



'Shooting the Messenger' **Myth vs. Reality: U.S. Broadband Policy and International Broadband Rankings**

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Executive Summary

On April 23, 2007, the Organisation for Economic Cooperation and Development (OECD) released their latest semi-annual broadband penetration rankings, which revealed that the United States had fallen to 15th place among the 30-member nations, down from 12th place just six months earlier. This slide continued a downward trend for America, dropping from a high of fourth place in 2001. The OECD data showed other problems for America: Annual U.S. penetration growth ranked 20th, and semi-annual growth was 24th out of 30 countries.

Release of the latest OECD report – unlike previous studies -- was met with a fierce response by incumbent providers and the think tanks they support, as well as prominent public attacks by several members of the executive branch. Given the critical importance of broadband to the country's future, Free Press decided to investigate the OECD data and the claims of its critics.

Free Press found that the major critiques leveled at the OECD data simply fall apart upon closer examination. The coordinated attempt to “shoot the messenger” cannot hide critical failures in the U.S. broadband market. These failures are chiefly due to poor policy decisions that have fostered an anti-competitive marketplace. Our European and Asian counterparts are outperforming us because they have policies that foster vigorous competition in the broadband marketplace, offering consumers more choice, faster speeds and lower prices.

The simple fact is that international rankings do matter. This is not just a point of pride. Each spot the United States slips represents billions in lost producer and consumer surplus, and potentially millions of real jobs lost to overseas workers. The international studies highlight the fact that the status quo in the U.S. broadband marketplace is unacceptable. U.S. policymakers must reject the “shoot the messenger” rhetoric and move toward an honest assessment of our problems.

This paper exposes the myths put forward to excuse the shortcomings of the U.S. broadband market. The facts speak for themselves: More than 10 million U.S. households remain unserved, and nearly 50 million homes could subscribe but choose not to because the connection available is too expensive or too slow. The 50 million homes that do have broadband face, at best, a duopoly choice between the local phone or local cable company.

We have two fundamental problems in our broadband market — availability and competition. These are real issues where American policymakers can make a difference by helping to foster a truly competitive marketplace like that found in many European and Asian nations.

Myths and Realities About U.S. Broadband Performance

Myth #1: *The OECD rankings are misleading, because they measure broadband subscribers per capita, which hides the true level of household adoption in countries that have high average household populations, like the United States.*

Reality: While the OECD does measure per capita broadband penetration, the data undeniably shows a decline in overall U.S. broadband performance in the past several years. But even if you measure it per household -- like the critics want -- the United *still trails far behind other leading nations*. Among the 30 OECD nation's, America ranks 15th in household broadband adoption. **Among all the world's nations, the United States is 24th.**

Myth #2: *The U.S. household broadband penetration is higher than that of most European Union countries.*

Reality: The data for this assertion is based on a comparison of two completely different studies: a European Commission (EC) household face-to-face survey conducted in 2006, compared against a Pew telephone survey of U.S. adults conducted in 2007. Because of a smaller median sample size the EC survey has a much higher margin of error than the Pew poll, making comparisons between the U.S. and top performing EU countries inconsequential.

Moreover, data from Point-Topic and the International Telecommunications Union (ITU) shows that **as of April 2007 there are nine EU countries with higher levels of household broadband adoption than the United States**. And a comparison between the EU as a whole and the U.S. is not valid, as the EU includes a number of poor developing-economy nations, such as Romania and Latvia.

Myth #3: *The OECD data is misleading, because it doesn't emphasize the size of the market. The United States has more broadband connections than any other country in the entire world.*

Reality: It is no surprise that the United States has more broadband connections than any other country in the world, because the United States is the third most populated country on the planet and one of the richest. Boasts about the total number of connections are meaningless unless put into the proper per-capita or per-household context.

Myth #4: *The United States covers a huge geographic area. We're only behind in broadband penetration because other countries have higher population densities.*

Reality: There is absolutely no correlation between a country's population density and its broadband penetration. There is a very weak relationship between broadband penetration and the percentage of a country's population living in *urban* areas, but this explains very little of the differences between nations' broadband rankings. Eight of the 14 countries *ahead* of the United States in the OECD broadband rankings actually have *lower* percentages of their population living in urban areas. Furthermore, accounting for geographic and demographic factors doesn't improve our broadband standing. A recent study by the industry-funded Phoenix Center that attempted to account for such factors still shows the United States as 14th among the 30 OECD nations.

Myth #5: *If you compare individual U.S. states to other nations, then the United States is doing just fine in broadband adoption.*

Reality: Given that telecommunications policy is made at the federal level, state-to-country level comparisons are essentially meaningless. However, even under this lens the U.S. continues to be outperformed. **The 14 countries ahead of the United States in the OECD rankings all have higher levels of household broadband adoption than two-thirds of the U.S. states.**

Myth #6: *The OECD doesn't count special access data lines in the United States, thus underestimating our true level of broadband penetration.*

Reality: Even if we assume that the OECD has not counted the U.S. special access lines -- which is not clear -- adding them to our total count would not change our broadband penetration ranking. We would remain at 15th.

Myth #7: *The OECD doesn't include mobile wireless and Wi-Fi in their data, thus hiding the true level of U.S. broadband performance.*

Reality: The OECD correctly doesn't include 3G mobile wireless in their tallies, because these products are not broadband products. But if they did, the United States would fare even worse, because many European and Asian countries have far more developed mobile data markets. Wi-Fi lines are included in the OECD data, but it is disingenuous to imply that a \$10-a-day connection at Starbucks is a true substitute for a home broadband connection.

Myth #8: *The OECD doesn't account for how people access the Internet. Millions of Americans have broadband access at their place of work or at school.*

Reality: The OECD data counts all types of lines, including both residential and business subscribers. Furthermore, while millions of Americans do use broadband at college campuses and other schools, the students in other OECD nations have access to similar connections. While millions of Americans who don't have broadband at home do have access at work or at school, this limited access is simply not a meaningful substitute for home broadband access.

Myth #9: *European OECD countries are doomed to lose the broadband race because they don't have platform competition.*

Reality: There is in fact "intermodal" competition in many European nations. But even where there is not, open access policy has led to robust "intramodal" competition or competition between providers on the same technology platform. While U.S. consumers have at best two choices for a wired broadband connection, in European countries consumers have many choices -- sometimes dozens -- among providers on just a single platform.

Myth #10: *Other countries' overall broadband growth rates are slowing. The United States is poised to leap ahead.*

Reality: The fact is many of the countries ahead of the U.S. in total and household-level broadband adoption still have higher and increasing levels of *absolute* growth. But even if we focus on growth *rates* alone, the data is quite alarming. **The U.S. broadband penetration growth rate during the second half of 2006 was the second lowest in the entire OECD.**

The Broadband Problem Is Real: We Need a National Broadband Policy

The evidence is clear: the United States has a broadband problem. If the incumbent phone and cable companies had their way, politicians and regulators would ignore the mounting evidence and sit idly by while the forces of the "free market" lead us down a path of technological obsolescence.

All of the excuses offered to explain away America's performance on the international broadband stage cannot hide the reality that many countries continue to deploy and adopt broadband at a higher level than the United States. Because of sound public policy, the citizens in these countries actually enjoy a competitive broadband market. They pay far less for far better and faster service, while American consumers are trapped in a duopoly marketplace with no relief in sight.

The real problem in the United States is not infrastructure -- it's competition. Americans should expect the same stagnant broadband market unless *real* competition arrives. Real competition won't come in the form of a third or even fourth pipe. It will come when there are *many* competitors on the *same* platform, in addition to *many* providers on *differing* platforms.

This is no time to make excuses and play the game of "shoot the messenger". Policymakers should study the foreign marketplace successes to inform themselves of what works and what doesn't. There is no "one-size-fits-all" solution to our broadband problems, and a successful strategy will need to be composed of both regulation and deregulation; it will need to have carrots and sticks; public investment and private investment; benchmarks and goals; and ultimately it will need to be flexible.

Introduction: Ignore Reality and Declare Victory

In 2004, President Bush set a clear goal for high-speed Internet access in the United States:

*We ought to have a universal, affordable access for broadband technology by the year 2007, and then we ought to make sure as soon as possible thereafter, consumers have got plenty of choices when it comes to purchasing the broadband carrier. See, the more choices there are, the more the price will go down. And the more the price goes down, the more users there will be. And the more users there will be, the more likely it is America will stay on the competitive edge of world trade.*¹

The president clearly called for not only universal access by 2007, but more importantly he wanted broadband to be *affordable*. The president correctly pointed out that marketplace competition and consumer choice would spawn greater consumer broadband adoption, ultimately benefiting the entire American economy. This was his policy goal.

