

Ubiquitous, Free* and Open Wireless Infrastructure is Good for (Mobile) Business:

The missed opportunity of Toronto Hydro Telecom's One Zone?



Andrew Clement

Community Wireless Infrastructure
Research Project (CWIRP.ca)

Faculty of Information Studies,
University of Toronto

ICMB 2007

Toronto, Ontario

July 11, 2007

Good Ubiquitous Free* and Open Wireless Infrastructure is Good for (Mobile) Business:

- Water, electricity, streets, sewage, sidewalks, street lighting,... are essential infrastructures for business
- Ideally we can take these for granted (especially for mobile businesses)
- Internet (IP) access is becoming like these earlier forms of infrastructure

Ubiquitous

Service coverage should include every household, business, organization, public space, tourist destination, and public transit corridor in the network's coverage area, within the limits of what is technically feasible. Wireless contributes to enlarging service coverage to areas that are not easily reachable by wireline, and enabling the development of new markets and services.

Affordable

To ensure universal access to vital infrastructure, the service should be available at rates affordable by nearly everyone (e.g. <\$10 per month). Ideally, the service should provide free access to basic broadband service (e.g. 1.5 Mbps, bi-directional as specified by National Broadband Task Force, 2001), with the possibility of fees for premium, higher speed services to support high bandwidth uses.

Open



INEC Declaration on Open Networks:

“3. Infrastructures should be ‘open’, meaning they are wholly open for any market entity to provide its services on a totally equal basis, free to compete with any other market entity. ... The open nature of such infrastructures extends to:

- **Technology:** the infrastructure must be compatible with other networks, whereas the technical protocols have been made available or known to all;
- **Functionality:** there should be no barriers or limitations in the connectivity between one end-user and another
- **Finance:** the costs of infrastructure usage should be non-discriminatory and stimulate fair competition
- **Organization:** all providers shall have equal opportunities to offer their services to their clients or prospective clients”

Desiderata for wireless infrastructure

1. **Ubiquitous/Universal**
2. **Affordable**
3. **Open**
4. **Reliable**
5. **Healthy**
6. **Secure**
7. **Widely Useful**
8. **Cost Effective**
9. **Convenient and Ready-to-Hand**
10. **Neutral and Non-Discriminatory**
11. **High Quality**
12. **Civil Liberties Respecting**
13. **Accessible and Usable**
14. **Communicative Commons Enabling**
15. **Civically oriented**
16. **Accountable and Responsive**

The Toronto opportunity

Toronto Hydro Telecom

- wholly-owned subsidiary of Toronto Hydro Corporation, which is 100 per cent owned by the City of Toronto
- Over 450 km fibre within Toronto
- Data centre operates 24/7/365, servicing some of Canada's largest financial and business customers



