






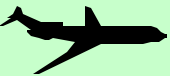


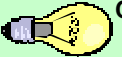







	TELE-MEDICINE	 RURAL	DISTANCE LEARNING	WORKFORCE TRAINING	VoIP	TVoIP Video on Demand	 SEAPORTS	VIDEO CONFERENCE	TELEWORK	UNIVERSAL ACCESS	CULTURE	 WATER WORKS	TOURISM	 Go to
E-BANKING	<div> <h1>BIG BROADBAND:</h1> <h2>Public Infrastructure</h2> <h2>or Private</h2>  </div>													QUALITY OF LIFE
E-COMMERCE														ECONOMIC DEVELOPMENT
 CHANCE														COMMUNITY CHESS 
E-GOVERNMENT														PUBLIC SAFETY
AIRPORTS 														ROADS & BRIDGES 
FIBER OPTICS														CHANCE 
WIRELESS, POWER LINE														PERSONAL PRIVACY
ELECTRIC CO 														BIG BROADBAND 
CABLE, DSL, SATELLITE														NATIONAL SECURITY
JUST  VISITING	ONLINE GAMES	DIGITAL PHOTOS	COMMUNITY CHESS 	DIGITAL MUSIC	WEB BROWSING	EMAIL CHAT VideoMAIL	RAILROADS 	TAXES 	DTV HDTV	BROADCAST TV	CELLULAR PHONE	BONDS 	POTS PHONE	Collect \$200 Salary As You Pass 

Wayne Caswell  
[www.cazitech.com/big\\_broadband.htm](http://www.cazitech.com/big_broadband.htm)  
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# TOPICS:

- 1) **Introductions:** Background, Bias, Objective
- 2) **BIG Broadband:** for demanding apps
- 3) **Broadband Status:** causes of Poor Ranking
- 4) **Affordability:** affects Take Rate
- 5) **Competition:** franchised Monopolies
- 6) **Profitability:** affects Deployment Rate
- 7) **Public Infrastructure:** Examples
- 8) **Powerful Lobbyists:** incumbents threatened
- 9) **Recommendations**



# INTRODUCTIONS:

## Background, Biases, Objectives

- **Private Citizen, Not Lobbyist** (advice welcome)
- **Strategic Visionary & Home Networking Pioneer**
  - VISION:** Consumers with Easy access to services and service providers with Equal access to consumers without worry about incumbents that control and limit access
- **30 year Retired IBMer**
  - Technical Marketing: Broadband, Wireless & Home Networks
  - Aspiring Consumer Advocate (need networking contacts)

AARP

Alliance for Public Technology

Assn. For Community Networking

Communities of the Future

Consumers Union

Electronic Freedom Foundation

FTTH Council

Intelligent Community Forum

Telework Consortium

Texas Legislature

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presentation, white paper, key messages, and reference links



# BIG BROADBAND: for Demanding Apps



## FCC Definition:

200+ Kbps in at least one direction

## Texas Definition:

1.5+ Mbps down and 768 Kbps up

## Objective:

100 Mbps to 100 M by 2010

100 Mbps by 2007, 1+ Gbps by 2010

APPLICATION	REQUIREMENT
Text	300 bps
Telephone	8-64 Kbps
Color Image	25- <b>2,500</b> Kbps
Digital Photos	<b>1,000-10,000</b> Kbps
Digital Music	<b>128-700</b> Kbps
<b>Video Conferencing</b>	<b>512-2,000</b> Kbps
MPEG-4 VoD (Internet)	<b>250-750</b> Kbps
MPEG-2 (DVD, Satellite)	<b>4,000-6,000</b> Kbps
HDTV (1080i MPEG-2)	<b>20,000</b> Kbps

## Downloading *The Matrix* (7.8 GB)

Delivery Method	Days	Hours	Minutes
Dial-up (56 Kbps)	13		
Pony Express	11 <sup>a</sup>		
Wireless (512 Kbps)	1.5 <sup>b</sup>		
DSL (640 Kbps)	1		
Cable (1.5 Mbps)		11.5	
T1 (1.54 Mbps)		11	
FedEx		10 <sup>c</sup>	
Ethernet (10 Mbps)		2	
Fast Ethernet (100 Mbps)			10.5
Gigabit Ethernet (1000 Mbps)			1

<sup>a</sup> New York to California: extrapolated from record delivery time of 7 days 17 hours, traveling approximately 2,000 miles (from St. Joseph, Missouri to Sacramento, CA)