In reality, the United States has not met either the goal of universal availability or achieved the level of competition necessary to spur adoption rates and achieve the economic and social benefits the president desired.

But that hasn't stopped administration officials from declaring victory anyway. In what must have been news to the more than 10 million U.S. households that aren't served by broadband providers, NTIA Assistant Secretary John M.R. Kneuer recently claimed that we've already met President Bush's goal of universal broadband access.

Kneuer's claim is based primarily on the recent increase in the availability of data-enabled cellular networks. In his view, the ability to purchase some kind of Internet service -- regardless of functionality, quality, speed or price -- is all that really matters. Speaking to a gathering of the wireless industry, Kneuer said: "There is some confusion or misinterpretation that if we only have 30 percent or 40 percent penetration rate, how are we going to close that gap? ... The issue is whether every household has access to broadband, not whether every household has made the consumer choice to subscribe."²

The fact is that approximately one out of every 10 American households simply can't purchase a wired broadband product at any price.³ DSL is available in about 80 percent of U.S. homes, and cable modem is available in about 90 percent.⁴ Some of the remaining 10 percent of homes may have access to satellite service, but the FCC reports that only 90 percent of U.S. ZIP codes have at least one customer reporting satellite service.⁵ Still, a \$50-plus per month 500 kbps *best effort* service hardly qualifies as affordable broadband.⁶

¹ Remarks by President George W. Bush, March 26, 2004, Albuquerque, N.M. Available at <http://www.whitehouse.gov/news/releases/2004/03/20040326-9.html>.

² Heather Forsgren Weaver, "Kneuer Says U.S. Will Meet Bush's 2007 Broadband Goal", *Communications Daily*, June 15, 2007 ("Kneuer 2007 speech").

³ Broadband Deployment is Extensive throughout the United States, but it is Difficult to Assess the Extent of Deployment Gaps in Rural Areas," Government Accountability Office, Report to Congressional Committees, GAO-06-426, May 2006.

⁴ See Table 14, "High-Speed Services for Internet Access as of June 30, 2006," Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, January 2007 ("June 30 2006 Form 477 Data").

⁵ *Ibid.*, Table 16.

⁶ There are two satellite providers of broadband service operating in the U.S. WildBlue offers a 500 kbps download/128 kbps upload service for \$50 per month, plus equipment fees. HughesNet offers a 700 kbps download/128 kbps upload service for \$60 per month, plus equipment fees.

Mobile wireless also comes up short. In his speech Mr. Kneuer touted this technology as an equal to the cable modem and DSL connections that account for over 95 percent of all residential U.S. broadband lines.⁷ But if this is the technology that the Bush administration is relying on to take America across the universal-broadband finish line, we are in trouble. Once more the data do not support the conclusion.

While there is no doubt that this country's four dominant mobile wireless carriers have spent billions upgrading their network capacity, they've yet to roll out *true* broadband services to *all* parts of America. There is nothing "universal" or "affordable" about this technology platform.

Verizon Wireless and Sprint are by far the leaders, but their EVDO Rev A service is only available to about two-thirds of the country and is quite expensive.⁸ Both companies sell service that is rated at 600 kbps to 1.4 Mbps for \$80 per month (with a one-year contract, plus taxes, surcharges, fees, download limits and other restrictive usage terms).⁹ AT&T sells a 400-700 kbps service for \$60 per month -- but you must sign a two-year contract and also subscribe to a \$40 per month voice plan.¹⁰ In total, the FCC reports that mobile wireless carriers only serve 80 percent of U.S. ZIP codes.¹¹

Mr. Kneuer's comments about the U.S. broadband marketplace came in response to the recent data released by the Organisation for Economic Cooperation and Development (OECD) which ranked the U.S. 15th among the 30 member nations in total "broadband penetration" (i.e. broadband subscribers per capita).

This data, which shows a continuing slide for the United States (down from fourth place in 2001 and 12th place just six months ago), also triggered a rapid response from the U.S. State Department. In a very strongly worded letter, David Gross, the U.S. Coordinator for International Communications and Information Policy, rebuked the OECD for relying too much on subscriber data while ignoring the "remarkable non-subscriber access to broadband services" in America.¹²

This critique of the OECD might best be described as the "Starbucks College Defense". Gross argues that since the United States is teeming with Wi-Fi hotspots (at \$10 a day in many cases), that we're really doing much better than the OECD numbers would have us believe. He also argues that our true broadband status is understated because the OECD doesn't account for broadband use on college campuses. However, of the 14 countries ahead of the U.S. in the OECD rankings, only three have a lower number of average years of education than that of Americans.¹³ Given the overall higher level of broadband use in these countries, the United States would surely fare even worse in a country-to-country comparison that tried to capture broadband use from *any* location.

NTIA and the State Department are not alone in their efforts to throw cold water on the OECD numbers. Members of the Federal Communications Commission have made similar arguments.

⁷ June 30 2006 Form 477 Data, Table 3.

⁸ Verizon announced on June 29th that it had completed its rollout of EVDO Rev A service, now available to approximately 2/3 of the U.S. population (see <http://news.moneycentral.msn.com/provider/providerarticle.aspx?Feed=PR&Date=20070629&ID=7107969>). Sprint's EVDO Rev A service is available to a similar proportion of the U.S. population (see <http://www.evdoinfo.com/content/view/2016/64/>).

⁹ Information obtained from Sprint and Verizon's published offerings.

¹⁰ Published offering from AT&T.

¹¹ June 30 2006 Form 477 Data, Table 16.

¹² Dugie Standeford, "U.S. Official Says OECD Survey Omits Non-Subscriber Data", *Communications Daily*, April 25, 2007.

¹³ According to the U.N., the average years of schooling in the U.S. is 16, lower than that seen in Denmark (17), Finland (17), Iceland (18), The Netherlands (17), Norway (18) and the U.K. (17); tied with Belgium, Canada, France, South Korea, and Sweden; and ahead of Japan (15), Luxembourg (14) and Switzerland (15). See <http://unstats.un.org/unsd/Demographic/products/socind/education.htm>.

Commission Chairman Kevin Martin has gone on record numerous times with sweeping statements about how American consumers have “finally found the promise land” in a market of “vigorous” competition.¹⁴

In June, Commissioner Robert McDowell delivered a speech at the Broadband Policy Summit¹⁵ that mirrored many of the arguments against the OECD data being made by incumbent telephone companies such as Verizon.¹⁶

The assessment from each of these government officials is essentially the same. In their view, the U.S. broadband market has healthy competition and our international performance indicates no significant problems regardless of what the OECD rankings may say.

Every interested observer is entitled to an opinion in this importance debate about the future of U.S. broadband and our global competitiveness. But too often these efforts to diminish the importance of the OECD rankings have used misleading, sloppy, and just plain wrong facts to back up their claims. This report sets the record straight.

Fact and Fiction about US Broadband Performance

A seemingly coordinated attack has tried to discredit the OECD’s latest international broadband rankings, which place the United States 15th in broadband penetration among the 30 member nations.¹⁷ These rankings have been the subject of numerous policy discussions on Capitol Hill—and for good reason. In 2001 the U.S. ranked fourth. By June 2006, we had dropped to 12th, before falling to 15th just six months later.

Are the OECD rankings perfect? Of course not. Are they informative? Absolutely. And their findings are confirmed in other ongoing studies. In fact, the vast body of evidence about international broadband markets supports the OECD findings. Here are the realities behind the most common myths about how U.S. broadband compares to the rest of the world.

Myth #1:

The OECD measures per capita broadband adoption, but it should look at household adoption.

Reality:

The United States is still ranked 15th among the 30 OECD nations in household broadband adoption, and ranked 24th among all the world’s nations.

The OECD measures broadband lines per 100 inhabitants. This includes all lines that are greater than 256 kbps, be they residential or business, cable, DSL, fiber, traditional wireline, broadband over powerline or fixed wireless.

¹⁴ “Written Statement of the Honorable Kevin J. Martin Chairman Federal Communications Commission before the Committee on Commerce, Science & Transportation U.S. Senate February 1, 2007.”

¹⁵ “Luncheon Address”, Commissioner Robert M. McDowell, Broadband Policy Summit III, June 7, 2007, Crystal City, Virginia.

