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Telecommunications
Council*

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Broadband Development in the Asia-Pacific

Can the U.S. Catch Up?

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Global Broadband Subscribers Exceed 444m

Broadband Top 10					
Country	2008Q2	2009Q1	2009Q2	Growth	Growth
	Total	Total	Total	in Quarter	over 12 months
China					%
USA					%
Japan					
Germany					%
France					%
UK					
South Korea					
Italy					%
Brazil	8,490,400	10,065,200	10,469,755	4.02%	23.31%
Canada	9,005,181	9,527,500	9,618,107	0.95%	6.81%

Broadband Subscriptions in Asia
182m by end 2009
(billings = \$45b)

212.6m by end 2010
(billings est. = \$54b)

Source: Compiled by Point Topic for the Broadband Forum



US is 15th in Broadband Penetration Among OECD Countries

OECD Broadband statistics [oecd.org/sti/ict/broadband]

1d. OECD Broadband subscribers per 100 inhabitants, by technology, December 2008

Rank		DSL	Cable	Fibre/LAN	Other	Total	Total subscribers
1	Denmark	22.6	9.9	3.6	1.1	37.2	2 021 404
2	Netherlands	22.2	10.1	0.0	0.0	32.3	2 000 000
3	Norway	21.8	0.0	0.0	0.0	21.8	1 000 000
4	Sweden	21.7	0.0	0.0	0.0	21.7	1 000 000
5	Iceland	21.6	0.0	0.0	0.0	21.6	1 000 000
6	South Korea	21.5	0.0	0.0	0.0	21.5	1 000 000
7	Switzerland	21.4	0.0	0.0	0.0	21.4	1 000 000
8	Finland	21.3	0.0	0.0	0.0	21.3	1 000 000
9	Luxembourg	21.2	0.0	0.0	0.0	21.2	1 000 000
10	Canada	13.0	15.6	0.0	0.4	29.0	9 577 648
11	United Kingdom	22.4	6.1	0.0	0.1	28.5	17 275 660
12	Belgium	16.4	11.4	0.0	0.3	28.1	2 962 450
13	France	26.6	1.4	0.1	0.0	28.0	17 725 000
14	Germany	25.4	1.9	0.0	0.0	27.4	22 532 000
15	United States	10.3	13.7	1.0	0.9	25.8	77 437 868
16	Australia	10.2	15.6	0.0	0.0	25.8	77 437 868
17	Japan	10.1	15.6	0.0	0.0	25.7	77 437 868
18	Netherlands	10.0	15.6	0.0	0.0	25.6	77 437 868
19	Australia	10.0	15.6	0.0	0.0	25.6	77 437 868
20	Spain	10.0	15.6	0.0	0.0	25.6	77 437 868
21	Ireland	10.0	15.6	0.0	0.0	25.6	77 437 868
22	Italy	10.0	15.6	0.0	0.0	25.6	77 437 868
23	Czechia	10.0	15.6	0.0	0.0	25.6	77 437 868
24	Hungary	10.0	15.6	0.0	0.0	25.6	77 437 868
25	Poland	10.0	15.6	0.0	0.0	25.6	77 437 868
26	Greece	10.0	15.6	0.0	0.0	25.6	77 437 868
27	Slovakia	10.0	15.6	0.0	0.0	25.6	77 437 868
28	Portugal	10.0	15.6	0.0	0.0	25.6	77 437 868
29	Turkey	10.0	15.6	0.0	0.0	25.6	77 437 868
30	Mexico	10.0	15.6	0.0	0.0	25.6	77 437 868
	OECD average	10.0	15.6	0.0	0.0	25.6	77 437 868

Nearly one in five broadband connections in the US don't qualify as broadband according to the FCC's current definition.

Source: SpeedMatters.org

Between 2007 and 2009, the average download speed in the United States has increased by only 1.6 megabits per second (mbps), from 3.5 mbps in 2007 to 5.1 mbps in 2009. At this rate, it will take the United States 15 years to catch up with current Internet speeds in South Korea.

Source: SpeedMatters.org



Average Advertised Download Speed

Rank	Country	Speed (mbps)
1	Japan	93.7
2	France	44.2
3	Korea	43.3
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.		
.		
19	United States	8.9

Median Download speed:

