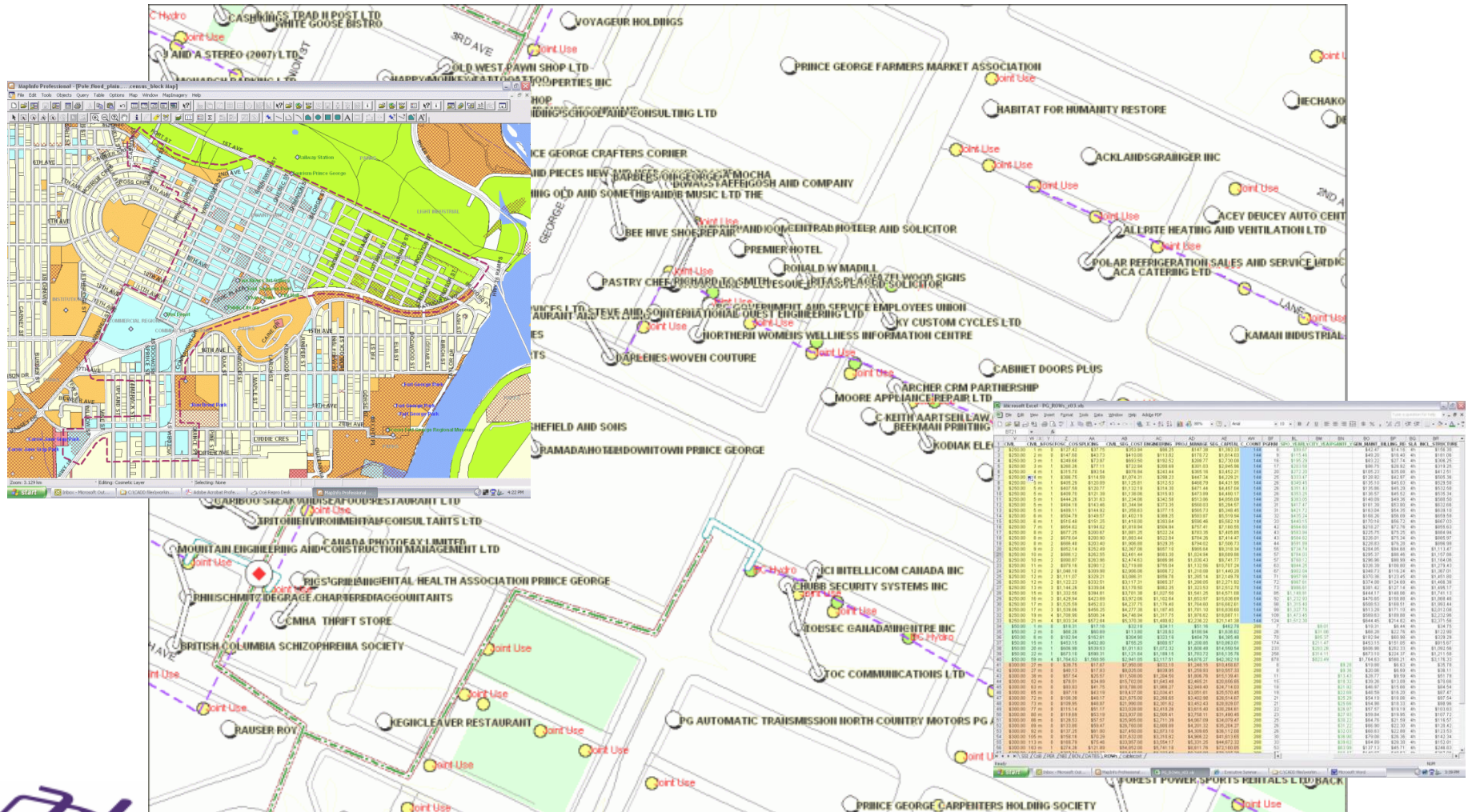
- Suggest governance and management



<p><b>Network Management</b></p>	<p>Monthly lease of dark fiber, management of COLO. Internal resources operate owned Fiber Management System.</p>	<p>Manage supplier contracts for wholesale managed VLAN and other Layer 2 services.</p>	<p>Monthly lease of dark fiber, management of COLO, no Layer 2 services initially.</p>
<p><b>Ownership</b></p>	<p>City owned utility, conduit, cable, and fibers.</p>	<p>Shared ownership based on original build partners.</p>	<p>City owned utility, fibers. Contracted conduit and cable manager, shared ownership within cable or conduit or trench.</p>
<p><b>CAPEX and OPEX</b></p>	<p>City pays all build and operating expenses, guarantees drop cables – modifies term of lease accordingly.</p>	<p>Shared build cost, outsourced network management – contract terms ensure ‘open access’ of Layer 2 services.</p>	<p>Coordinates shared fiber builds to reduce both CAPEX and OPEX.</p>

# Feasibility Study Steps

- Detailed network capital and operating costs



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Duplication Prohibited



# Feasibility Study Steps

- Projected revenues

1. Existing customers
2. Service migration to fiber (existing usage IC and BL GIS) – 33% by year 3
3. New fiber-based services - based on survey – 33% by year 3
4. Corporate Connections – and selling network capacity to providers

In all cases we assume only 33% success in selling fiber services

Where estimates are derived 'top-down' from known telecom spend or current fiber service costs, we assume only 33% of the client revenue will go towards paying for the fiber network.



## Keys to Success (Scott's opinions)

- Community buy-in important and a driving force is **REQUIRED**
- Leverage what you have and commit to critical mass (a certain number of connected buildings, a footprint or service area)
- Open access network / data centre / network access points
- Start at infrastructure / utility level (water, sewer, fiber...)
- Revenue neutral (set expectations accurately)
- CAPEX vs. OPEX (to involve larger network providers)
- Flexible payment methods for start-ups (support local brains)
- Interconnect vs. Overbuild (play nice with others)
- Visceral is better than Intellectual (listen to those who live it)