¹⁶ As soon as the OECD rankings were released in April 2007, Verizon began circulating a slide presentation attempting to discredit the data. Some of those slides were included in a recent presentation by a Verizon economist (see <http://www.pff.org/events/eventpowerpoints/062807broadbandconference/Weller%20PFF%20CPI%20broadband%20June%2028%202007.pp>); while some of the arguments were made public on Verizon’s policy blog (see <http://policyblog.verizon.com/policyblog/blogs/policyblog/linkhoewing9/280/the-oecd-numbers-what-they-don-t-show.aspx>).

¹⁷ “OECD Broadband Statistics to December 2006”, available at http://www.oecd.org/document/7/0,3343,en_2649_37441_38446855_1_1_1_37441,00.html.

One common critique is that a per capita accounting doesn't provide information about the household level adoption of broadband service. Commissioner McDowell levied this critique in his June 2007 speech, saying, "Countries are punished or rewarded by the OECD analysis based on the number of persons living in a household or the number of people working in a business." Let's unpack that a bit.

What McDowell is saying is that if we have two countries -- country A and country B -- that both have 100 million inhabitants and which both have 20 million residential lines and 5 million business lines, then they will have equal broadband penetration rates of 25 percent.

But if country A has 2.5 persons per household and country B has 2.6 persons per household, then country A's household penetration will be 50 percent, while country B's will be 52 percent. Thus, all other things being equal, the higher the average per home population the higher the household penetration.

The U.S. has an average of 2.6 persons per household¹⁸, and 11 of the 14 countries ahead of us in the OECD's broadband penetration rankings have a lower average number of persons per household.¹⁹ This suggests that the larger average household size in the United States could be disguising our true broadband performance.

But looking at the average household size turns out to make little difference. McDowell is correct to state that household penetration is a more informative metric than mere total penetration, and the OECD should report the data in this manner as well. Fortunately, we don't have to wait for them to issue a new study, because there is other data on this very issue.

Point Topic, a U.K.-based private data company is recognized as one of the most reliable sources of international telecommunications data. They have been collecting broadband data from hundreds of countries for nearly a decade, and they produce quarterly estimates of household-level broadband penetration. Their data is based on a census-like assessment of all providers, and is also derived from International Telecommunications Union (ITU) data, the world's most authoritative source of international telecommunications data. And their data as of the end of 2006 shows **the United States ranked 15th among the 30 OECD nations in household broadband penetration.**²⁰

Simply stated, whether you look at total penetration or household penetration, *the United States is still ranked 15th.*

When other non-OECD nations are included, the United States ranks 24th in household penetration.²¹

¹⁸ As reported by the U.S. Census Bureau, 2005 American Community Survey

¹⁹ Data obtained from Point-Topic.

²⁰ Point Topic, Global Broadband Statistics Data. (a subscription based service). Available at <http://point-topic.com/home/gbs/>.

²¹ Other non-OECD nations that have higher household broadband penetration than the U.S. include: Hong Kong, Monaco, Macau, Singapore, Israel, Taiwan, Guernsey, Qatar, and Estonia.

**Figure 1: Total Broadband Penetration and Household Broadband Penetration
30 OECD Nations as of June 30, 2006
(Data from OECD and Point-Topic/ITU)**

Data from the OECD			Data from Point-Topic/ITU		
Country	Total Broadband Penetration (lines per 100 inhabitants, as of June 30 2006)	Rank	Country	Household Penetration (percent of homes with Broadband as of June 30 2006)	Rank
Denmark	31.9	1	South Korea	80.9	1
Netherlands	31.8	2	Iceland	71.1	2
South Korea	29.1	3	Netherlands	64.2	3
Switzerland	28.5	4	Denmark	63.6	4
Iceland	27.9	5	Norway	63.4	5
Norway	27.5	6	Switzerland	61.4	6
Finland	27.2	7	Canada	57.2	7
Sweden	26.0	8	Finland	53.9	8
Canada	23.8	9	Japan	50.5	9
Belgium	22.5	10	Sweden	49.5	10
United Kingdom	21.6	11	Belgium	48.2	11
Luxembourg	20.4	12	France	46.6	12
France	20.3	13	United Kingdom	46.3	13
Japan	20.2	14	Luxembourg	45.7	14
United States	19.6	15	United States	45.0	15
Australia	19.2	16	Australia	44.5	16
Austria	17.3	17	Spain	39.7	17
Germany	17.1	18	Austria	38.3	18
Spain	15.4	19	Portugal	37.9	19
Italy	14.8	20	Italy	34.6	20
New Zealand	14.0	21	Germany	31.6	21
Portugal	13.8	22	Ireland	30.9	22
Ireland	12.5	23	New Zealand	28.8	23
Hungary	11.9	24	Czech Republic	19.6	24
Czech Republic	10.6	25	Hungary	18.3	25
Poland	6.9	26	Poland	15.3	26
Slovak Republic	5.7	27	Turkey	13.6	27
Greece	4.6	28	Mexico	9.2	28
Turkey	3.8	29	Greece	8.8	29
Mexico	3.5	30	Slovak Republic	8.4	30

Myth #2:

The U.S. household broadband penetration is higher than that of most European Union countries.

Reality:

The EU is composed of many countries with developing economies, thus it is not surprising to find low levels of household broadband adoption in these relatively poor nations. However, according to the most recent data, as of April 2007 there are nine EU countries with higher levels of household broadband adoption than the United States.

A slide show circulated by Verizon last April, Progress and Freedom Foundation's Scott Wallsten's June 2007 slide show²², Verizon Chief Economist Dennis Weller's June 2007 slide show²³, and Robert McDowell's June 2007 speech all portray U.S. broadband performance in a favorable light by comparing the U.S. household broadband penetration level to that recently reported by the European Commission (EC). All four of these presentations compared the level of household broadband adoption reported by the Pew Internet and American Life Project to the EC's annual survey data.²⁴ All presentations attempted to illustrate that the household level adoption of broadband in the United States is higher than all but three EU nations.

However, there are several fatal flaws to this comparison. First, the surveys were conducted using different methods (the Pew survey is a phone interview of U.S. adults, while the EC survey is a face-to-face survey of any random household member, conducted by a door-to-door canvassing), and they ask different questions. Second, the surveys were conducted at two different times (the most recent Pew survey was conducted February-March 2007 while the EC's was conducted November-December 2006). Third, the sample size for each country surveyed within the EU was much smaller than the Pew survey. Pew surveyed 2,200 adults in its 2007 study, while the median number of respondents surveyed in the 2006 EC survey was just over 1,000. This means the margin of error is significantly higher for the EC study than it is for the Pew study (see Figure 2).²⁵ Simply stated, the two cannot be easily compared.

²² "Everything You Hear about Broadband in the U.S. is Wrong", Scott Wallsten, Progress and Freedom Foundation, June 13, 2007.

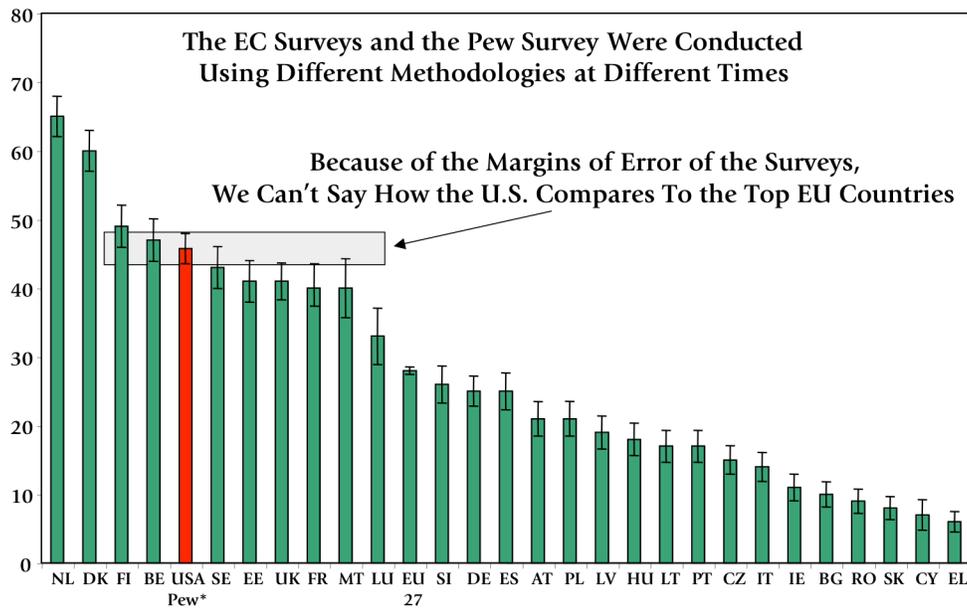
²³ See

<http://www.pff.org/events/eventpowerpoints/062807broadbandconference/Weller%20PFF%20CPI%20broadband%20June%2028%202007.ppt>

²⁴ The Initial Verizon presentation, circulated prior to the April 2007 Senate Commerce Committee broadband hearing, and Weller's presentation used 2006 Pew Data to compare to 2005 EC data. Wallsten's slide show used 2007 Pew data and compared to the 2006 EC data.

