

# **Fiber-to-the-Home**

*Today's true broadband solution*



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Fiber-to-the-Home Council

# Fiber-to-the-Home (FTTH)

## *Today's true broadband solution*

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- The FTTH Council
- FTTH history
- Architectures
- Applications
- Cost analysis of access technologies
- The FTTH Council's public policy platform
- Summary

# The FTTH Council

*Visit us on the web at [www.ftthcouncil.org](http://www.ftthcouncil.org)*

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- Mission:
  - Educate, promote & accelerate FTTH and the resulting quality-of-life enhancements
- Objectives:
  - Supply a consistent and accurate view of FTTH
  - Promote FTTH market development
  - Be recognized by the industry as the FTTH resource
- ***78 member companies***
- We represent the interests of those interested in FTTH
  - Our members are from every telecommunications group
  - We do not represent any one group

# The FTTH Council

## *Why are we here today*

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- We are concerned that the emergence of FTTH is being eclipsed by the heated debate over current-generation broadband
- FTTH is the logical broadband technology for consumers
  - FTTH is cost effective
  - FTTH is mature
  - FTTH is happening
  - FTTH is necessary, DSL and HFC can not scale for the future
- We have a vision of how to accelerate the realization of the life-enhancing benefits FTTH enables by promoting facilities-based FTTH competition

# FTTH history

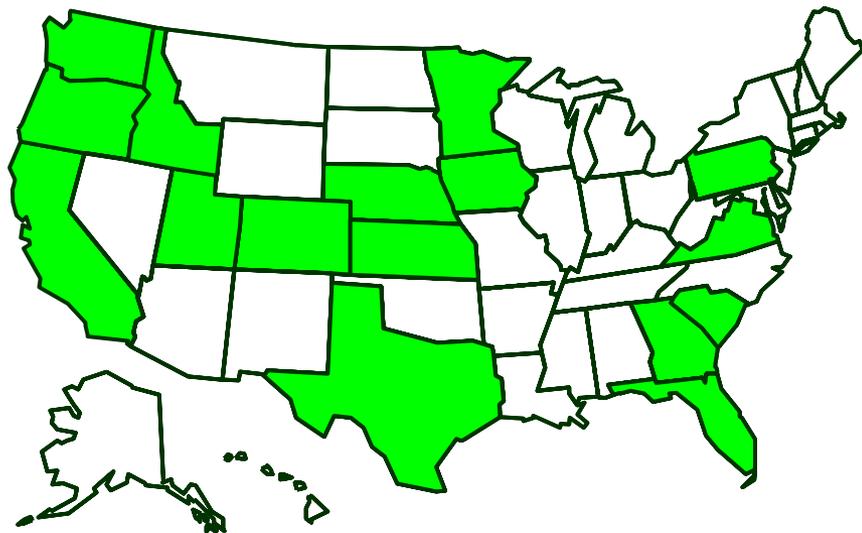
## ***Trials in the 80's led to real deployments in the 90's***

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- FTTH has been contemplated since fiber was first installed in telecommunications networks in the early 80's
- Several FTTH trials were conducted in the 80's
- However, it wasn't until the late 90's that FTTH really began to accelerate. Largely due to improvements in:
  - Electronics
  - Splicing techniques
  - Construction methods
  - Consumer applications
  - Passive component design
  - Consumer broadband demand

# FTTH history

## List of 'US Optical Fiber Communities'\*



Alberta, MN  
Almena, KS  
Avery Ranch, TX  
Bear Creak, ID  
Bristol, VA  
Burleson, TX  
Cambridge, IA

Canyon Gate, TX  
Chelan County, WA  
Chokio, MN  
Colorado City, CO  
Crystal Falls, TX  
Daniel Island, SC  
Douglas County, WA

