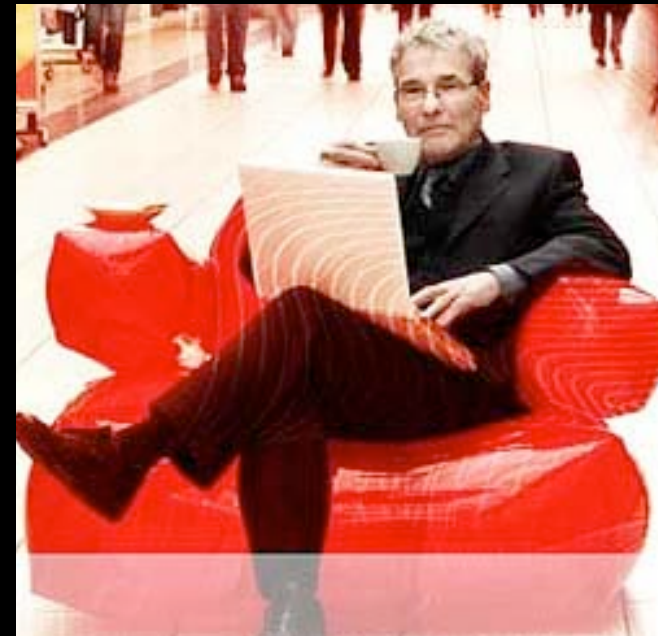


A Desiderata for Broadband Networks in the Public Interest



Amelia Bryne Potter Ryerson & York Universities

Andrew Clement University of Toronto

Community Wireless Infrastructure Research Project
(CWIRP.ca)

TPRC 2007

George Mason University

Arlington, VA

September 30, 2007

Overview

Why a desiderata?

- Provide an integrative assessment framework, during a period of uncertainty

Highlight 4 of 14 principles

- Universal + Ubiquitous
 - Affordable
 - Privacy enabling
 - Open
- Illustrated through exemplary cases

Further development

- Ground with experience

Why a desiderata?

Municipal broadband internet access debates:

- Espoused benefits
- Technological options
- Public <> private sector roles

Lacking so far:

- Infrastructure functional and performance characteristics

A comprehensive desiderata could facilitate:

- Formulating design goals
- Comparing of alternative models
- Assessing proposed and operational systems
- Shifting away from ideological debate

Developing the desiderata ...

Informed by:

- History of telecom and infrastructure policy and practice
- Technological developments (Fibre, WiFi, WiMax,..)
- Current debates/movements in many areas:
 - Digital divide, telecom de-re-regulation, net-neutrality, ICT's and development, civic engagement, community wifi networking,..

Focus on municipal broadband service for public use

- Role of wireless extensions to wireline backbones
- Public interest perspective
- Broad range of issues: synergies and tradeoffs

Desiderata for public interest broadband networks

1. Ubiquitous & Universal
2. Widely Useful
3. Usable
4. Accessible
5. Affordable
6. Reliable
7. High Quality
8. Healthy
9. Cost Effective
10. Accountable and Responsive
11. Secure
12. Privacy enabling
13. Open
14. Neutral and Non-Discriminatory
15.

PROJECT	Ubiquitous & Universal	Widely Useful	Usable	Accessible	Affordable	Reliable	High Quality	Healthy	Cost-Effective	Accountable & Responsive	Secure	Privacy Enabling	Open	Neutral & Non-Discriminatory
CWIRP														
Fredericton eZone	-	=		++	-	-		?	++		++			
Ile Sans Fil	=	=	=	++	?	?		+						
K-Net	++	++		++	+	=		++	+		-		+	
Toronto OneZone	=	+	=	=	++	++		?	-	+	=			
Wireless Nomad				+					+					
Large														
Philadelphia	++		+	+	+	=			+					
Portland, OR				++					-		-			
San Francisco	++			*		-					-			
Boston	++	++	+	++				+				++	++	
Taipei	++			++				?						
Small														
Chaska, MN	++					-								
Corpus Christi, TX		++							?			+	+	
Lompoc, CA	+		+	+	++		?							
Mountain View, CA	=			++							-			
Orlando, FL	-	-	-	-	-	-		?	-					
St. Cloud, FL	++			++										
Regional														
OneCommunity	-				+	+						+	+	
Rhode Island	++	+										+	+	
Tacoma Click!					++	++						++	++	
UTOPIA				+	++	++						++	++	

