

Municipal broadband networks: An idea whose time has come?

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Public Infrastructure

- Municipal broadband networks and community Wi-Fi should be considered as basic infrastructure for the 21st century
- Should this infrastructure be public?

Broadband Networks

- Various technical definitions
- Minimum: better than dial-up speeds
- Wireless broadband networks can provide DSL/cable modem connection speeds or faster

Types of Broadband Networks

- For-profit, commercial hotspots
- Community wireless network
- Municipal broadband networks
- Public municipal wireless broadband networks

For-Profit Wireless Hotspots



- Access on a fee-for-service basis
- Located in coffee shops, airports, train stations
- Operated by telecommunications companies (e.g. Bell, Telus, Rogers)

Community Wireless Networks



- Local organizations, typically run by volunteers
- Connect local citizens to local resources
- May or may not focus on the digital divide
- Offer free alternative to commercial internet service providers, where service exists

Municipal Broadband Networks

- Municipality provides fibre and/or wireless network
 - Various models for provision, municipality may or may not own network
- Network is used for and by municipal government

Municipal Wireless Network Uses

- Public safety, e.g. police communication
- Support for mobile workers
- Service provision, sensors, remote monitoring
- Benefits: improved service at decreased cost for municipalities

Public Municipal Wireless Networks

- Using wireless technologies, a municipality makes its existing network infrastructure available for public use, or develops infrastructure specifically for public use
- The municipality becomes an internet service provider
- This is where things get complicated...

Pre-Existing Service Level?

- If the public municipal wireless network offers the *only* source of broadband connectivity to citizens:
 - No competition, failure of market forces to serve the community, public infrastructure is the only option
- If there other providers already serving the community:
 - Public-private sector competition, public infrastructure overlays existing services

Public Municipal Wireless Offerings

- Should municipalities provide service to everyone in the community?
- Should municipalities focus on supplementing existing service by providing blanket coverage in public spaces?



Arguments Against Public Wireless

- Public sector should not compete with the private sector in the provision of telecommunications infrastructure
- Duplicating existing infrastructure at public expense, uncertain public support for such projects
- Municipalities don't have the expertise to be internet service providers

Lack of Demand/Limited Benefits

- Internet adoption rates are plateauing below 70% of population
- Consumers are resistant to change, locked into service bundles, uninterested in municipal services
- Primary beneficiaries would be heavy internet users, public networks may subsidize business activities
- Maybe this is the wrong platform for connectivity

Is it a Question of Timing?

- Will support for public broadband infrastructures increase over time?
 - Cost of infrastructure deployment expected to decline
 - Demand for public broadband expected to increase
 - Expectations of ubiquitous availability increase

What are the Economics?

- Information is hard to get
 - But often looking at the *marginal* costs of extending existing network for citizen access
- Analysis on Toronto and San Francisco cases suggest short payback periods, healthy ongoing revenue streams, reduced cost to citizens compared to existing commercial service providers

Why Offer Public Wireless?

- Affordability for citizens
- Serve un- or underserved areas and offer alternative to private sector service
- Community-wide coverage offers citizens convenience, flexibility, improved access for internet and telephony services

Why Offer Public Wireless?

- Openness and accountability in network development and administration, citizen input into network development
- Open networks with no restrictions on legal usage
 - Tiered pricing schemes based on bandwidth consumption
- Economic development, tourism, reputation

Desiderata For Public Wireless Networks

- Ubiquitous
- Affordable
- Reliable
- Healthy
- Secure
- Widely Useful
- Cost Effective
- Convenient and Ready-to-Hand
- Open
- Neutral and Non-Discriminatory
- High Quality
- Privacy Enabling
- Accessible and Usable
- Communicative Commons Enabling
- Civically oriented
- Accountable and Responsive