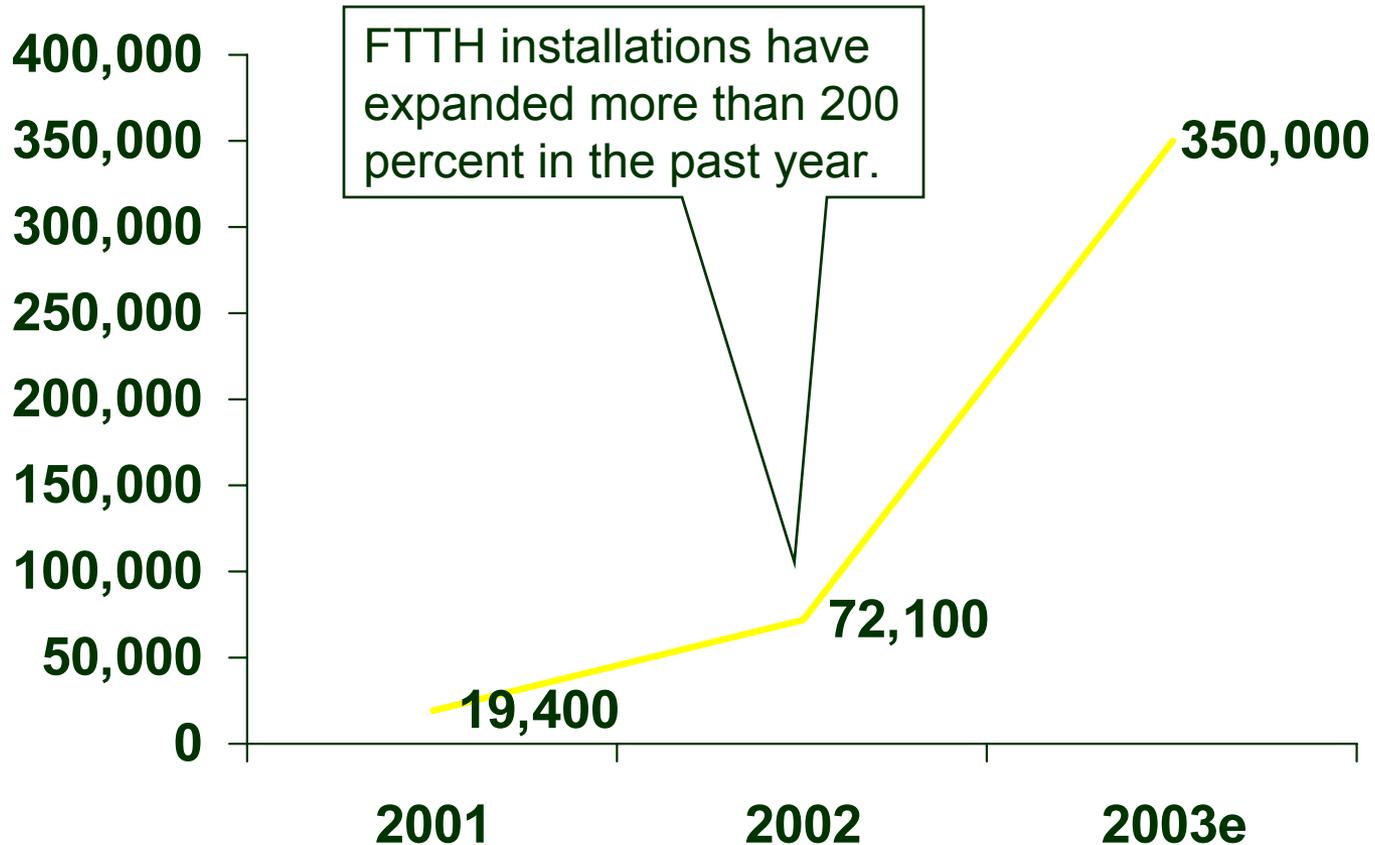
Dunwoody, GA  
East Ottertail, MN  
Evermore, MN  
Grand Lake, TX  
Grant County, WA  
Blair, NE  
Guthrie Center, IA  
Hill City, KS  
North Richland, TX  
Huxely, IA  
Issaquah Highlands, WA  
Kamas, UT  
Kutztown, PA  
Lakes on Eldridge, TX  
Lansdowne, VA  
Laredo, TX  
Daytona Beach, FL