Source: onezone.ca

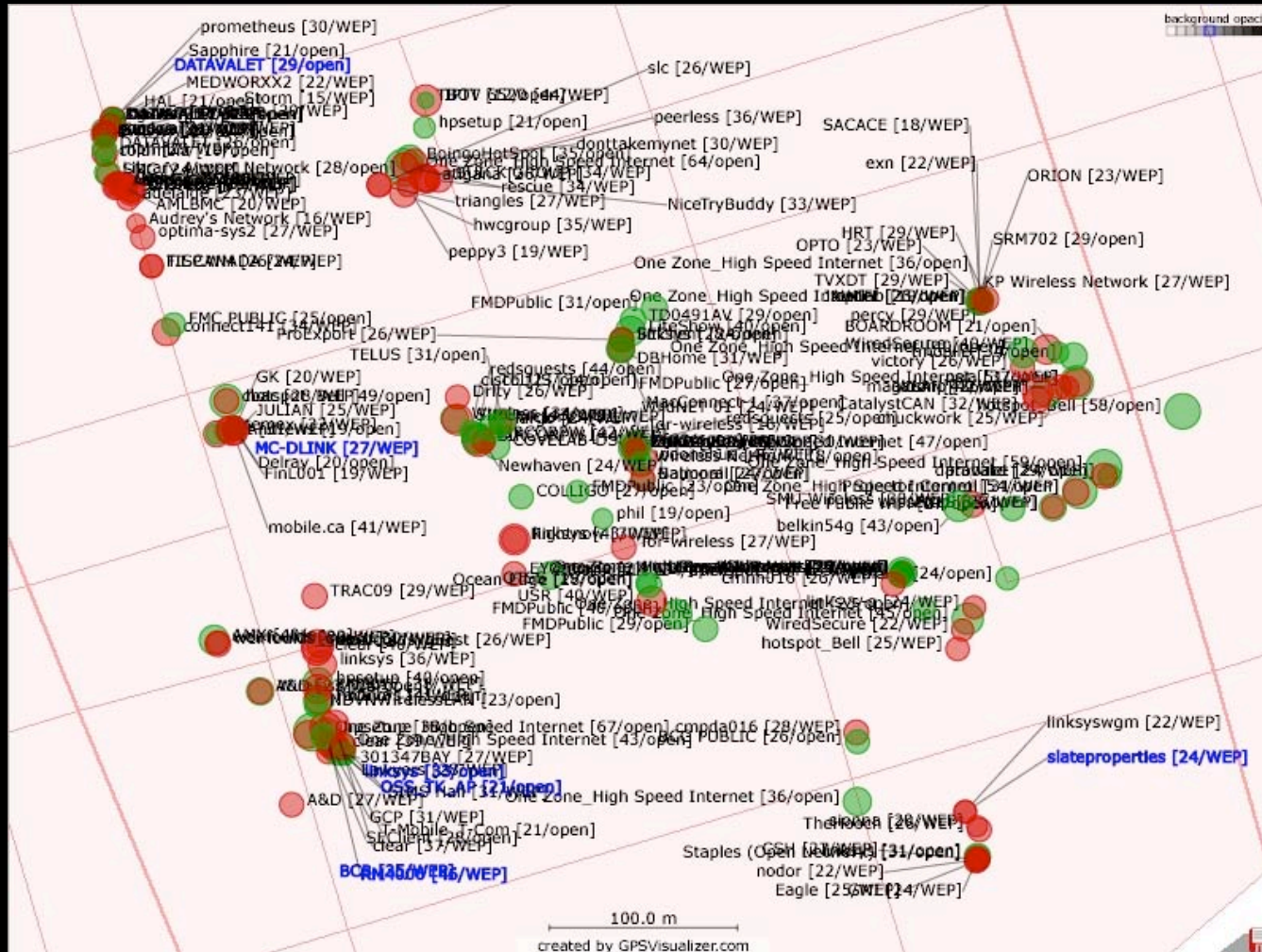
The Early Promise of OneZone™

- WiFi meshing + fibre
 - up to 7 Mbps bi-directional
 - ubiquitous coverage in zone
 - 30 foot building penetration
 - dual purpose for 'smart' power consumption metering
 - in home internet connection via house wiring
- Coverage
 - 2006 business core - 6 sq km
 - 2009?? entire city - 630 sq km
 - 1M households & businesses
 - 2+M residents



