



# A Framework for Investigating the Value of Public Wireless Networks

## **The Muni-Meltdown Shouldn't Have Been a Surprise**

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# Definitions/Context

- public. wireless. broadband
- municipal. infrastructure



The Internet can't hide anymore ...AT&T Mobile Broadband

# Wi-Fi is Problematic Public Infrastructure

- Broadband 'in the public interest':
  - ubiquitous, universal, affordable service
  - choice of service provider
  - network is usable and useful, fosters community engagement

(Potter and Clement develop this definition)
- Public infrastructure is developed *for* people
- Muni wireless deployments and research *neglect* people

# Usage Contexts for Public B'band Networks

## Access Type

		Primary	Secondary
Willingness to Pay	High	<p><b>Internet Service Provider</b></p> <ul style="list-style-type: none"> <li>- 'average' consumer, service extension to rural/remote area or household looking for an alternative to existing ISPs</li> <li>- household pays</li> </ul>	<p><b>Roaming ISP</b></p> <ul style="list-style-type: none"> <li>- knowledge worker, mobile sales representative, professional, business traveller</li> <li>- individual or employer pays (fee is a business expense)</li> </ul>
	Low	<p><b>Digital Inclusion</b></p> <ul style="list-style-type: none"> <li>- connectivity / community building for 'under-privileged' and others</li> <li>- individual or household pays, may be subsidized</li> </ul>	<p><b>Roaming Affordable Access</b></p> <ul style="list-style-type: none"> <li>- freelancer, student, tourist</li> <li>- individual pays (reluctantly)</li> </ul>

# Affordances of Wi-Fi

- Location of Use
- Mobility
- Network Coverage
- Network Speed and Reliability
- Typical Applications
- Access Device(s)

# Affordances by Contexts of Use

	Digital Inclusion (Affordable Access)	Internet Service Provider	Roaming Internet Service Provider	Roaming Affordable Access
Location of Use	✓	✓	X	?
Mobility	n/a	n/a	X	?
Network Coverage	✓	✓	X	?
Network speed and reliability	?	X	X	?
Typical Applications	?	X	X	?
Access Device(s)	✓	✓	?	?

# Is Wi-Fi Good Public Infrastructure?

## Access Type

Primary

Secondary

	Primary	Secondary
High	<b>Internet Service Provider</b>	<b>Roaming ISP</b>
	Private sector incumbents offer more reliable, higher quality, more widely available service	
Low	<b>Digital Inclusion</b>	<b>Roaming Affordable Access</b>
	Public providers offer more accessible, affordable, open service	

**Willingness to Pay**



# Assessment of Wi-Fi Deployments

- Distinction between primary and secondary users is key in understanding 'market'
- Those who are willing to pay are generally better served by private sector
- Wi-Fi may be the best option for those unwilling to pay, but offers inferior service
- **Challenge:** how to enshrine principles of good public infrastructure in current and future broadband deployments

# Challenges for Public Infrastructure

- Wi-Fi was appealing because it is (relatively) cheap, accessible (license exempt spectrum) - but it doesn't meet user needs
- Incumbents are well-positioned to develop next generation broadband technologies (e.g. control of WiMAX spectrum), and have pre-existing relationship with customers
- Incumbents arguably are not interested in developing affordable, open networks

# Policy Questions

- What policies can be developed to ensure that the principles of good public infrastructure are enshrined in (wireless) broadband networks?
- Can the unrealized benefits of Wi-Fi (e.g. affordability, ease of deployment) be realized in broadband infrastructure? How?

# Actions for Better Public Infrastructure

- extend reach of fibre, deploy WiMAX (requires spectrum access)
- partner with community network providers to leverage municipal assets
- use open access provisions to get bandwidth
- extend open access to spectrum and cellular infrastructure
- exert efforts to influence conditions of service provision by incumbents

# www.cwirp.org



## Community Wireless Infrastructure Research Project

The Community Wireless Infrastructure Research Project (CWIRP) project brings together an interdisciplinary team of academic researchers and community and government partners to engage in in-depth case studies of public/community-based ICT initiatives in order to document and assess the various models, best practices and benefits of public ICT infrastructure provision in Canada.

### Community Partners

K-Net (NW Ontario)  
Wireless Nomad (Toronto)  
Ile Sans Fil (Montreal)  
Fred e-Zone (Fredericton)

Our case studies - K-Net (NW Ontario), Wireless Nomad (Toronto), Ile Sans Fil (Montreal) and Fred e-Zone (Fredericton) - represent leading and innovative examples of public/community-based ICT infrastructure deployment in remote and urban community settings in Canada.

The CWIRP project promises to deliver a series of studies that, in addition to enriching the academic research literature on community ICTs, will help foster more informed discussion and debate within communities and policy making circles about the nature, benefits and challenges of community ICT infrastructure.

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