Mason County, WA  
Morris, MN  
Houston, TX (x3)  
Norton, KS  
Osborne, KS  
Palo Alto, CA  
Poppy Meadows, CA  
Prove, UT  
Roseville, CA  
Rye, CO  
Sacramento, CA  
Bluffton, SC  
Slater, IA  
Broadlands, VA  
Albertville, MN  
Woodburn, OR

\* many more in construction and pre-construction phases

# FTTH history

## *FTTH homes passed in US and Canada*



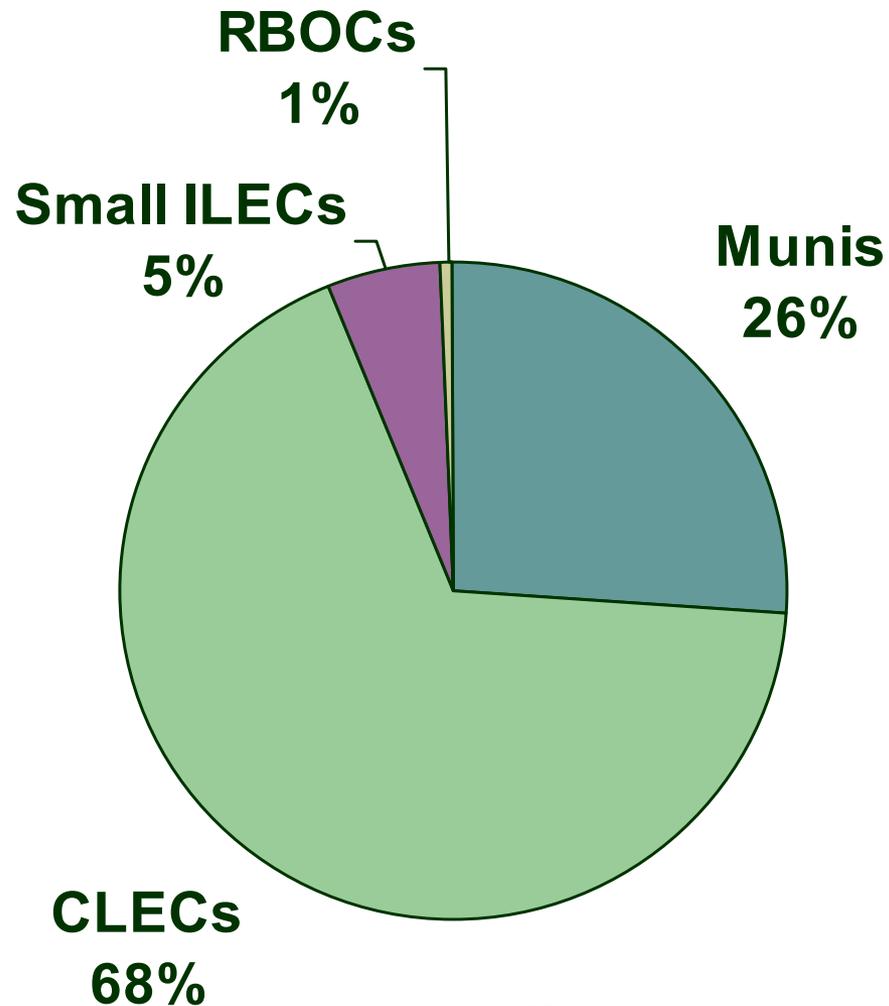
Source: Render, Vanderslice & Associates

FCC Meeting (01/07/02)



