

Explaining International Broadband Leadership

Executive Summary

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It is hard to follow broadband telecommunications policy without hearing almost weekly that the United States ranks 15th out of 30 Organization for Economic Cooperation and Development (OECD) nations in broadband adoption. But it is much less apparent why the United States is behind. Indeed, relatively little work has been done to understand why some nations are ahead, and why some, like the United States, are lagging. By examining OECD nations through statistical analysis and in-depth case studies of nine nations, including the United States, this report attempts to do just that.

In identifying factors that have spurred broadband performance in other nations, we present key findings that government and the technology industry must recognize if we are to find the right course for the United States. And we propose key policy recommendations that will drive greater broadband performance.

Key Findings and Conclusions:

- **The United States is behind in broadband deployment, speed and price.** Despite what some advocates and analysts claim, the United States is behind in broadband performance and its rank has been falling since 2001.
- **Don't blame it all on poor policies.** It is tempting, particularly for those seeking a more proactive

national broadband policy, to blame all or most of the United States' poor performance on poor or non-existent policies. In fact, our analysis suggests that non-policy factors explain about three-quarters of the difference between nations in broadband performance. For example, the fact that over 50 percent of South Koreans live in large, multitenant apartment buildings makes it significantly cheaper on a per-subscriber basis to roll out fast broadband there compared to the United States, where many people live in single-family suburban homes. Likewise, the fact that the United States has the longest copper loop lengths (among 13 OECD countries where data were available) makes it more expensive to deploy high-quality and low-cost broadband here.



- **Don't ignore the role that good policies can play.** What the “it's all environment” proponents miss is that broadband policies, while not the most important factor, do matter, and nations that ignore policy, assuming that the “market” can do all the heavy lifting, will fare worse than if they had smart broadband policies.
- **One size doesn't fit all.** Too many advocates in the broadband debates look longingly overseas for the perfect broadband model to import, whether it's unbundling from France, structural separation from the United Kingdom, or municipal provision of networks in countries like Sweden and the Netherlands. But given the significant differences in economic, social, geographic and political factors between nations, many of these experiences are not easily transferred from one nation to another. For example, a major reason why Japan leads the world in high speed fiber-optic deployment is that its companies, in particular the partially government-owned incumbent telecom provider Nippon Telegraph and Telephone (NTT), face significantly less pressure from capital markets for short-term profits. As a result, unlike in the United States, it's easier to invest in faster fiber deployment than what market forces alone would generate. But broadband policy can do little to change U.S. capital markets' expectations for short-term financial performance. This means that while we can and should learn from other nations' broadband policies and performance, in the end we have to find our own way and develop policies that fit U.S. needs and conditions.
- **We can learn from best practices in other nations.** While we shouldn't look to other nations for silver bullets, or assume that practices in one nation will automatically work in another, we can and should look to broadband best practices in other nations, particularly from individual programs and initiatives to spur broadband deployment and broadband demand, and where appropriate, emulate those. Doing so will enable the United States to increase our broadband performance faster than in the absence of these proactive policies. These best practices include the following:
 - *Leadership Matters:* Overall, at the broadest level, nations with robust national broadband strategies—that is, those that make broadband a priority, coordinate across agencies, put real resources behind the strategy, and promote both supply and demand—fare better than those without. In particular, South Korea, Japan and Sweden established robust national strategies that not only shaped their broadband policies but also helped gain widespread political support for them. And in the case of South Korea and Japan, these strategies had support at the highest level of government and business. In Japan, for example, Prime Minister Yoshiro Mori appointed the Information Technology Strategy Council, headed by Sony Chairman Nobuyuki Idei, which crafted a strategy to make Japan the “world's leading IT nation” by 2005.
 - *Incentives Matter:* Because it is expensive for operators to deploy broadband networks, particularly faster next-generation networks in rural areas, many countries want to increase broadband supply beyond and/or ahead of that which the market alone provides. The role of government financial incentives in spurring broadband deployment in leading broadband nations has largely been underappreciated in the United States, where many analysts have regarded local loop unbundling regulations as the key to the leading broadband nations' success. In fact, a careful analysis suggests that many leading nations have effectively used financial incentives to spur broadband deployment. For example, the Swedish government aggressively used subsidies to spur broadband deployment, particularly in rural areas of the country. It allocated a total of more than \$800 million. For the U.S. government to match this investment as a share of GDP, it would need to invest more than \$30 billion.
 - *Competition Matters:* Many broadband advocates believe that broadband success in European countries, especially in France, is due in large