²⁵ The sample sizes within each EU country ranged from 500 to 1,315, and the confidence intervals range from plus/minus 1.5 percent to plus/minus 4.3 percent.

Figure 2: Comparing the November 2006 EC and February 2007 Pew U.S. Broadband Surveys
Percent of Households with Broadband (EC) and Percent of Adults with Broadband at Home (Pew)



* Pew value adjusted to reflect estimated real U.S. value at time of EC Surveys

A much more accurate and detailed source is available from Point-Topic, which uses a census-like assessment of broadband subscribership (via an assessment of the number of lines by type and customer type for every single provider offering service in nearly 100 countries). Point-Topic's household broadband adoption data is also based upon data provided by the ITU, the most widely recognized source of accurate and comparable country-level information and communications technology data. Point-Topic's approach is arguably much more accurate than a small sample, self-reported user survey. Point-Topic's latest data (data as of April 2007, published June 2007) indicates that there are *nine* EU countries with higher levels of household broadband adoption than the United States. (The Netherlands, Denmark, Finland, France, Sweden, the U.K., Luxembourg, Belgium, and Estonia).

Finally, any comparison of the United States to the European Union should be viewed with skepticism. The 27 EU members include many Eastern European countries that are essentially developing economies, not developed nations like the United States.²⁶ The results must be understood in that context.

²⁶ The EU includes countries like Romania (GDP per capita of \$9,100 USD) and Cyprus (GDP per capita of \$7,100 USD), which are economically far less developed than the United States (GDP per capita of \$44,000, the fourth largest in the OECD; see <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html>).

Myth #3:

The OECD's reporting is suspect because they don't emphasize the total number of connections. If they did, they'd see that the United States is No. 1 because we have more lines than any other country in the world.

Reality:

The United States is the largest country in the OECD, and the third-largest country in the world. Reporting the total number of connections is meaningless without context. Lines per-capita or lines per household is the proper way to conduct comparisons.

Defenders of the broadband status quo often argue that the penetration data doesn't matter, because the United States is No. 1 in total number of connections. In his recent speech, Commissioner McDowell said, "The [OECD] study does not emphasize the fact that the United States is simply the largest broadband market in the world with over 58 million subscribers, according to the OECD report – more than twice the number of America's closest competitor."

This is true. But it is not a meaningful critique of the comparative performance of nations on a per capita basis. Using this logic, we could say the United States has more unemployed people than any other country in the OECD, including developing economies like Mexico, so therefore the U.S. economy must be in the tank. But when viewed through the sensible *per capita* lens, which accounts for country population, the United States has one of the lowest unemployment *rates* in the entire OECD.

The argument that relatively poor U.S. performance is excused by the total number of broadband lines irrespective of population is misleading. Looking from another angle, China now has almost as many broadband connections as the United States and will likely overtake us this year. But China has four-times as many people as the United States. Our *household adoption rate* is nearly four-times higher than China's. When China overtakes us in the raw number of connections, we will rightly not point to the Chinese as the world leaders in broadband performance.

Myth #4:

The OECD's reporting doesn't account for factors such as population density, income, education and population age. The United States has a smaller penetration level because we're a big country with larger rural areas. When these factors are considered, the United States is performing well.

Reality:

There is absolutely no significant correlation between OECD broadband penetration and population density. The more relevant metric is the percent of a country's population that lives in urban areas. But even this metric accounts for very little of the difference in OECD broadband rankings. Simply stated, geography doesn't matter; policy does. Even when controlling for demographic and geographic factors, the United States is still outperformed by more than a dozen OECD nations.

Ever since the United States began its slide in the international broadband rankings, critics have argued that the U.S. position in the rankings is simply due to geography -- that because we have large open spaces, we're at a disadvantage. This is certainly an attractive argument, as it is much cheaper on a per-line basis to wire 100 apartments in a single high-rise building than it is to wire 100 homes sparsely spread out in the high-desert plains of northern New Mexico. It's a basic phenomenon known as "economies of density."

But the simple fact is population density is the wrong metric to capture this phenomenon. For example, Nevada has the 8th-lowest population density of the 50 U.S. states. But if you look at the percentage of a state's population living in urban areas, Nevada has the 3rd-highest urban population, because over 90 percent of that state's population lives in the Las Vegas area. The relevant metric to capture the phenomenon of economies of density is the percent of the population living in urban areas, because it's the proportion of densely packed population that matters, not the geographic size of a state or country.

The emptiness of the population density argument is exposed by a close examination of the OECD data. Iceland has one of the lowest population densities in the world, but it has the third-highest broadband penetration in the OECD (and the second-highest household penetration). Furthermore, five of the 14 countries ahead of the United States in the OECD broadband rankings have lower population densities than the United States.²⁷

Even when comparing the differences in urban population among the OECD nations, there is no significant correlation.²⁸ Countries like the Netherlands and Switzerland have lower percentages of their population living in urban areas than the United States; yet they have higher broadband penetration rates. Similarly, countries like New Zealand and Germany have higher percentages of urban population than the United States but lower broadband penetration levels. In total, eight of 14 countries ahead of the United States in the OECD broadband rankings have lower percentages of their population living in urban areas.

To his credit, Commissioner McDowell did attempt to address the issue of ruralness/urbanicity. But his facts were off the mark. He stated: "Only one country above us on [the OECD] list is at least 75 percent rural, like the U.S. is." According to the latest data from the U.S. Census Bureau, 21 percent of the population living in the United States lives in rural areas -- the United States is 79 percent *urban*.²⁹

The case of Canada further demonstrates how the geographic characteristics fail to explain international broadband performance. Canada ranks ninth in the OECD, and 80 percent of its population lives in cities concentrated on the U.S. border. Similarly, about 80 percent of Americans live in cities. But our population density is 10 times higher than Canada's. According to the logic of the geographic explanation, the United States should be outperforming Canada in broadband penetration by a wide margin. But we are not.

The fact is that geographic factors alone cannot explain why the United States lags behind. Factors like income, poverty, market competition and public policy play a far bigger role, as numerous econometric comparative studies have shown.³⁰

A recent report by the industry-funded Phoenix Center³¹ attempted to downplay the OECD rankings by constructing a "Broadband Performance Index," which accounts for intervening factors such as population density, GDP per capita, income inequality, household and business size, service price, and

²⁷ See Figure 6 in "Comments of Consumers Union, Consumer Federation of America and Free Press" In the Matter of *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, GN Docket No. 07-45, submitted May 16th 2007.

²⁸ *Ibid.*, Figure 7.

²⁹ According to the U.S. Census Bureau, in 2000 there were 222,360,539 persons living in urban areas in the 50 states and DC -- 79 percent of the 281,421,906 total persons.

³⁰ S. Derek Turner: "Universal Service and Convergence: USF Policy For the 21st Century", presented at the 34th Research Conference on Communication, Information and Internet Policy (TPRC), September 2006.

³¹ For example see, <http://www.freepress.net/news/12382>; or <http://www.capitalresearch.org/news/news.html?id=431>.

the use of conventional telephony.³² This econometric approach, while valuable to examining which factors are important in influencing broadband adoption, is fundamentally flawed when used to construct an “index”. This is simply because the index values themselves are highly sensitive to the specification of the econometric model. If the model leaves out important variables or uses inaccurate data for its input variables, then the index is subject to wide fluctuations.

For example, in Wallsten’s slide show he constructs an econometric model of international broadband penetration as a function of per capita GDP, geographic factors and technology platform marketshare. In Wallsten’s model, Turkey’s actual broadband penetration is well below what is predicted based on the variables in the model. But in the Phoenix Center model, Turkey’s actual broadband penetration is far above what is predicted based on the variables in the model.