Japan	63.0 mbps
United States	2.3 mbps

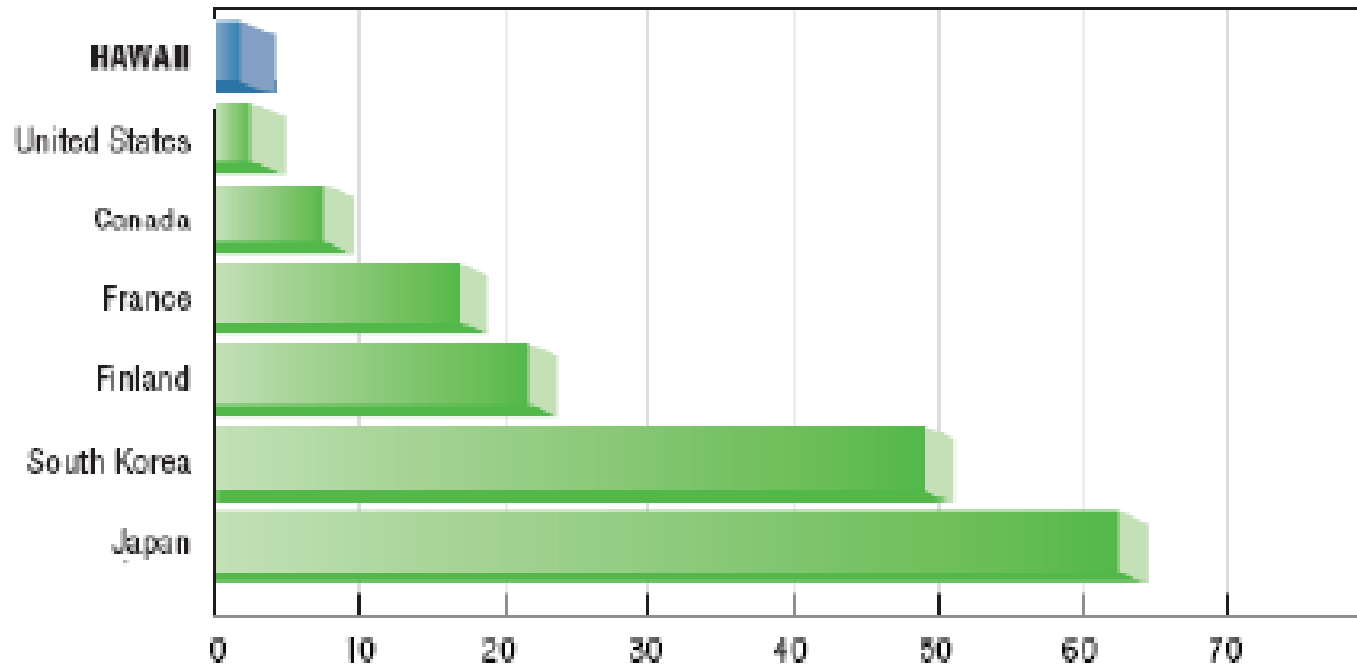
Source: OECD; SpeedMatters.org



The New Aloha Snail Mail

Hawaii Quick Stats

Median Download Speeds (megabits per second)

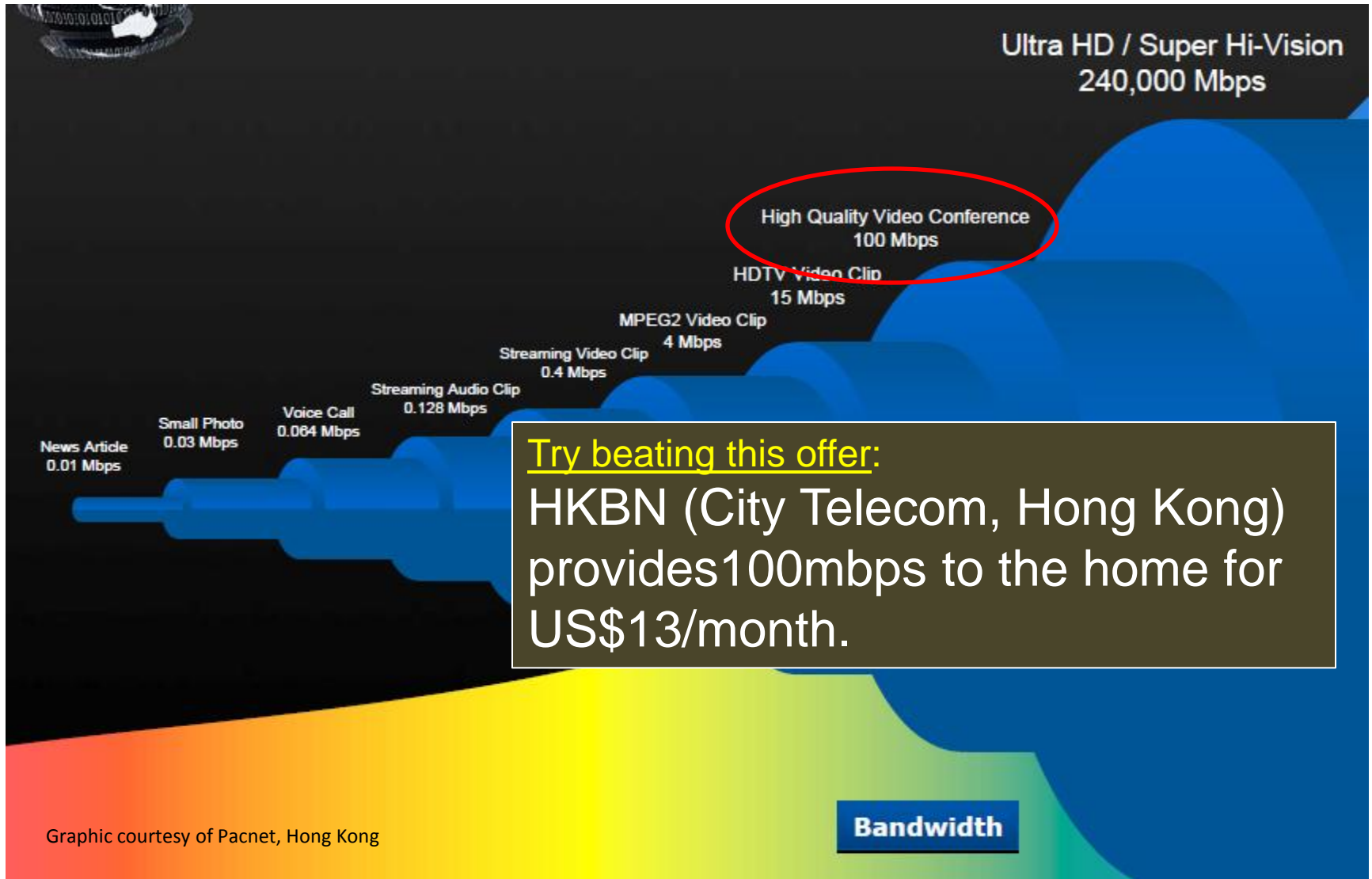


The median upload speed in Hawaii is 424 kbps.