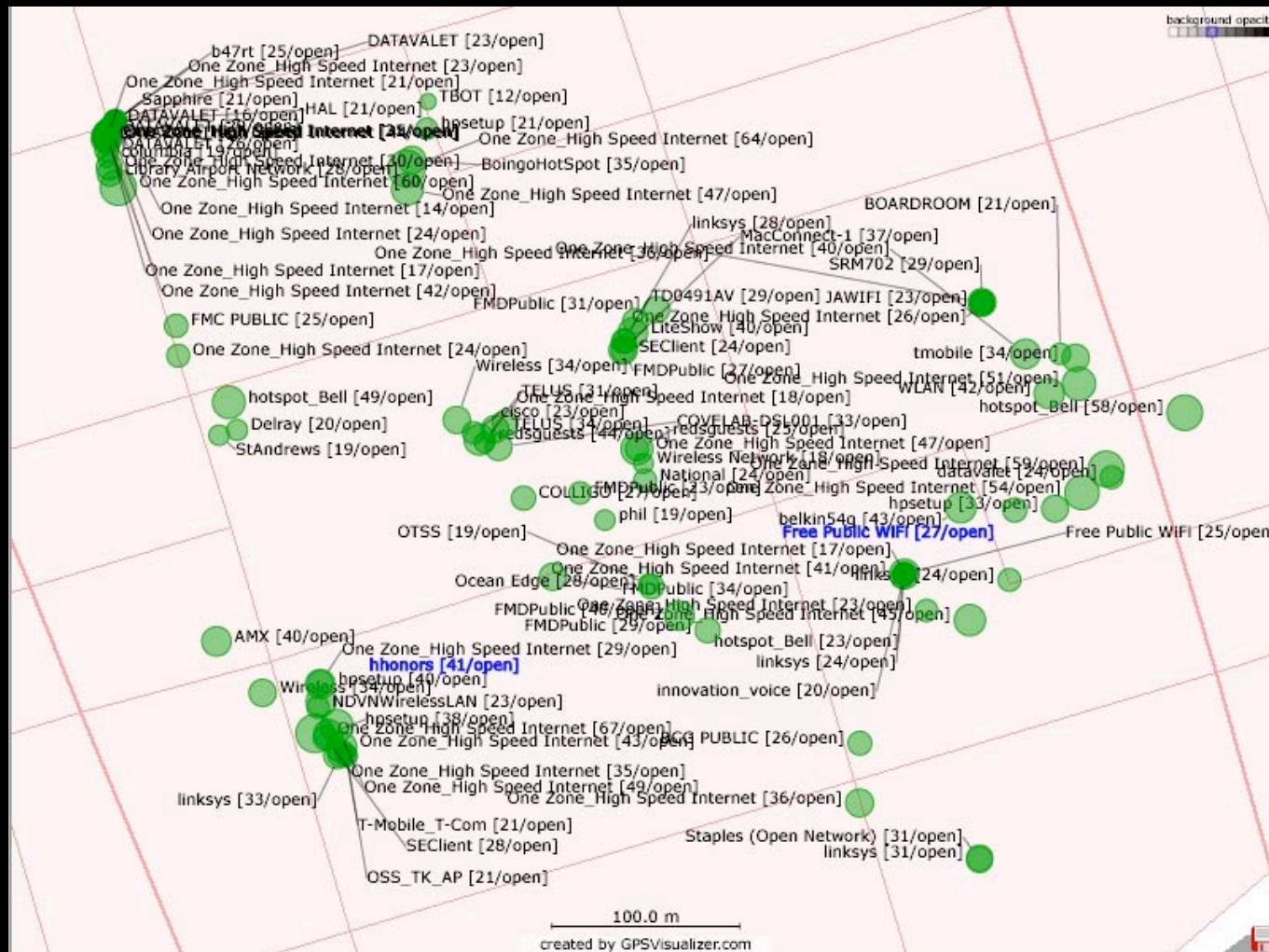
Sources: onezone.ca, Dave Dobbins presentations, April 27 & Sept. 6, 06

Wireless Networks and Sharing



285 named networks

Wireless Networks and Sharing



103 unencrypted networks identified

Wireless Networks and Sharing



33 networks detected

Commercial competitor (current model)

Capital investment:

- \$2M for first phase, \$56M full coverage

Pricing (after 6 month free period):

- \$29/mo (\$10/day, \$5/hour) +taxes **\$348/yr**

Main competitors:

- Bell Sympatico (DSL): Highspeed - **\$560/yr** \$46.95/mo
- Rogers (cable): Express **\$520/yr** \$43.95/mo

Payback period:

- ~1 year (with ~1% market share!)

Sources: onezone.ca, rogers.com, sympatico.ca, Dave Dobbins presentations, Apr 27 & Sep 6, 06

Public Utility (alternate model)

Costing assumptions: full city coverage, costs shared equally with the smart metering and a 3 year amortization

Capital investment (annualized): **\$10M** (full implementation)

Operating costs: **\$40-50M/yr**

Average annual household cost: **~\$50-60 per year (<\$5/mo)**

Funding options:

- property taxes or hydro bill

Benefits:

- Cost savings (**\$300-400/yr**) for 60% of households now with broadband
- Eased access for 25% of households now without internet access

Note: These rough calculations are our own. We have invited response from THT about these cost projections but they declined citing corporate policy not to comment on their business models

Sources: Technical details - onezone.ca, Dave Dobbins presentations, April 27, & Sept 6, 06.

Questions:

- Do mobile businesses need ubiquitous, affordable, open, ... wireless internet access? How important?

Yes, very!?

- Is ubiquitous, affordable, open, ... wireless internet access for mobile business better provided by a municipal utility or by commercial telecom companies?

Municipal utility!?