# FTTH history

## *Impact of UNE regulation on homes passed*

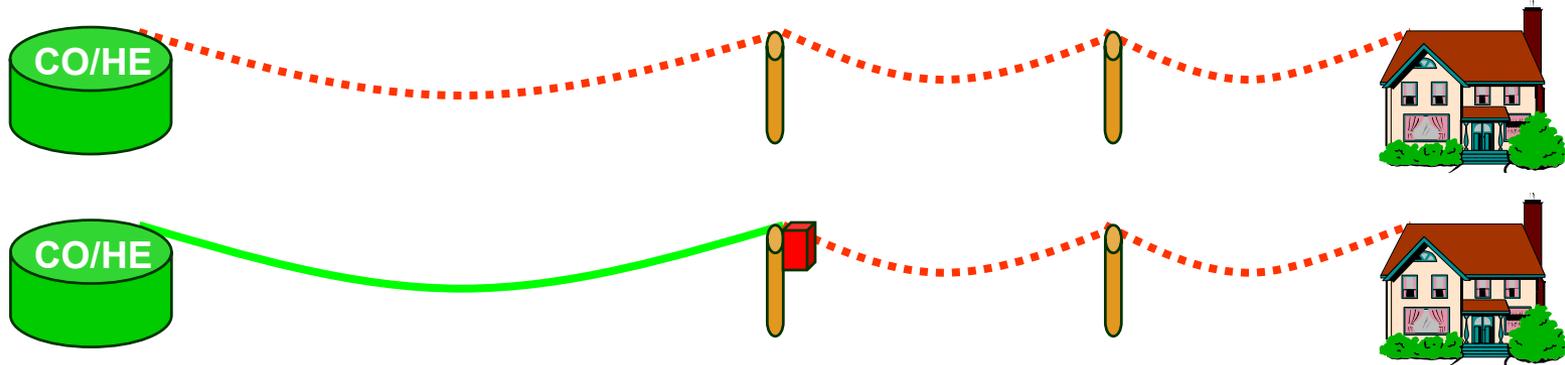


FCC Meeting (01/07/02)

# FTTH Architectures

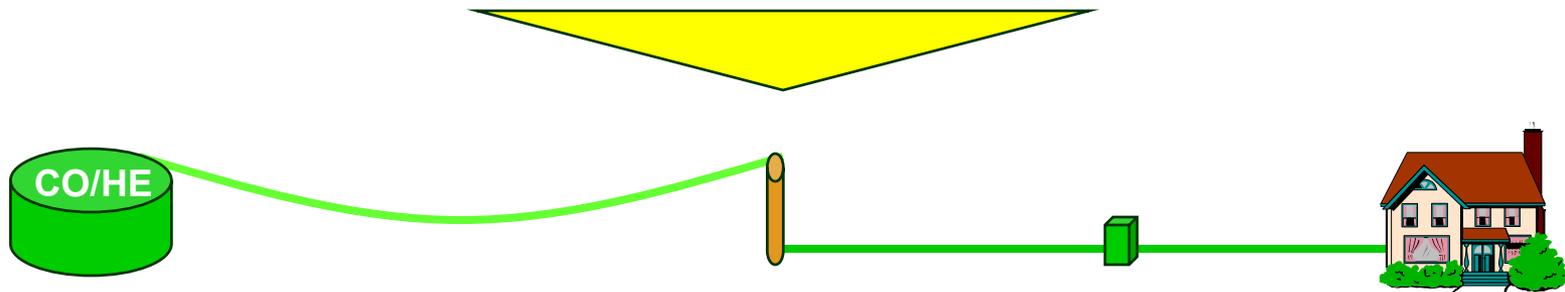
## What is FTTH?