<sup>b</sup> Maximum 150 users per node

<sup>c</sup> Express delivery from New York, NY 10005 to Beverly Hills, CA 90210



# BROADBAND STATUS:

## USA now ranked 20<sup>th</sup> and Falling

### Economic Development

- Technology Leadership
- Productivity / Innovation
- Workforce Training
- Jobs / Wages
- e-Commerce

### Quality of Life

- Entertainment
- Education
- Culture
- Telework
- Telemedicine
- e-Government
- “Digital Divide”

### National Health

- Crisis Management
- Financial Stability
- Social Stability
- Self-reliance
- Diplomacy
- Security

### FACTORS:

- **Competition**

- Powerful, Self-Serving Incumbents are Conservative & Inefficient
- More \$ spent on Lobbying / Litigation than R&D

- **Regulatory**

- Public Policy not keeping up with Technology
- Franchised Monopolies vs. Open Competition

- **Logistics**

- Deployment Costs don't justify investment without Monopoly Control



# AFFORDABILITY: and the Broadband Take Rate

 **South Korea**



**\$25/mo.**

**Voice, Data, Video**

 **Japan**



**\$23/mo.**

**Voice, Data, Video**

 **USA (me)**



**\$26**

**Voice (1 line)**

**\$45**

**Data (cable)**

**+ \$59**

**Digital Cable + DVR**

## FACTORS

 **Competition**


**\$130/mo.**

**Voice, Data, Video**

 **Regulatory**

**+ \$180/mo.**

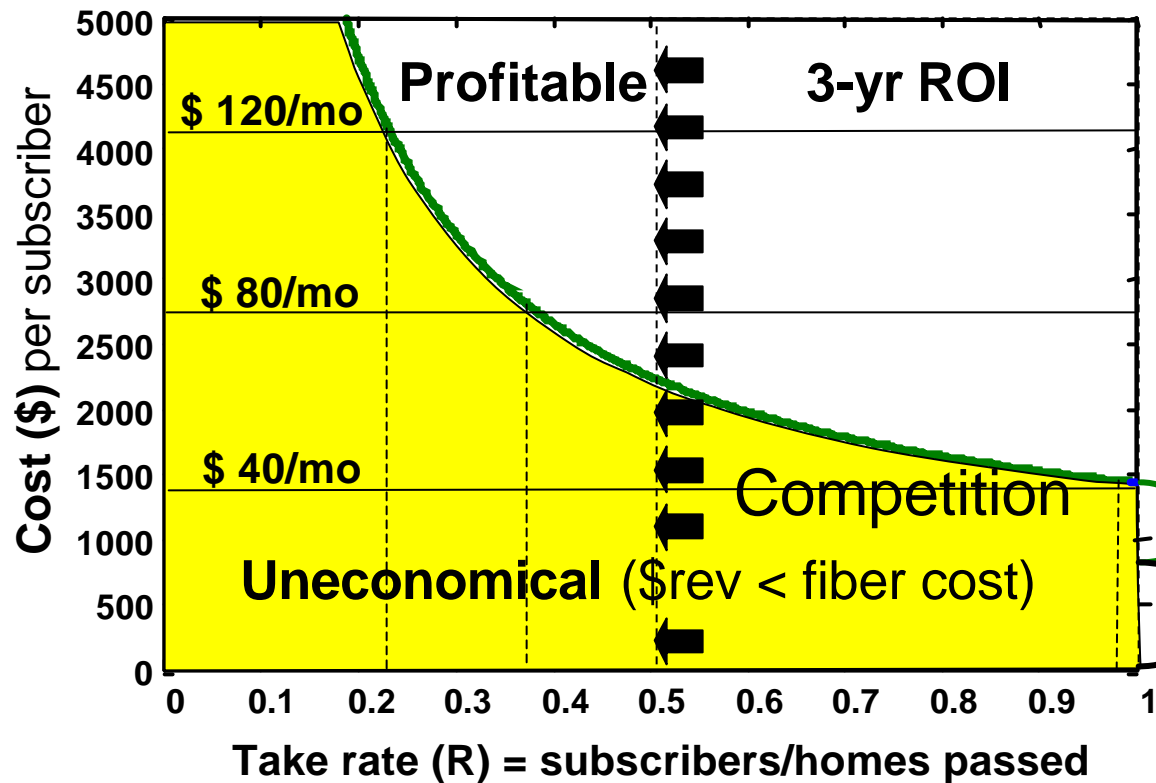
**Wireless**

 **Logistics**

**\$310 !!!**



# PROFITABILITY: and the Fiber Deployment Rate



Public companies  
need Monopoly  
Power for high RPU.