Furthermore, though the broadband penetration values used by the Phoenix Center were for the three OECD reporting periods between June 2005 and June 2006, the control variables they used were static and often from several years earlier. For example, the price data that Phoenix Center used was collected in 2003, over three years prior to when the latest broadband penetration data was gathered. The length of time between the broadband penetration observations and the control variables in the Phoenix Center study is too long and may have led to erroneous results.

Finally, even given the limitations of the methodology in the Phoenix Center study, their Broadband Performance Index *still shows the U.S. at 14th among the 30 OECD nations*. Thus the study appears to confirm the key problems that plague the U.S. broadband market -- availability and competition. These are the issues policymakers must address if we are to move to the top of this and other international rankings.

Myth #5:

If you compare individual U.S. states to other nations, then the United States is doing just fine in broadband adoption.

Reality:

Given that telecommunications policy is made at the federal level, state-to-country comparisons are meaningless. But even through this lens, half of the OECD nations outperform two-thirds of the U.S. states in household broadband adoption.

It is highly problematic to excuse poor U.S. broadband performance by shifting the frame of the debate to compare individual U.S. states to other countries. This analytical frame does not have much validity, as broadband and telecommunications policy is not made at the state level. However, even viewed in this frame, the situation is far from attractive.

In his recent speech, Commissioner McDowell argued, “Forty-three of our states have a higher household broadband adoption rate than all but five E.U. countries.” Leaving aside the propriety of comparing U.S. states to developing nations like Romaina and Latvia, the facts here are just plain wrong.

Free Press compared household broadband figures for the U.S. states from June 30, 2006 (data calculated based on FCC and Census data) with household broadband figures for 99 different countries as of June 30, 2006 (data from Point-Topic and the ITU). According to this data, Kentucky is

³² George S. Ford et. al., “The Broadband Performance Index: A Policy Relevant Method of Comparing Broadband Among Countries”, Phoenix Center Policy Paper Number 29, July 2007.

ranked 43rd in household broadband penetration among the 50 U.S. states and Washington, D.C., with 31.7 percent of households subscribing to broadband. In this comparison, we see that **43 of our states have a higher household broadband adoption rate than all but 15 E.U. countries, not the five cited by McDowell.**

Commissioner McDowell also argued: "Even large rural western states such as Montana, Wyoming, Colorado, Oklahoma, both Dakotas, Kansas, Oregon, New Mexico and others exhibit much stronger household broadband adoption rates than France or the U.K."

But according to Point-Topic and the ITU, as of June 30, 2006, France's household penetration rate was 46.6 percent, while the U.K. was just below at 46.3 percent. According to FCC Form 477 data as of the same date, the states that McDowell mentioned had the following household penetrations: Montana (33.4 percent), Wyoming (35.6 percent), Colorado (47.9 percent), Oklahoma (37.0 percent), North Dakota (20.4 percent), South Dakota (21.3 percent), Kansas (46.9 percent), Oregon (47.5 percent), and New Mexico (29.8 percent). *Thus only three of the nine states mentioned by McDowell actually had higher household penetration rates than France and the U.K., and the rest were far below.* In fact if France is used as the benchmark, then 35 U.S. states fall below it.

We have also seen efforts to compare regular per capita broadband penetration of certain U.S. states to certain OECD nations. But this is a complete apples-to-oranges comparison, because the OECD does not include 3G wireless in their measurements, while U.S. data does. For example, Commissioner McDowell made the case that New Jersey has a penetration of 30 lines per 100 inhabitants, while South Korea has 26. But when 3G wireless is excluded from the U.S. total (enabling a closer apples-comparison), New Jersey's penetration drops to 23 verses South Korea's 26 (all data as of June 30, 2006).

Assuming that the better metric is actually household penetration, and not per capita penetration: How does New Jersey compare to South Korea? In June 2006, 81 percent of South Korean homes had broadband, versus just 60.7 percent of New Jersey homes. (New Jersey has the second-highest home broadband penetration of the U.S. states, right behind Hawaii at 61.1 percent.)

The reality is, even under the mostly irrelevant state-to-country comparative lens, half of the OECD nations outperform two-thirds of the U.S. states in household broadband adoption. Put another way, the 14 countries ahead of the United States in the OECD rankings (as of June 30, 2006) had higher household broadband adoption rates than 34 of the 50 U.S. and Washington, D.C.

Figure 3: U.S. State-Level Broadband Data, June 2006³³

State	Percent of Homes Subscribing to Broadband (2006)	Rank	Cable Modem Availability Where Cable Systems Offer Cable TV Service (% of end user premises)	xDSL Availability Where ILECs Offer Local Telephone Service (% of residential end user premises)	Percent Rural Population
Hawaii	61.1	1	N/A	N/A	8.5
New Jersey	60.7	2	99.9	88.0	5.6
Connecticut	59.9	3	83.7	N/A	12.3
Massachusetts	57.3	4	98.9	N/A	8.6
California	56.8	5	97.2	85.9	5.6
New Hampshire	56.8	6	82.8	59.4	40.7
Maryland	53.3	7	97.6	75.1	13.9
Rhode Island	52.6	8	N/A	N/A	9.1
New York	51.8	9	98.8	78.1	12.5
Delaware	51.4	10	N/A	N/A	19.9
Nevada	50.4	11	N/A	85.3	8.5
Florida	48.2	12	95.9	88.0	10.7
Washington	47.9	13	93.6	80.1	18.0
Colorado	47.9	14	95.8	82.0	15.5
Oregon	47.5	15	89.7	80.7	21.3
Kansas	46.9	16	86.1	79.5	28.6
Virginia	46.1	17	95.9	65.6	27.0
DC	45.0	18	N/A	N/A	0.0
Arizona	45.0	19	91.4	66.9	11.8
Alaska	44.4	20	N/A	77.9	34.4
Georgia	44.1	21	89.1	87.3	28.4
Illinois	44.0	22	97.2	77.9	12.2
Texas	43.8	23	95.1	75.4	17.5
Nebraska	42.9	24	91.4	86.1	30.2
Minnesota	42.8	25	90.8	81.1	29.1
Maine	41.6	26	89.1	67.0	59.8
Utah	41.1	27	N/A	82.1	11.8
Pennsylvania	40.8	28	93.5	82.5	22.9
Ohio	40.2	29	94.8	81.0	22.6
Vermont	40.2	30	N/A	59.9	61.8
Wisconsin	39.0	31	96.3	76.1	31.7
Missouri	38.9	32	96.0	71.9	30.6
Indiana	37.6	33	94.0	74.2	29.2
Oklahoma	37.0	34	87.6	75.0	34.7
Michigan	36.8	35	91.7	66.4	25.3
Louisiana	36.1	36	87.1	87.4	27.4
Wyoming	35.6	37	N/A	77.3	34.9
South Carolina	34.5	38	84.2	78.2	39.5
Tennessee	33.5	39	95.2	80.7	36.4
Montana	33.4	40	83.3	76.1	45.9
North Carolina	33.3	41	94.8	82.7	39.8
Iowa	32.5	42	88.5	83.1	38.9
Kentucky	31.7	43	90.6	84.5	44.2
Idaho	31.4	44	83.3	75.6	33.6
West Virginia	30.8	45	88.2	68.3	53.9
Arkansas	30.1	46	77.3	65.6	47.5
New Mexico	29.8	47	79.5	75.0	25.0
Alabama	29.4	48	90.9	78.1	44.6
South Dakota	21.3	49	58.5	76.0	48.1
North Dakota	20.4	50	79.4	86.2	44.1
Mississippi	20.2	51	78.9	73.5	51.2
Nationwide	44.6		93.1	79.3	21.1

³³ Source: Free Press analysis of FCC and Census data. Household penetration data based on number of residential lines in each state reported in FCC Form 477 as of June 30 2006. Percentages assume one line per household, based on U.S. Census household estimates as of July 1 2006.

Myth #6:

The OECD doesn't count special access lines. This omission vastly understates our true level of broadband penetration.

Reality:

It is not at all clear that the OECD omits U.S. special access data lines from their tallies. However, if these lines are added to the U.S. OECD total, our ranking does not change -- we remain 15th in the world.

Critics have argued that the OECD's methodology does not account for special access lines (a type of broadband data platform that is typically subscribed to by large business customers). We could not verify this with OECD. Although its reports make explicit mention of not counting 3G mobile wireless subscribers, there is no mention of special access lines.