..... Copper  
———— Fiber



Current or old generation, optimized for voice

24 kbps - 1.5 mbps



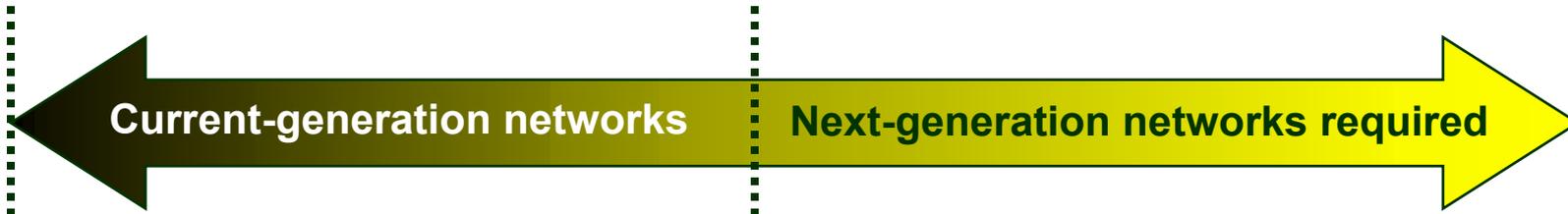
Next generation, optimized for voice, video, and data

19 mbps - 1 Gbps +

# Constrained applications

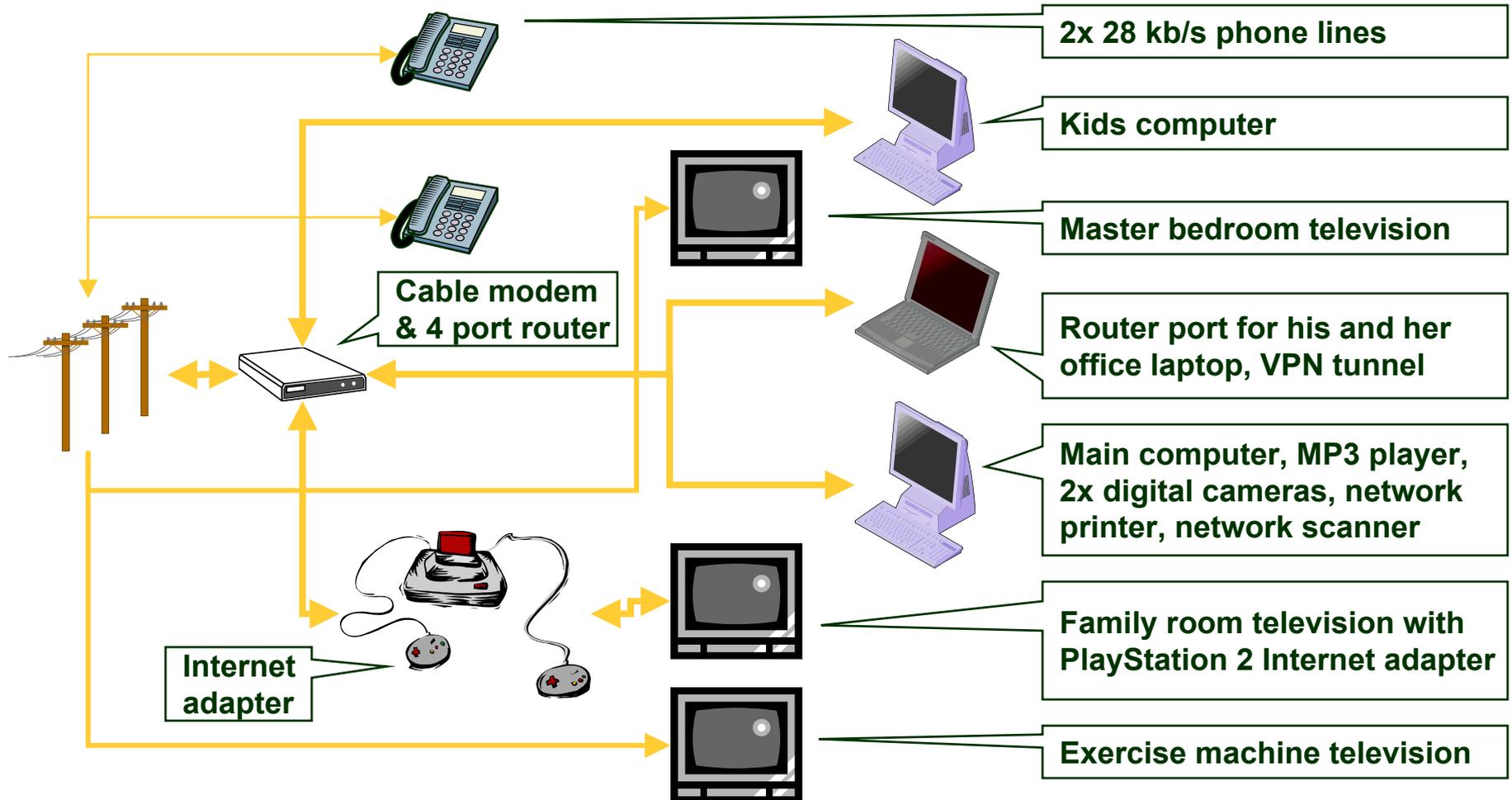
*Applications today are limited by bandwidth*