PROJECT	Ubiquitous & Universal	Widely Useful	Usable	Accessible	Affordable	Reliable	High Quality	Healthy	Cost-Effective	Accountable & Responsive	Secure	Privacy Enabling	Open	Neutral & Non-Discriminatory
CWIRP														
Fredericton eZone	-	=		++	-	-		?	++		++			
Ile Sans Fil	=	=	=	++	?	?		+						
K-Net	++	++		++	+	=		++	+		-		+	
Toronto OneZone	=	+	=	=	++	++		?	-	+	=			
Wireless Nomad				+					+					
Large														
Philadelphia	++		+	+	+	+	=		+					
Portland, OR				++					-					
San Francisco	++			*		-					-			
Boston	++	++	+	++				+			++	++		
Taipei	++			++				?						
Small														
Chaska, MN	++						-							
Corpus Christi, TX	++								?			+	+	
Lompoc, CA	+		+	+	++		?							
Mountain View, CA	=			++							-			
Orlando, FL	-	-	-	-	-	-		?	-					
St. Cloud, FL	++			++										
Regional														
OneCommunity	-				+	+						+	+	
Rhode Island	++	+										+	+	
Tacoma Click!					++	++						++	++	
UTOPIA				+	++	++						++	++	

PROJECT	Ubiquitous & Universal				Affordable			Privacy Enabling		Open	Neutral & Non-Discriminatory
	Widely Useful	Usable	Accessible	Reliable	High Quality	Healthy	Cost-Effective	Accountable & Responsive	Secure		
CWIRP											
Fredericton eZone	-	=		++	-	-	?	++		++	
Ile Sans Fil	=	=	=	++	?	?		+			
K-Net	++	++		++	+	=	++	+		-	+
Toronto OneZone	=	+	=	=	++	++	?	-	+	=	
Wireless Nomad				+				+			
Large											
Philadelphia	++		+	+	+	+	=		+		
Portland, OR					++				-		
San Francisco	++			*					-		
Boston	++	++	+	++				+		++	++
Taipei	++			++				?			
Small											
Chaska, MN	++										
Corpus Christi, TX			++					?		+	+
Lompoc, CA	+		+	+	++		?				
Mountain View, CA	=			++						-	
Orlando, FL	-	-	-	-	-	-	?	-			
St. Cloud, FL	++			++							

Ubiquitous & Universal

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. Ultimately, the service should reach every person when and where they need it.

Philadelphia, PA

- Wireless Philadelphia mission: Digital Inclusion
- City-wide coverage & digital inclusion rate (\$9.95/month)

Other exemplars: San Francisco, Taipei, Chaska, St. Cloud, Rhode Island

Affordable

In order to ensure universal access for all, including low income households, the service should be available at affordable rates (e.g. <\$10 per month) and preferably for free. Ideally, the service should provide free access to basic broadband service (e.g. 1.5 Mbps, bi-directional), with the possibility of fees for premium, higher speed services to support high bandwidth uses.

Portland, OR

- MetroFi free-to-the-user, ad-supported wireless network
- Trade-offs: affordability vs. responsiveness, quality, privacy, etc.

Other exemplars: Fredericton e-Zone, K-net, Wireless Nomad, Ile Sans Fil, Philadelphia, Boston, Taipei, Lompoc, St. Cloud ...

Privacy Enabling?

Operation of the service shall be fully compliant with applicable privacy laws and best practices. No personally identifying information shall be collected beyond that which is necessary to ensure access to and operation of the network. The service should enable both pseudonymous and anonymous use. Location-based and other services requiring additional personal information may be offered on a strictly voluntary, opt-in basis...

San Francisco, CA

- Coalition of privacy advocates rated RFP proposals on privacy
- Privacy concerns for the Earthlink/Google model
- Do these concerns go too far?

Privacy Enabling

EPIC, ACLU & EFF: Privacy Gold Standard

- What personal information is collected about users?
- How is this information used?
- How long is this information stored?
- With whom is this information shared?
- Is this information commercialized in any way?
- Is this information correlated to a specific user, device or location?
- Etc...

Open

The service should be designed to maximize openness at various levels (e.g. openness to a variety of access devices, the use of open source software, and all kinds of content, applications and services.)

Boston, MA

- Open access model, to promote competition
- Customized service plans to support emerging applications

Other exemplars: K-Net, UTOPIA, Corpus Christi, OneCommunity, Rhode Island, Tacoma Click!

Open

Boston Network Priority Items

- Ubiquitous
- Affordable, Scalable Pricing Models
- Interoperable: service is available throughout the city
- Open to extension by end users
- Open to developers for long-tail operations
- Uncensored: no site blocking
- Secure/Trusted
- Non-discrimination of applications and services

Wrap up

- Value of taking a broad, long-term infrastructural perspective
- Cities have a key role to play - as owner or promoter

Next steps:

- What is (really) working? - as experienced by users, developers, ... and beyond North America
- Use of framework in actual cases

Questions?

See: **CWIRP.ca**