But even if it is indeed the case that the OECD has omitted U.S. special access data lines, it would not influence the U.S. ranking in the OECD tabulation. Using FCC data, and assigning a generous 1 million "missing" special access lines would change the December 2006 OECD penetration level in the United States from 19.6 to 19.9, still behind 14th-ranked Japan, which has 20.2 subscribers per 100 inhabitants. Thus this possible omission by the OECD does not appear to impact the overall results.

Myth #7:

The OECD doesn't include mobile wireless and Wi-Fi in their data, thus hiding the true level of U.S. broadband performance. While other countries are still talking about 3G, 4G technology is available to a majority of the United States.

Reality:

The OECD correctly doesn't include mobile wireless in their tallies, because these products simply don't offer true broadband service. But if they were included, the United States would fare even worse, because many European and Asian countries have far more developed mobile data markets. Furthermore, there are only a handful of 4G deployments in the U.S.

Much of the debate over the OECD data centers on the exclusion of 3G mobile wireless products from their tally. This exclusion makes perfect sense, given the fact that that inclusion of 3G would lead to erroneous results. The majority of mobile wireless telephony consumers have devices that can connect to networks at download speeds greater than 200 kbps. But these consumers don't use these products in the same way as they do a true broadband connection. Inclusion of 3G lines would obfuscate the data by commingling primary voice lines with primary data lines. (Indeed, the FCC has recognized this problem in its current broadband data NPRM proceeding, indicating that reporting mobile wireless data may inflate the true state broadband access and use).³⁴

But even if the OECD did include 3G lines, the United States would not likely fare better in the international rankings. The two largest 3G U.S. carriers have only made the service available to about two-thirds of the U.S. population, while deployment and adoption in Japan, South Korea and Western Europe has been far more extensive.³⁵

³⁴ In the Matter of *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership*, WC Docket No. 07-38, FCC 07-17, Released April 16 2007. The NPRM states, "More and more mobile voice service subscribers will be reported as mobile broadband subscribers merely by virtue of purchasing a broadband-capable handset, rather than a specific Internet plan."

³⁵ 3G Penetration in many European and Asian countries is far higher than in America. For example, a recent OfCom report showed that 3G penetration in the U.S. is just about 1 percent, but much higher in the U.K. (7.6%), France (5.7%), Germany (6.7%), Italy (18.6%), and Japan

Misconceptions about wireless broadband do not end with the discussion of 3G deployment. In his statement, Commissioner McDowell said, "The OECD conclusions really unravel when we look at Wi-Fi. The study simply omits the fact that one-third of the world's Wi-Fi hot spots are in the United States. Wi-Fi is not included in the OECD study unless it is used in a fixed wireless setting. I don't know about you, but I can't recall ever seeing any fixed wireless users cemented into a Starbucks. Most Americans who use Wi-Fi use it with personal portable devices. So it is impossible to determine how many Wi-Fi users are active at any given moment."

The notion that a pay-per-use Wi-Fi access at Starbucks is a substitute for a home broadband connection is dubious on its face. But it also confuses the picture about wireless in general. Given that very few of the mobile handheld devices sold and authorized by major carriers are Wi-Fi enabled, it is likely that the overwhelming majority of Wi-Fi users are home users on their local area networks. Indeed, some of the hype surrounding the new iPhone product is because it is one of the few Wi-Fi enabled cellular devices. But unfortunately for consumers, in order to use the Wi-Fi functionality users must subscribe to AT&T's EDGE data network (which averages 100-140 kbps on a good day), locking the customer into their exclusive data product.³⁶

Myth #8:

The OECD doesn't attempt to measure those who have broadband access in the workplace or at schools.

Reality:

The OECD does count all lines, both residential and business. But broadband access at work is no substitute for affordable home access.

One of the main critiques levied at the OECD in the April letter from the U.S. State Department is that the OECD doesn't attempt to capture "non-subscribers," such as those using a broadband connection at work or on a college campus. This complaint is common.

The fact is the OECD penetrations statistics count *all* lines, be they business or residential, with the exception of 3G mobile wireless phones. So they do capture business access. Regardless, workplace broadband connection is not an adequate substitute for a connection at home. Personal use of the Internet is often prohibited at the workplace. Neither would it be appropriate to bring family members to the office to access the network. Imagine for a moment if we had adopted this approach to the deployment of telephone service, and many people had to make all of their personal calls on the job.

(22.7%) (see "The International Communications Market, 2006" OfCom, November 2006). Use of all mobile technology is lower in the U.S. than most other OECD countries (the U.S. ranks 26th out of 30 in mobile penetration in the OECD; see <http://www.oecd.org/dataoecd/19/40/34082594.xls>); Countries like South Korea already have large scale deployment of 4G technology (see <http://www.eetimes.com/news/latest/showArticle.jhtml?articleID=189800030>).

³⁶ <http://www.dslreports.com/shownews/84844>

Myth #9:

European OECD countries are doomed to lose the broadband race because they don't have platform competition. The United States does have platform competition, and it will soon lead us to the top of the rankings.

Reality:

While it is true that some European countries have very little cable modem competition, they do have robust competition between providers on the same platforms. This "intramodal" competition is the result of open access policies. Unfortunately, the United States has abandoned intramodal competition in favor of intermodal competition, or competition between different platforms. This policy has failed to bring direct competition on broadband services.

To the extent that a coherent U.S. broadband policy exists, it is based on the idea that there is enough competition between the different broadband platforms to ensure a healthy and competitive market. The FCC's inclination to ignore the anti-competitive problems associated with platform monopolies has led to a stagnant cable-DSL duopoly residential broadband market. Almost 96 percent of all residential advanced service lines in the United States are provided over the cable and DSL platforms. In nearly every single locality where these two platforms are available, there is just one company providing cable and just one providing DSL.

These companies avoid head-to-head competition on their broadband offerings, choosing to bundle services and differentiate on adjacent services like telephony and video. Cable modem speeds are far faster than DSL, and these products cost considerably more. DSL providers offer lower-cost introductory offers, but these services are very slow and must be bundled with traditional telephony. The best hope for so-called "third-pipe" competitors comes from mobile wireless companies, many of which are owned by DSL incumbents and also have chosen to avoid head-to-head competition.

Simply stated, two competitors, whether on the same or different technology platforms, does not constitute a competitive market. Despite this basic fact, those seeking to excuse the poor U.S. broadband performance boast about the near equal market shares of the cable and DSL platforms here in America, something not widely seen elsewhere. They equate this with real competition.³⁷

It's true that in some EU countries there is little competition from alternative platforms like cable. But this has little to do with government policy, and a lot to do with the long history of television provision in these countries, where there are multiple, well-funded public broadcasting channels and a high adoption of satellite TV services.

But it is also true that in certain OECD countries there is robust platform competition. Consider the No. 1-ranked OECD nation, Denmark. According to the OECD, the leading platform there, DSL, has a 61 percent share of the market, while non-cable and DSL platforms enjoy a 9 percent share.

Here in the United States, our leading platform, cable, has about 52 percent marketshare, but the share held by non-cable or DSL providers (such as satellite and wireless providers) is just 4.5 percent. These numbers are confirmed in the latest Point Topic/ITU data from March 2007, which shows that third platforms in the U.S. have a 4 percent share, while they hold a 10.5 percent share in Denmark.

³⁷ For example see the Comments of Verizon (p. 24), In the Matter of *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, GN Docket No. 07-45.

Other OECD nations also have significant amounts of platform competition, including some above and below the United States in the rankings. (According to the OECD, the leading platform's share is below the U.S. level in South Korea, the Czech Republic, Hungary and Canada; and is below 65 percent in Japan, Slovak Republic, Austria, Netherlands, Denmark, Sweden, Belgium, Portugal and Switzerland).

But even in the countries with high single-platform domination, we see robust competition between multiple service providers. In France, where DSL accounts for 95 percent of lines, non-incumbent providers control one-third of the market and their share is growing.³⁸ In Iceland, where DSL accounts for 97 percent of lines, non-incumbent providers account for nearly 40 percent of the market.³⁹ However, in the U.S. residential market, local DSL providers have a near-monopoly control over their platform.

Pinning our broadband policy goals (faster universal deployment and adoption of high-speed, low-cost, high-value networks) on intermodal platform competition was always a risky gamble, and the evidence strongly suggests that it is a failed approach. In oligopolistic markets such as telecom, the providers have too much incentive to avoid head-to-head competition.

Myth #10:

Other countries overall broadband growth rates are slowing. The United States is poised to leap ahead. Also, the United States has a high fiber-to-the-home (FTTH) growth rate, and thus will overtake other nations.