Source: Hawaii Broadband Task Force Report 2008; OECD statistics ; SpeedMatters.org

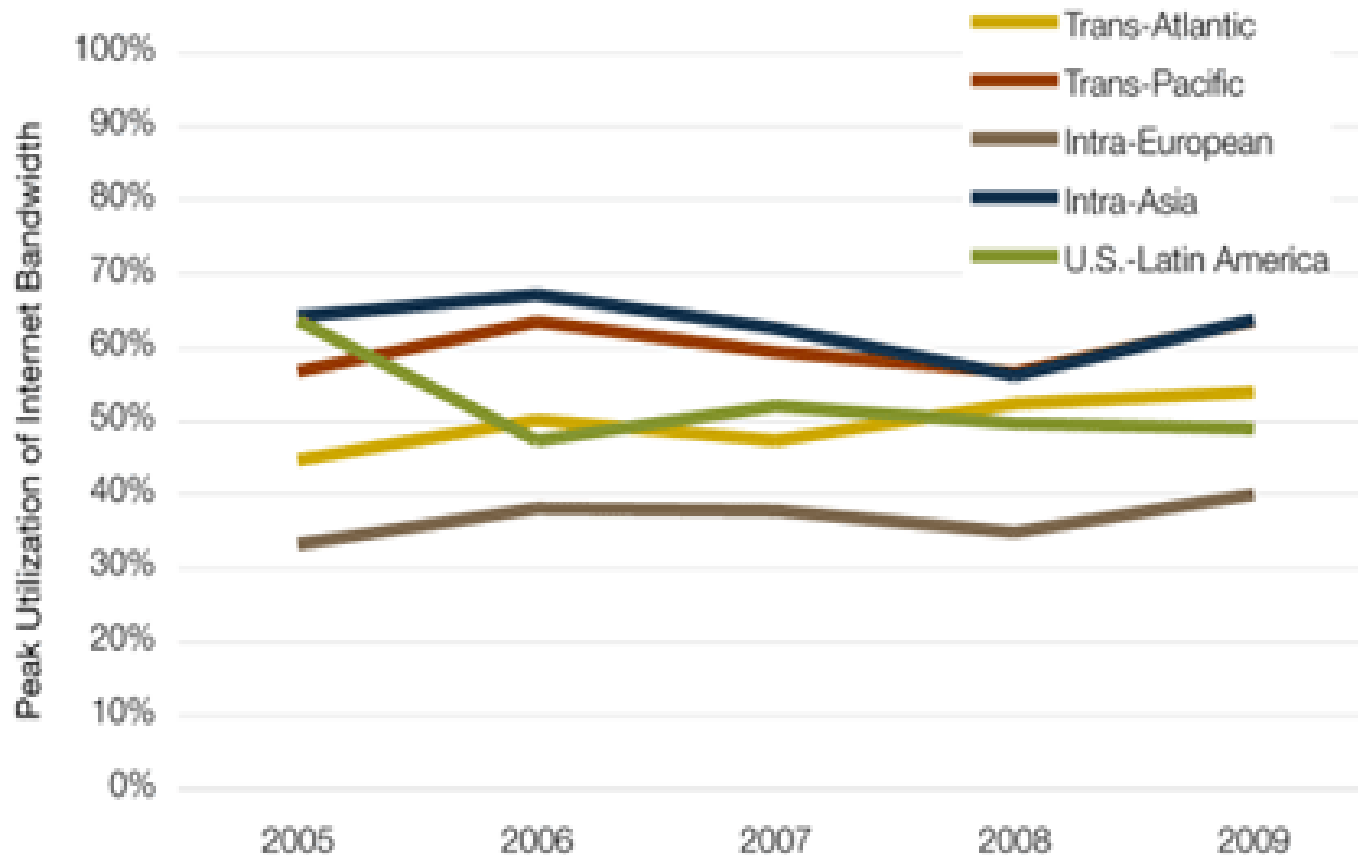


Demand for Broadband: Try squeezing that down a phone line...