Variable = \$609/sub

Fixed = \$821/hhp

Average cost is lower with  
more subscribers.

Usually need about 35%  
subscriber rate at \$80/mo.

Source: Corning Cable Systems, 2003



# **PUBLIC INFRASTRUCTURE:**

## Broadband as Economic Imperative

“Broadband networks will be as critical to this new century as roads, canals, and transcontinental railroads were to the Nineteenth Century and the Interstate Highway System and basic [telephone] networks were to the Twentieth.”

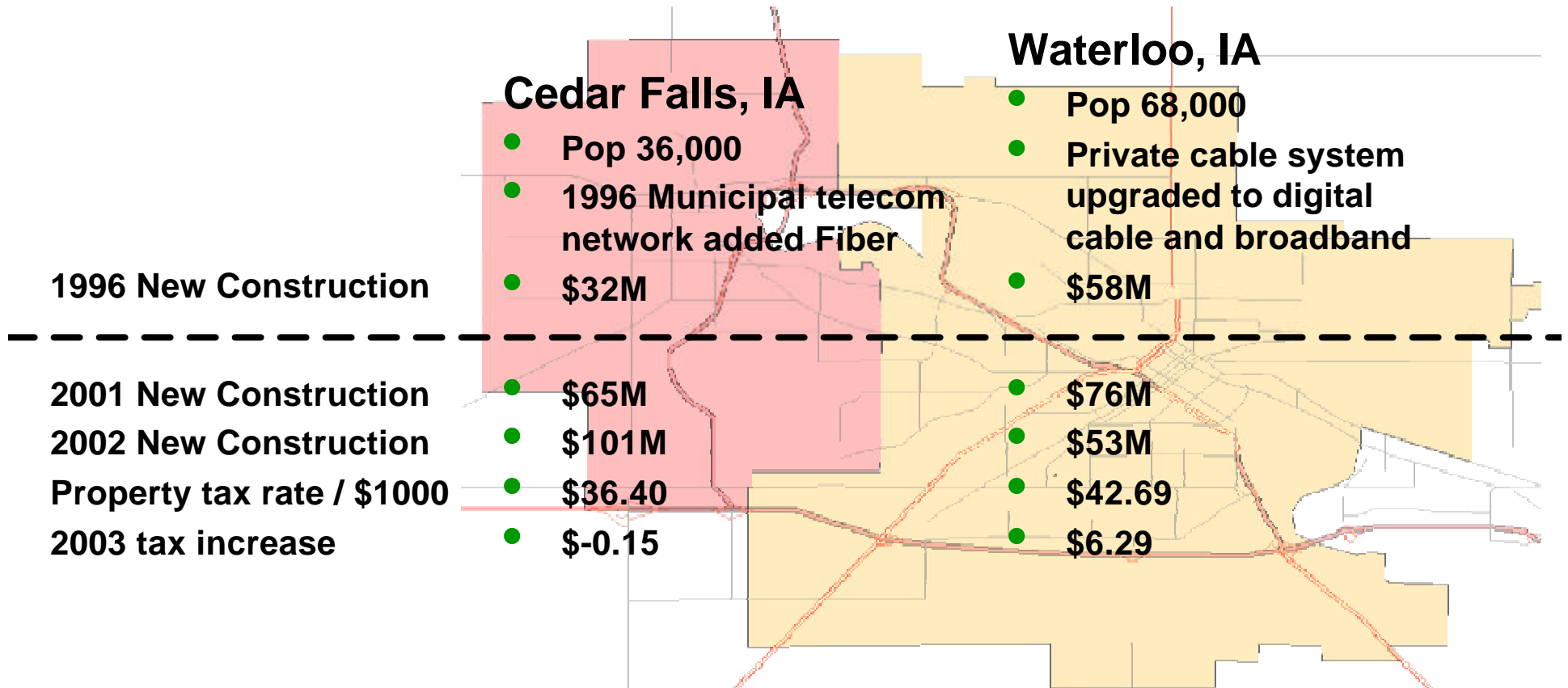
FCC Commissioner Michael Copps





# PUBLIC INFRASTRUCTURE:

## Community Adoption of New Technology



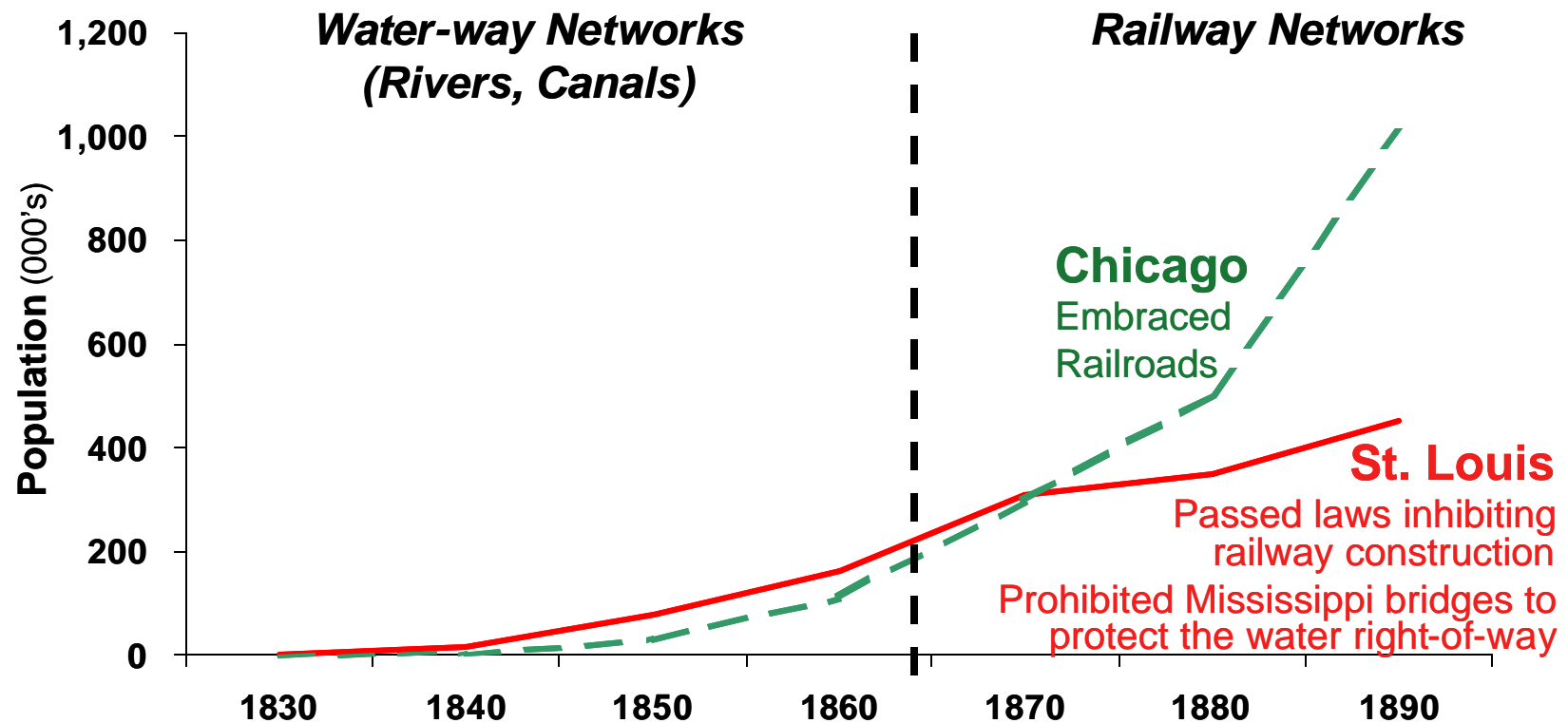
*"Fiber optics is the key to Waterloo's future growth. I believe it has hurt us economically not to be able to provide fiber optics to businesses locating in our city."*

– Waterloo Mayor John Roof



# PUBLIC INFRASTRUCTURE:

## Community Adoption of New Tech (cont.)



Source: Dean & Company, U.S. Census



# **PUBLIC INFRASTRUCTURE:**

## **Who Benefits vs. Who Pays?**

### **FIDUCIARY STAKEHOLDERS**

- Phone / TV / Radio Services
- Chambers of Commerce
- Convention / Visitors Bureaus
- Various Government Agencies
- Emergency Services
- Schools / Universities
- Transportation Services
- Disability Services
- Parks & Recreation
- City Utilities
- Amber Alert
- Animal Control
- Court System
- Museums / Galleries
- Insurance Companies
- Healthcare Providers
- Minority Groups

### **OTHER BENEFICIARIES**

- Employers
- Retailers / Service Companies
- Apartments / Hotels
- Banks / Financial
- Restaurants
- Grocers
- Realtors
- Barbers / Hair Salons
- Veterinary / Pet Care
- Theaters / Sports Arenas
- Travel: Air, Rail, Cruise
- Gardening / Landscape
- Clubs / Organizations
- Churches
- Childcare
- Gas Stations
- Postal / Shipping