Reality:

Many of the countries ahead of the United States in total and household-level broadband adoption still have higher and increasing levels of absolute growth. The U.S. broadband penetration growth rate during the second half of 2006 was the second-lowest in the entire OECD. The relatively high U.S. FTTH growth rate is due to the fact that until recently there were almost no FTTH connections.

Commissioner McDowell outlined this argument well: "Europe is witnessing a significant slow down in its broadband take rate. It has fallen from a 23 percent annual penetration growth rate to only 14 percent. Growth stalled in a number of countries including Denmark and Belgium (with just 4 percent growth). And France – a relative shining star - exhibited just 10 percent growth."⁴⁰

Free Press explored what is specifically going on in these other countries, and how the changes in their broadband adoption compare to that seen here in America. It is important to note that growth *rates* are not as important as *absolute* growth over time. Growth *rates* can be large even if the absolute increase is small (for example, an increase from 1 to 2 is a 100 percent growth rate, while an increase from 40 to 50 is only a 25 percent growth rate).

According to the December 2006 OECD data, 7 of the 14 countries ahead of the United States in the penetration rankings had a higher raw penetration growth from December 2005 to December 2006 than they did for the year before.⁴¹ The United States itself saw a decline in the level of raw penetration growth in the most recent year compared to the year prior. (The U.S. penetration rate increased from

³⁸ Point Topic, Global Broadband Statistics Data (a subscription based service). Available at <http://point-topic.com/home/gbs/>.

³⁹ *Ibid.*

⁴⁰ This data appears to come from a report by a European trade group, the European Competitive Telecommunications Association (ECTA). The data is from the ECTA's "Broadband Scorecard" and is as of October 2006 (available at <http://www.ectaportal.com/en/basic650.html>). However, the original sourcing of the data is unknown and contrasts with the data provided by the OECD.

⁴¹ The countries were Denmark, Netherlands, South Korea, Belgium, United Kingdom, Luxembourg and France.

12.9 to 16.8 from December 2004 to December 2005, compared to an increase from 16.8 to 19.6 from December 2005 to December 2006.) In total, the United States ranked 20th in the absolute increase in broadband penetration from June to December 2006, and ranked 24th during the 2005-2006 period (see Figure 4).

Figure 4: Year-to-Year Absolute Change in Broadband Penetration (OECD)

Country (sorted in descending order by absolute increase in Dec. 2005 to Dec. 2006 penetration)	Year to Year Absolute Change In Broadband Penetration (OECD)					
	Dec	Dec	Dec	Dec	Dec	Slowing ('05 to '06)?
	2001-2002	2001-2003	2003-2004	2004-2005	2005-2006	
Denmark	3.8	4.8	6.0	6.0	6.9	No
Netherlands	3.2	4.8	7.2	6.3	6.5	No
New Zealand	0.9	1.0	2.1	3.4	5.9	No
Ireland	0.3	0.5	2.5	3.4	5.8	No
Sweden	2.7	2.6	3.8	5.8	5.7	Yes
United Kingdom	1.7	3.1	5.1	5.4	5.7	No
Norway	2.3	3.8	6.8	7.1	5.6	Yes
Hungary	0.3	1.4	1.6	2.7	5.6	No
Luxembourg	1.2	2.0	6.3	5.1	5.5	No
Australia	0.9	1.7	4.2	6.1	5.4	Yes
Switzerland	3.6	4.5	7.4	5.6	5.4	Yes
France	1.8	3.1	4.6	4.7	5.1	No
Finland	4.2	4.0	5.4	7.6	4.7	Yes
Poland	0.2	0.5	1.3	0.3	4.5	No
Czech Republic	0.1	0.3	2.0	3.9	4.2	No
Belgium	4.3	3.0	3.8	2.8	4.2	No
Germany	1.8	1.5	2.8	4.6	4.1	Yes
Spain	1.8	2.4	2.7	3.6	3.7	No
Korea	4.6	2.4	0.6	0.6	3.7	No
Austria	2.0	2.0	2.5	4.0	3.2	Yes
Greece	0.0	0.1	0.3	1.0	3.2	No
Slovak Republic	0.0	0.3	0.7	1.5	3.2	No
Italy	1.0	2.4	4.0	3.8	2.9	Yes
United States	2.4	2.8	3.2	3.9	2.8	Yes
Canada	3.2	3.0	2.5	3.4	2.8	Yes
Japan	3.9	4.6	4.3	2.6	2.6	Yes
Portugal	1.5	2.3	3.4	3.3	2.3	Yes
Turkey	0.0	0.3	0.4	1.4	1.7	No
Mexico	0.2	0.1	0.5	1.3	1.3	No
Iceland	4.7	5.9	3.9	8.5	1.2	Yes

Thus, unlike the United States, none of the three countries McDowell mentioned are actually exhibiting slowing growth in the absolute level of broadband penetration.

Furthermore, if you look at the less informative metric of growth *rate*, 10 of the 14 countries ahead of the United States in the OECD rankings had a higher year-to-year penetration growth rate, as did *all* of the countries below the United States. In fact from June 2006 to December 2006, only one of the 29 other OECD nations (Austria) had a lower growth rate in broadband penetration than the United States (see Figure 5).

Figure 5: Broadband Penetration Growth Rate (OECD)

Country (sorted in descending order by Dec. 2006 penetration)	Semi-Year to Year Broadband Penetration Growth Rate (Percent Change In Broadband Penetration from prior 6 months, OECD)					Year to Year Broadband Penetration Growth Rate (Percent Change In Broadband Penetration from prior year, OECD)					
	June 2005	Dec 2005	June 2006	Dec 2006	Slowing?	Dec 2002	Dec 2003	Dec 2004	Dec 2005	Dec 2006	Slowing?
Denmark	14.7	14.7	17.2	8.9	Yes	86.4	58.5	46.2	31.6	27.6	Yes
Netherlands	18.4	12.4	13.8	10.5	Yes	84.2	68.6	61.0	33.2	25.8	Yes
Korea	2.8	-0.4	3.9	10.1	No	26.7	11.0	2.5	2.4	14.5	No
Switzerland	16.0	13.8	13.4	8.9	Yes	180.0	80.4	73.3	32.0	23.5	Yes
Iceland	19.2	23.0	2.2	2.4	No	127.0	70.2	27.3	46.7	4.7	Yes
Norway	23.0	20.3	12.3	11.8	Yes	121.1	90.5	85.0	48.0	25.6	Yes
Finland	25.5	20.3	11.1	8.9	Yes	323.1	72.7	56.8	51.0	21.0	Yes
Sweden	13.8	23.0	11.8	14.5	No	50.0	32.1	35.5	40.0	28.0	Yes
Canada	9.1	9.4	6.7	6.2	Yes	36.0	24.8	16.6	19.3	13.3	Yes
Belgium	17.4	0.5	5.5	16.4	No	97.7	34.5	32.5	18.1	22.8	No
United Kingdom	28.6	17.8	22.0	11.2	Yes	283.3	134.8	94.4	51.4	35.7	Yes
Luxembourg	20.4	26.3	20.1	13.9	Yes	400.0	133.3	180.0	52.0	36.8	Yes
France	21.9	18.8	16.4	14.4	Yes	180.0	110.7	78.0	44.8	33.2	Yes
Japan	9.3	7.3	8.0	6.1	Yes	177.3	75.4	40.2	17.3	14.5	Yes
United States	12.4	15.9	14.3	2.1	Yes	53.3	40.6	33.0	30.2	16.6	Yes
Australia	41.6	26.6	26.1	10.6	Yes	100.0	94.4	120.0	79.2	39.4	Yes
Austria	23.8	12.8	25.5	-2.0	Yes	55.6	35.7	32.9	39.6	23.0	Yes
Germany	21.4	27.5	16.2	13.1	Yes	78.3	36.6	50.0	54.8	31.4	Yes
Spain	14.8	25.8	16.2	13.2	Yes	150.0	80.0	50.0	44.4	31.6	Yes
Italy	23.5	19.0	10.9	11.8	No	142.9	141.2	97.6	46.9	24.0	Yes
New Zealand	46.8	17.4	44.4	20.1	Yes	128.6	62.5	80.8	72.3	73.4	No
Portugal	20.7	16.2	12.2	7.3	Yes	150.0	92.0	70.8	40.2	20.4	Yes
Ireland	30.3	55.8	37.3	35.5	Yes		166.7	312.5	103.0	86.1	Yes
Hungary	27.8	37.0	23.8	52.3	No	100.0	233.3	80.0	75.0	88.6	No
Czech Republic	12.0	128.6	46.9	13.0	Yes	100.0	150.0	400.0	156.0	65.9	Yes
Poland	57.1	-27.3	120.8	30.5	Yes	200.0	166.7	162.5	14.3	188.3	No
Slovak Republic	60.0	56.3	16.0	95.3	No			233.3	150.0	126.5	Yes
Greece	100.0	75.0	92.9	70.8	Yes			300.0	250.0	229.4	Yes
Turkey	71.4	75.0	42.9	28.3	Yes			133.3	200.0	83.3	Yes
Mexico	11.1	120.0	27.3	26.4	Yes	200.0	33.3	125.0	144.4	60.9	Yes