Year	2001	2002-2003	2004-2005	2006
Bandwidth	56 kbps - 1 Mbps	400 kbps - 2 Mbps	2 - 80 Mbps	80 Mbps - 1 Gbps
Applications	E-mail Static we browsing Bulletin boards Bill payment Online auctions Instant messaging	VOIP File sharing Data warehousing Supply chain mgt Video conferencing Online gaming	VOD Interactive TV 3-D multi-player games HD Television	E books Tele-medicine Distance learning Interactive shopping



# Consumers will use bandwidth

## *The killer application is the application aggregation*



# Cost analysis of access technologies

## Overview of methodology

<u>Technology</u>	<u>Services</u>	Ratio of revenue & cost/HP with DSL as base case (1.00)
<ul style="list-style-type: none"> <li>• <b>ADSL</b> FF-NGDLC BW: 1.5 mbps</li> </ul>	Voice (w/LD) Data	<b>1.00</b>
<ul style="list-style-type: none"> <li>• <b>Cable modem</b> 500 home node BW: &lt; 1 mbps</li> </ul>	Data Video	<b>0.87</b>
<ul style="list-style-type: none"> <li>• <b>APON</b> 32 home PON BW: 19.5 mbps</li> </ul>	Voice (w/LD) Data Video VOD Special Future	<b>1.08</b>

Source: Corning Optical Fiber, New buried construction, TR for voice: 30%, data: 20%, video: 30, VOD: 15%, special: 5%, includes active electronics, OSP, and OSP installation costs, excludes cost of CO/HE facility, DSL - NGDLC serving 335 subs, all architectures built for 5000 subs, lot frontage 100 ft x 140 ft w/ 20 ft street widths