Internet Traffic Growth Not Slowed by Recession

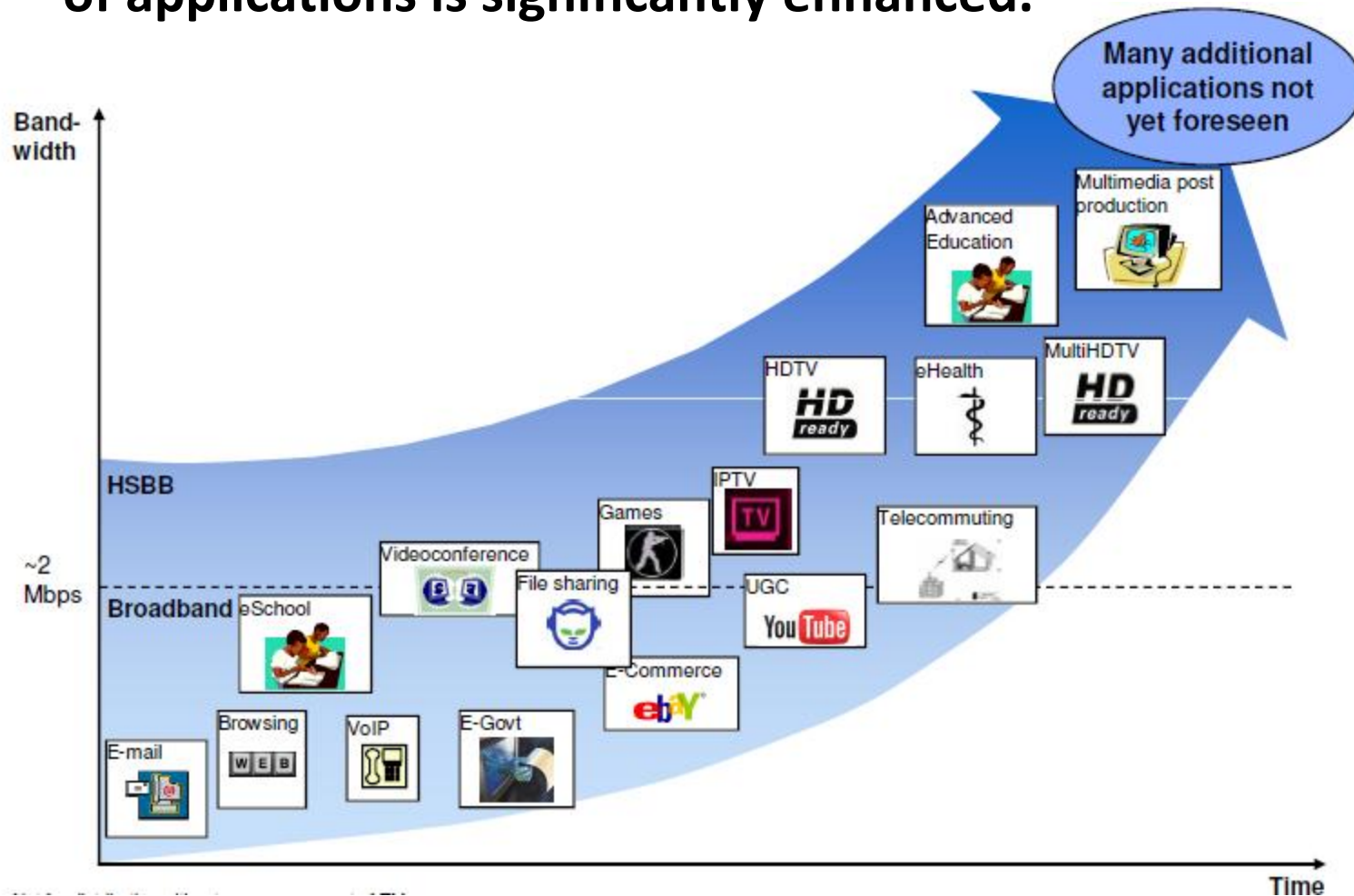
Global Peak Utilization Rates by Route, 2005-2009



Source: Telegeography Research, Inc.



As bandwidth increases, the range and versatility of applications is significantly enhanced.