What do growth rates portend for the future? According to Point-Topic and the ITU, the total number of U.S. broadband subscriptions increased 5 percent from December 2006 to March 2007 (quarterly growth) and increased 22 percent from March 2006 to March 2007 (annual growth). But four out of the five countries that are directly below the United States in the OECD rankings had higher levels of quarterly and annual subscriber growth. Three of the five countries directly ahead of the United States in the OECD rankings had higher annual growth; and two of the five had higher quarterly growth.⁴² All of this data suggests that in the near-term the United States is likely to remain at 15th if not drop even further in the international broadband rankings.

Verizon has touted their recent rollout of fiber-to-the-home (FTTH) technology as proof America is poised to overtake Europe and Asia. Commissioner McDowell echoed this sentiment, portraying the U.S. fiber market as one to be envied. In his recent speech, he said: "The U.S. also is home to the world's fastest fiber-to-the-home market, with a 99 percent annual growth rate in FTTH subscribers compared with a paltry 13 percent growth rate in Europe. Japan, just ahead of us in the OECD ranking, has a 60 percent FTTH growth rate despite its far more advantageous population density."

⁴² Point Topic, Global Broadband Statistics Data. (a subscription based service). Available at <http://point-topic.com/home/gbs/>.

All of this is true. But growth rates must be put into proper context. For example, in June 2005 there were just 83,000 residential fiber connections in the U.S. (according to the FCC's Form 477). One year later, this had jumped to 442,000 connections -- a 400 percent increase. But by December 2006, the total fiber penetration in the United States was just 0.3 lines per 100 inhabitants, more than 20 times lower than the level in Japan. In fact, Japan has eight times the number of fiber lines as the United States, despite having a population that is 60 percent smaller.

The fact is that growth rates always look impressive when starting from a very low level, and they look much less impressive when a market is close to its saturation point. From December 2005 to December 2006, Greece's broadband penetration level grew 230 percent, from 1.4 to 4.6. But over this same period of time, the U.S. broadband penetration level increased by only 17 percent, from 16.8 to 19.6. What does this say about these two countries? Is Greece poised to continue this growth, and overtake the U.S. by 2008? Of course not. New technologies tend to follow an "S-curve" adoption pattern, where growth rates are rapid initially and then taper off. Clearly the U.S. FTTH market is on a much lower part of its S-curve relative to Japan, which was an early leader in FTTH deployment and adoption.

What's more, in the United States the only large provider deploying FTTH is Verizon, and the company is doing so in a very limited fashion. According to Verizon's Web site, its top fiber offering is 30 Mbps download/5 Mbps upload for a staggering \$200 per month.⁴³ But in Japan, offerings like Yahoo's 100 Mbps symmetrical "triple-play" product are commonly found for about \$40 per month.⁴⁴

The U.S. fiber market may be one of the "fastest growing" markets, but only because we are starting from almost zero. The fact is less than one-half of 1 percent of all U.S. households subscribe to FTTH service. Verizon's own optimistic goal is to pass only about 10 percent of U.S. homes by 2010. (They currently pass about 5 percent of homes, with less than 1 percent of all U.S. homes subscribing to FiOS service, but not necessarily the broadband Internet offering.)

⁴³ The month-to-month price for this tier of FiOS is \$199.95 per month, with a \$79.99 installation fee. If a user agrees to a long-term (year or more) contract, the service can be purchased for \$179.95 per month with a waiver of the installation fee. See <http://www22.verizon.com/content/consumerfios/packages+and+prices/packages+and+prices.htm>.

⁴⁴ Yoshikazu Okamoto and Taylor Reynolds, "Multiple Play: Pricing and Policy Trends," Directorate for Science, Technology and Industry, Committee for Information, Computer and Communications Policy, Working Party of Telecommunication and Information Services Policies, Organization for Economic Cooperation and Development, April 7, 2006.

Why International Rankings Matter

As of June 30, 2006, about 45 percent of U.S. households subscribed to broadband service.⁴⁵ If the U.S. household penetration level were as high as in Denmark or the Netherlands (currently at 73 percent), this country would have an additional 32 million residential subscribers. If the U.S. household penetration level were as high as Canada's (currently at 64 percent), this would translate into an additional 23 million residential subscribers.

These differences have real world consequences. In 2003 when residential broadband penetration was at 20 percent, economists estimated the annual consumer surplus from broadband to be about \$10 billion per year.⁴⁶ At the time, they projected that if broadband were in 50 percent of all U.S. homes, consumers would realize a \$38 billion annual surplus; and if household broadband penetration were at 95 percent, the consumer surplus would be \$350 billion annually. Because of network effects, the *benefits of higher broadband penetration accumulate exponentially*, thus even a minor increase in our international broadband ranking has tremendous positive impact on the American economy.

A 2007 study by researchers at the Brookings Institution and MIT estimated that a one-digit increase in the U.S.'s per capita broadband penetration (the metric used by the OECD) equates to an additional 300,000 jobs.⁴⁷ Thus our slide from 12th to 15th place during the latter half of 2006 equals approximately 240,000 lost jobs. (Current U.S. broadband penetration stands at 19.6, while 12th-ranked Luxembourg stands at 20.4 subscribers per capita.) If our broadband penetration were as high as No. 1 ranked Denmark, we could expect approximately 3.7 million additional U.S. jobs.

Though our position in the international rankings is cause for concern, even more troubling is how we have progressed in recent years relative to other countries. The growth trends indicate that the United States is likely to continue to fall behind the rest of the world in broadband penetration, which will have lasting and significant effects on the U.S. economy.

⁴⁵ This figure is based on official FCC broadband data reported in "High-Speed Services for Internet Access as of June 30, 2006," Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission; calculated assuming one line per household, based on July 2006 Census household estimates.

⁴⁶ Crandall et. al., "The Effect of Ubiquitous Broadband Adoption on Investment, Jobs, and the U.S. Economy," Criterion Economics, L.L.C., September 2003.

⁴⁷ Robert Crandall, William Lehr and Robert Litan, "The Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of U.S. Data", June 2007. Available at <http://www.brookings.edu/views/papers/crandall/200706litan.htm>.

**The Bottom Line:
The U.S. Broadband Problem Is Very Real and
Shooting the Messenger Won't Solve It**

The United States has a broadband problem. All of the excuses offered to explain away America's performance on the international broadband stage are just that: excuses. The fact is that many countries continue to deploy and adopt broadband at a higher level than in America. Consumers in these countries pay far less for far more service, and have many more marketplace choices. American consumers are trapped in a duopoly marketplace with no relief in sight. The boasts of "third-pipe" competition from wireless providers ring hollow, as the offerings from these companies are slow, expensive, and extremely restrictive, making them unattractive as a true competitor to the current duopoly.

Incumbents argue that the marketplace will save our sinking ship, even as the water level rises. This blind faith in the market would be reasonable if the U.S. telecommunications market was perfectly competitive. But it simply is not, and it's high time to face reality.

We rely on the market forces of a duopoly to produce robust cross-platform competition at our peril. When the chief supporters of the status quo, wait-and-see approach to the arrival of a third competitor to DSL and cable are the incumbents themselves, we should understand that they do not expect it will happen.

Further, we can see that most of the global leaders in broadband performance have embraced open access policies that bring competition both between and within technology platforms. This combination of "intermodal" and "intramodal" competition is the key to regaining our once-lofty stature as the world's technology leader. We must not sacrifice the long-term economic and social interests of the country for the short-term interests of a duopoly marketplace that has long shielded itself from free market competition.

This is a paradigm-shifting moment for American telecommunications. It is clear that our current do-nothing policy is a failure. Policymakers who are serious about America's economic and social well-being should reject the excuses and focus on policies that bring real broadband competition to American consumers.