**Many Business Models can Fund and Operate Public Networks**



# PUBLIC INFRASTRUCTURE:

## Who Else is Doing This?

- **California**  
(One Gigabit or Bust™ Initiative)
- **Kentucky**  
(Connect Kentucky project)
- Loudoun County, **VA**
- Tacoma, **WA**
- Salt Lake City, **UT**
- **Illinois** (Illinois Online)
- **Iowa** (Opportunity Iowa)
- Pittsburgh, **PA**
- Nashville, **TN**
- Jacksonville, **FL**
- Dalton, **GA**

[www.cenic.org](http://www.cenic.org) (**California's** One Gigabit or Bust)

[www.OpportunityIowa.org](http://www.OpportunityIowa.org)

[www.ConnectKentucky.org](http://www.ConnectKentucky.org)

[www.UTOPIAnet.org](http://www.UTOPIAnet.org) (Utah Telecommunications OPEN Infrastructure Agency)

[www.FTTHcouncil.org](http://www.FTTHcouncil.org) ... **lists more than 200 others**



# POWERFUL LOBBYISTS:

Disruptive Technologies vs. Old Business Models

- ILECs & Cable TV operators
- Record Labels & Film Studios
- Universities & Professors
- Car & Oil Companies
- PC Companies & Microsoft
- Some Cities & Landlords

Consumer Advocates have Far Less Funds & Access

**Beware of misinformation from organizations that conceal their hidden agendas and client lists. Examples include:**

- American Legislative Exchange Council (ALEC)
- Cato Institute
- Heartland Institute
- New Millennium Research Council
- Progress and Freedom Foundation



# RECOMMENDATIONS:

**George Bush:** “Universal, Affordable Access to Broadband (>200 Kbps) by 2007”

**Recommended:** “Universal Adoption of BIG Broadband

- 1) **Set More Aggressive Goal.**  
Universal adoption of Gigabit Internet access by 2010
- 2) **Redefine Universal Service Funds.**  
Broadband as Essential Infrastructure  
Fund Innovative Research & Test Beds
- 3) **Allow Wholesale Community Networks.**  
NOT Retail Content/Services  
Tiered RFP process, based on network cost
- 4) **Promote Open Network Architecture.**  
Encourages Competition
- 5) **Set Shorter Sunset.**  
Keep pace with IT sector.
- 6) **Give Consumers Equal Time.**  
They have less Funds & Access.
- 7) **Encourage Collaboration.**  
Public / Private Partnerships  
PUC as Best Practices Clearing house



# Texas House Bill 789:

## By Chairman Phil King, R-Weatherford

### Sec. 54.202. PROHIBITED MUNICIPAL SERVICES. ((( FROM TEXAS HOUSE BILL 789 )))

A municipality or municipally owned utility may not, directly or indirectly, on its own or with another entity, offer [for free or for sale] to the public:

- (1) a service for which a certificate is required;
- (2) a service as a network provider; or
- (3) any telecommunications or information service, without regard to the technology platform used to provide the service.

### Sec. 54.202. PROHIBITED MUNICIPAL SERVICES. ((( FROM RECENT SUBSTITUTE BILL)))

Adds cutout for city owned buildings, libraries and parks and allows cities to charge a nominal fee.

Adds cutout for offering broadband network not available to the public, for government functions.

Adds cutout for providing specific city services: emergency services, bill paying, permitting, meter reading, and constituent services.

Adds cutout for contract with 3rd party to offer broadband over BPL.

Specifically prohibits video or broadband services, except those grandfathered in by Jan/05.

Allows municipalities to engage in economic development activities as expressly authorized by the state. (Vague.)

Allows cities to accept nondiscriminatory ROW access fees to poles, towers, etc. for antennas.

Grandfathered leasing of city fiber facilities (if already leasing by Sep/05).



# Texas House Bill 1411:

By Representative Scott Campbell, San Angelo

## **Sec. 55.351. PLAN FOR STATEWIDE BROADBAND SERVICES.**

PUC to develop a [broadband plan](#), with help from other governmental organizations, that includes rural areas and ensures that money is used wisely. Review the plan status annually, and report to the legislature bi-annually, along with recommendations for regulatory changes.

## **Sec. 55.352. BROADBAND PILOT PROJECT.**

PUC to establish a [pilot](#) regional broadband network in a rural state planning region, and encourage innovation & competition through an open bidding process. Planning agency to report pilot progress through the PUC to the legislature.