# The FTTH Council's Public Policy Platform

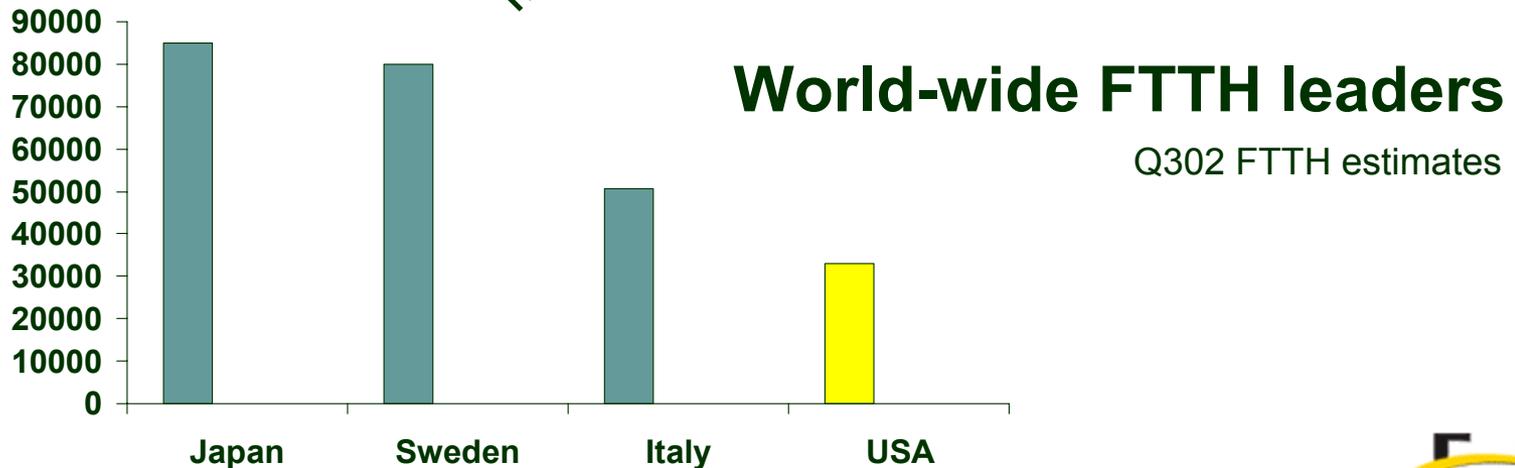
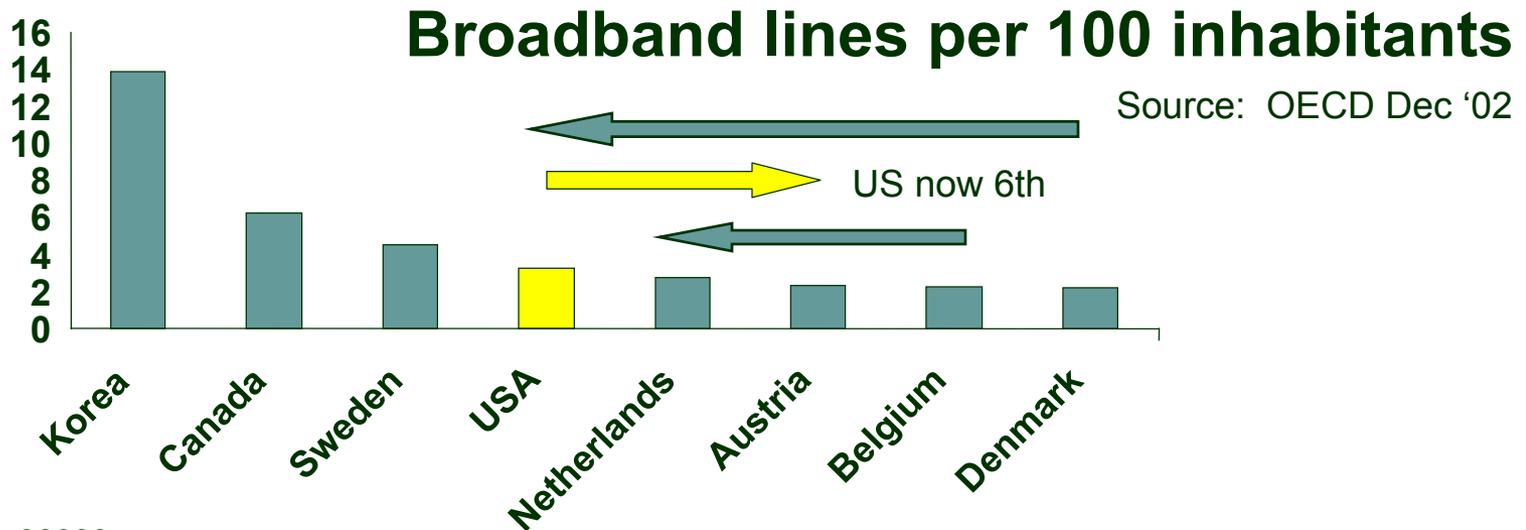
## *Four key points*

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- 1 The US needs a national broadband policy
- 2 FTTH networks should be free of UNE regulation
- 3 Tax incentives are needed to accelerate FTTH
- 4 Any entity should have the right to deploy FTTH