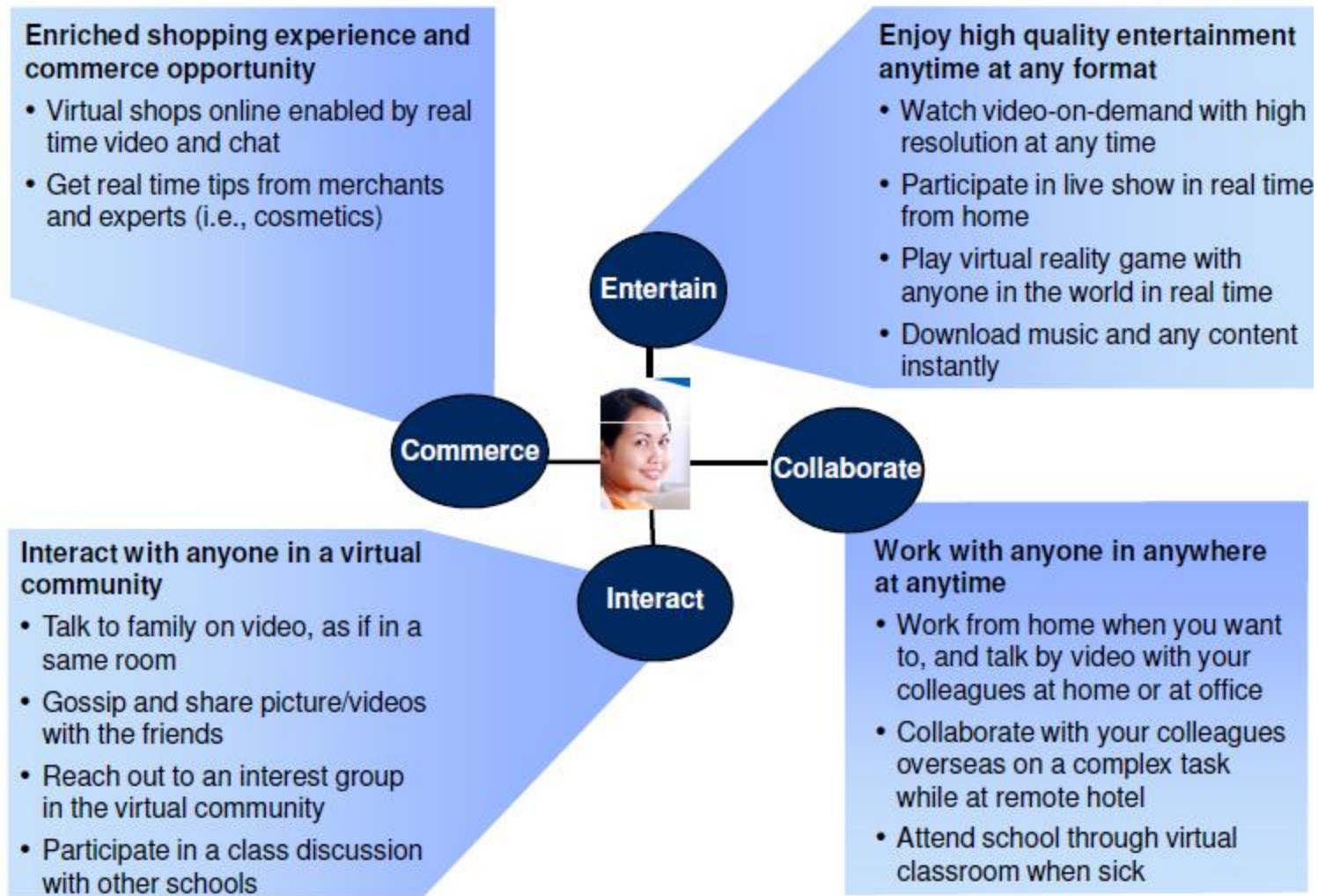


Graphic courtesy of Telekom Malaysia



Promises, promises: What's really different today?

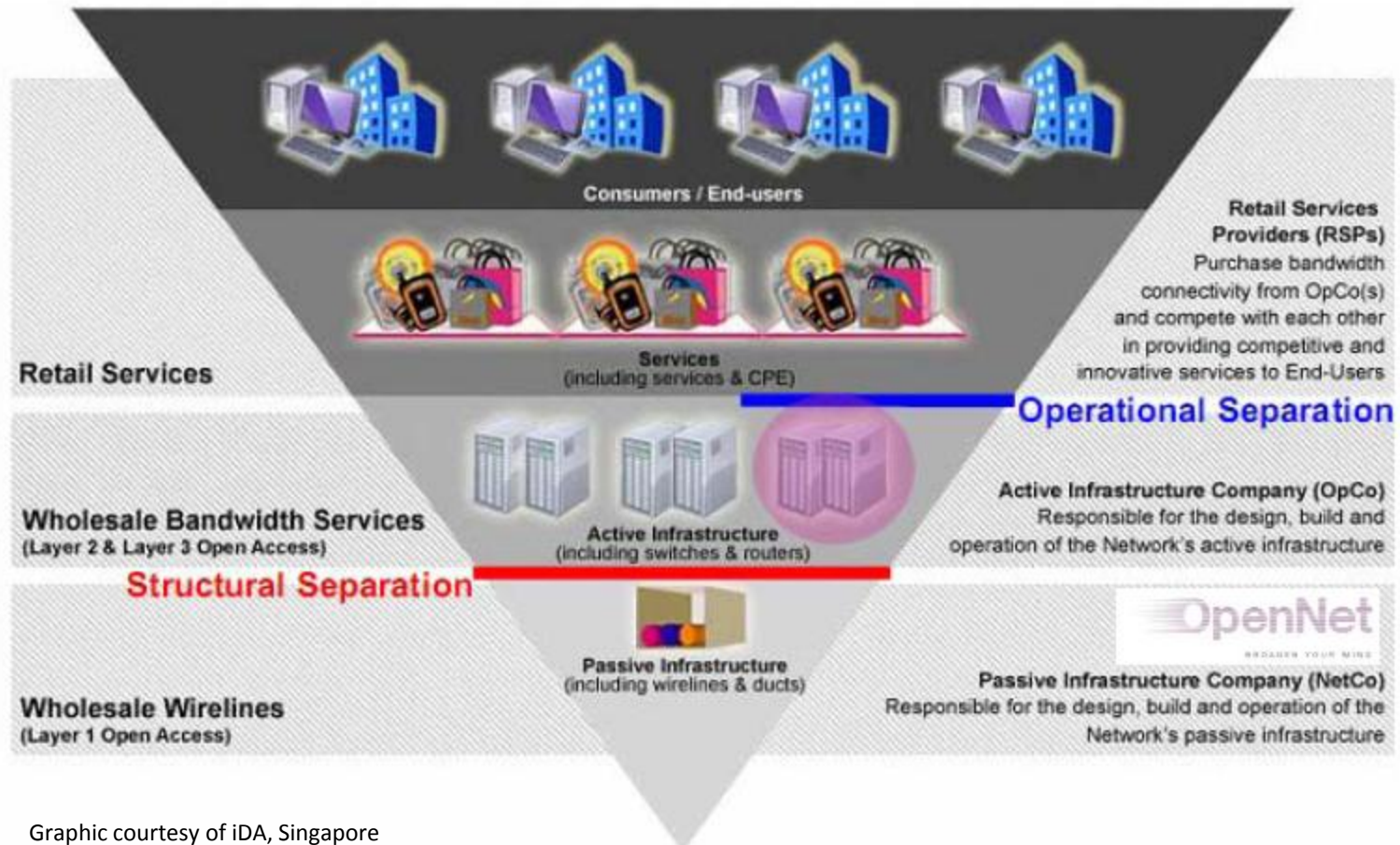
The value of broadband is in its use.



Graphic courtesy of Telekom Malaysia



Broadband Scheme in Singapore



Graphic courtesy of iDA, Singapore



Examples of Government Participation in Broadband Development

Country	Rollout	Funding
Japan	95% (target), with penetration at 8.5m subscribers	Early tax breaks and national policy objectives with NTT taking lead
Korea	>90% (target), with 45% current penetration	Low interest rate loans, combined with Broadband convergence Network (BcN) policy
Netherlands	Almost ubiquitous FTTH coverage, with 2.4% penetration at end 2008	Private investment
New Zealand	75% population (target)	Government funding of NZ\$1.5 billion through Crown Fibre Investment Co.
Singapore	95% to all residential and non-residential buildings (target)	Government grant of up to S\$1 billion
Malaysia	50% household population through mix of FTTH and FTTP (target)	Private-public partnership with total investment of RM11.3bn, with co-Government investment of RM2.4bn
Australia	FTTP to 90% of population	Government 51% owned network. \$43bn in total cost with \$4.7bn Government equity contribution and balance in Government bonds

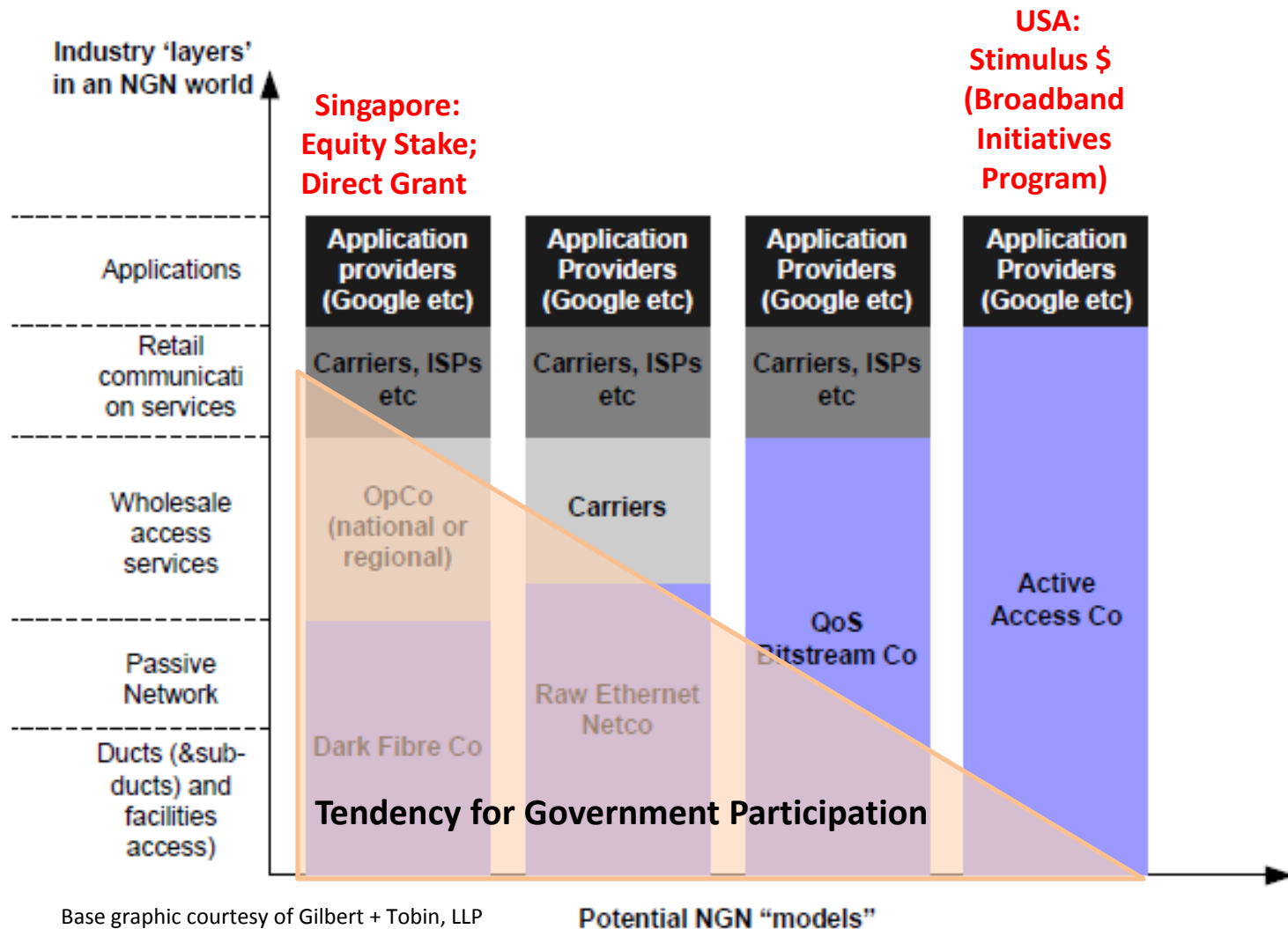
Source: Gilbert + Tobin, LLP, IDATE and Pipe Networks/Pipe International



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Models for Next Generation(Broadband) Networks