# The FTTH Council's public policy platform

## *The US needs a national broadband policy*



# The FTTH Council's public policy platform

## *FTTH networks should be free from UNE regulation*

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### Recommendations --

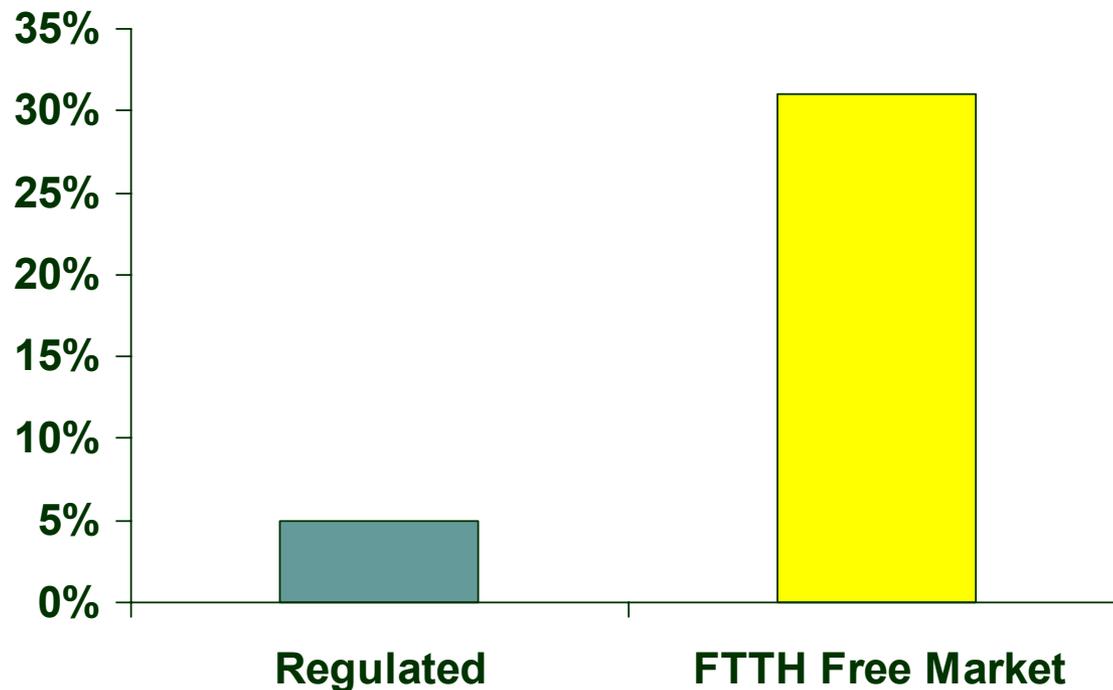
- Relieve FTTH from the unbundling requirement in Section 251(c)(3)
- Pre-empt state authority to change the unbundling requirements
- Regulate voice service, but deregulate broadband service

# FTTH networks should be free of regulation

## *CSMG findings were alarming*

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- CSMG found our proposal to free FTTH from UNE regulation would create a NPV positive business case to bring FTTH to 31% of all households



Source: CSMG *Assessing the Impact of Regulation on Deployment of FTTH*, April 5 '02 FCC Meeting (01/07/02)



# The FTTH Council's public policy platform

## *FTTH networks should be free from UNE regulation*

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Other reasons to relieve FTTH from unbundling:

- Can't unbundle a facility that doesn't exist
- All carriers are in the same position to compete
- Will enhance competition between ILECs and CATV
- Will increase investment 6X according to CSMG study

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- FTTH is the logical broadband technology for consumers
  - FTTH is cost effective
  - FTTH is mature
  - FTTH is happening
  - FTTH is necessary, DSL and HFC can not scale for the future
- Our proposals will enable and accelerate facilities-based, true broadband competition
  - The US needs a national broadband policy
  - FTTH networks should be free from unbundling
  - Tax incentives will accelerate FTTH
  - Any entity should have the right to deploy FTTH

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