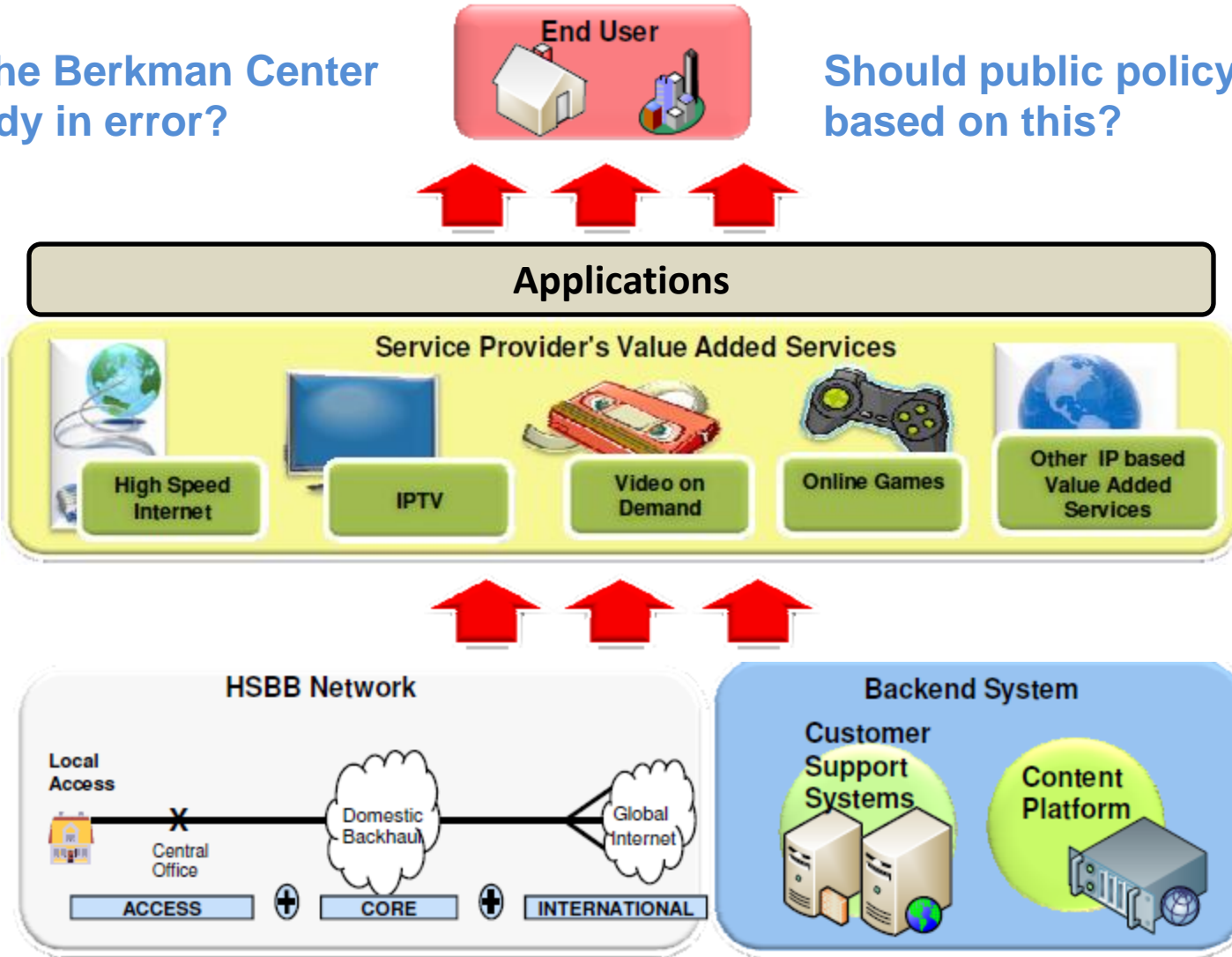
Unbundling the Network

Does it increase, decrease or have no effect on broadband consumption?

Is the Berkman Center study in error?

Should public policy be based on this?

Voice as an Application?



Cloud Computing



Development of a US National Broadband Plan

[29 Sept FCC Report](#)

Plan due early February 2010.

Balancing Private & Public Interests and Partnerships
Focusing Federal Resources Effectively
Access & Adoption
Reforming USF
Need for More Spectrum for Mobile Broadband

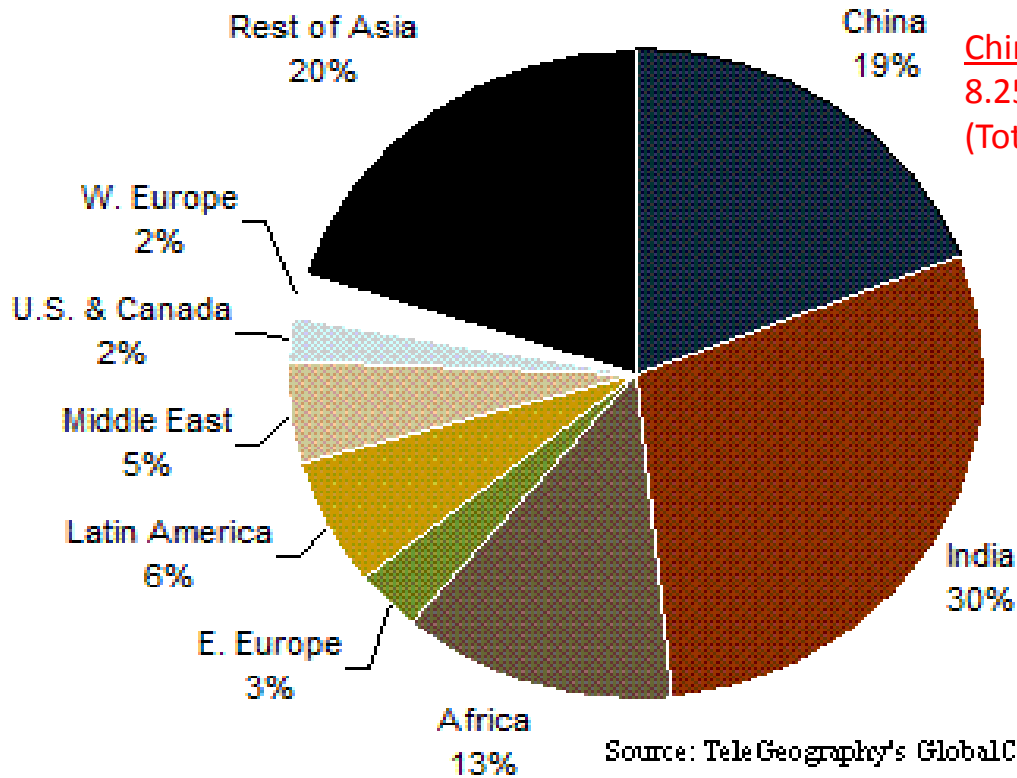
Related but separate proceeding:

Preserving a Free and Open Internet

FCC [rule-making notice](#) seeking to codify 6 principles including a nondiscriminatory principle (net neutrality).



Share of Wireless Subscriber Growth in 1Q 2009



China - 2Q 2009
8.25m new mobile subscribers
(Total = 670m)

Source: TeleGeography's GlobalComms Insight

153 million Net New Subscribers

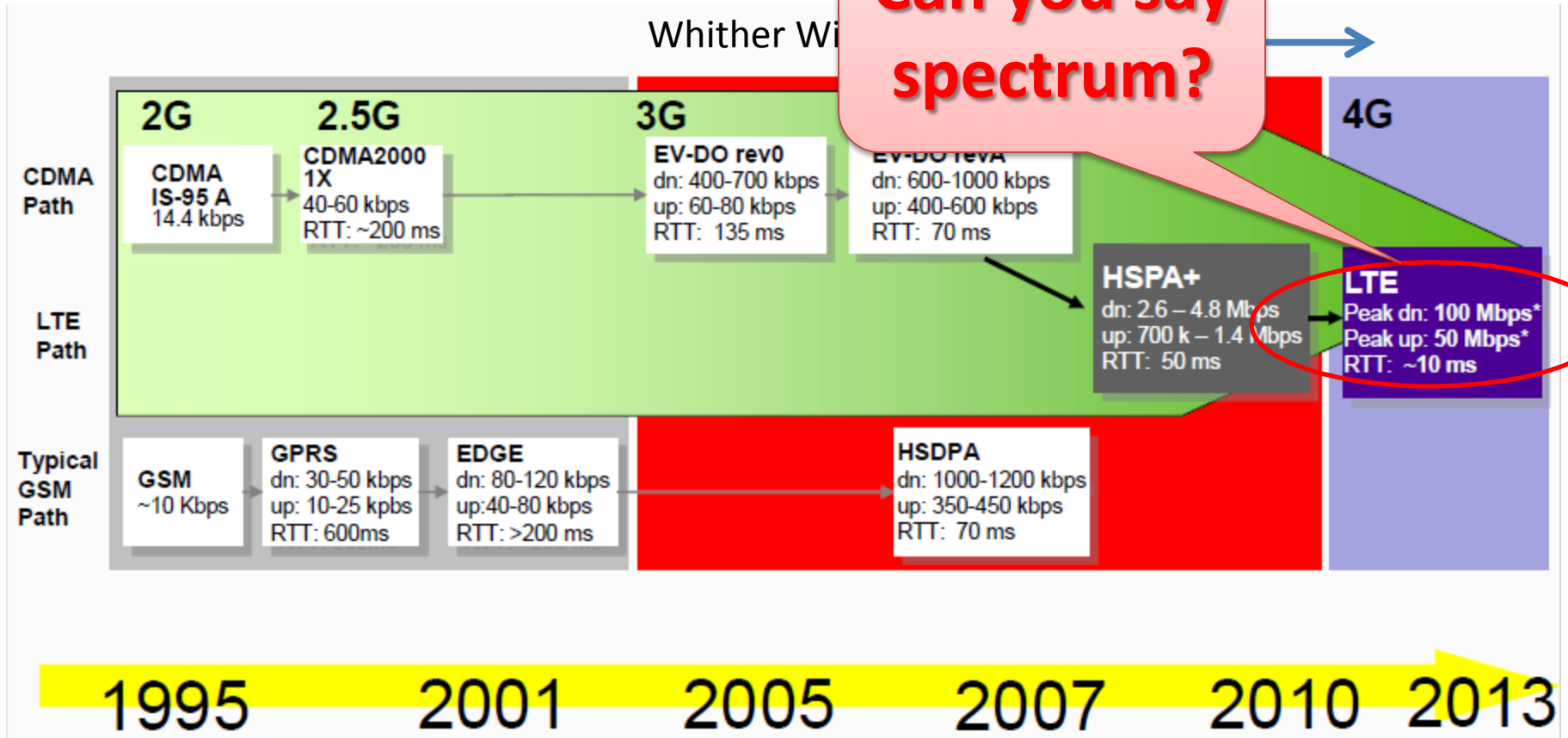
Source: Telegeography Research, Inc.



Wireless Broadband Development

Roadmap to L

Can you say spectrum?



Graphic courtesy of the ExecutiveCrashCourse, Center for Telecoms Management, Marshall School of Business, USC



Government Stimulus Projects Aimed at Wireless Broadband

Australia

10% of population to be served using wireless broadband

New Zealand

In the US, spectrum allocation for broadband mobile will be one of the biggest issues facing the FCC over the next 2 years.

Malaysia

[FCC Notice](#)

gies.

United States

Who will give up their current allocation to make room?
Broadcasters? Satellite Operators?

US may have a strong lead for now in the initial deployment of 4G/LTE, but, Asia will quickly outstrip the US in network scale.





Embracing the Cloud: Enabling Connectivity and Innovation

17-20 January 2010

Honolulu, Hawaii

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