measure to unbundling regulations, and they claim that if only the United States would adopt unbundling policies to spur *intramodal* competition, it too would rocket ahead. These advocates are right in one sense: competition is important to broadband success. But they overlook several key facts. First, *intermodal* competition between separate physical networks (e.g. between digital subscriber line (DSL) services and cable modem services) also spurs broadband success. Second, intramodal competition is not a panacea. A number of European Union (EU) nations with similar unbundling regimes as France—for example, Italy and Spain—rank below the United States in terms of broadband adoption. Furthermore, most EU nations adopted unbundling regulations because they had almost no intermodal broadband competition—in part because their cable regulations significantly limited investment in cable modem service. Moreover, although proactive unbundling policies may have spurred broadband DSL adoption in some countries, aggressive unbundling policies, particularly of next-generation networks (e.g. fiber and high-speed cable), run the risk of limiting investment by both incumbents and competitors in these networks and may result in what might be termed modest-speed “DSL cul-de-sacs” on their relatively short copper loops.

- o *Demand-Side Policies Matter.* Given that only around two-thirds of Americans have a computer at home, even the most robust supply-side policies will not produce universal broadband usage. Other nations have taken the demand side more seriously. The Swedish government subsidized personal computer purchases via tax deductions for companies that bought computers for their employees’ personal use; and as a result, almost 90 percent of Swedes can get access to the Internet at home on a PC. The sole mission of South Korea’s Agency for Digital Opportunity and Promotion Korea is to promote digital literacy and access to computers, including through training programs to let people buy computers

through a low-priced purchase installment system.

- **It’s high-speed networks, stupid.** As more and more households subscribe to broadband, the next big challenge is getting faster broadband. The current move to fiber and the impending move to high-speed cable is enabling many U.S. consumers to access broadband at speeds higher than many places in Europe. In fact, it appears that as a share of total households, almost three times as many homes can subscribe to fiber-optic broadband in the United States than in the EU as a whole. However, even in the United States, these rates are relatively low compared to fiber availability in Japan and South Korea. Significantly though, it appears that no nation other than the United States is seeing extensive high speed network (e.g. fiber) deployment in moderate-density areas, in part reflecting America’s uniquely suburban nature.

Building a More Effective Broadband Policy

If the United States is to maximize its broadband performance, it needs more robust and effective national broadband policies. This process should start with a reformulation of the current debate:

- **End the “either-or” shouting matches.** The U.S. broadband policy environment is characterized on the one hand by market fundamentalists who see little or no role for government, and see government as the problem; and on the other by digital populists who favor a vastly expanded role for government (including government ownership of networks and strict and comprehensive regulation, including mandatory unbundling of incumbent networks and strict net neutrality regulations) and who see big corporations providing broadband as a problem. Given the policy advocacy and advice they are getting, it is no wonder that Congress and the Administration have done so little.
- **Instead, have a pragmatic discussion about how to improve U.S. broadband performance.** Whatever the outcome of these debates, we should

be able to agree that the United States can do better on broadband. The most important step the United States can take as a nation to improve our broadband performance may be to move beyond the divisive and unproductive debate over broadband policy that revolves around arguments about whether we are behind or ahead; whether our relative position is due to policy or other factors; whether unbundling is a magic bullet or an investment killer; and of course, whether net neutrality is the greatest threat to the Internet since its inception or something that is an anachronistic concept. It's time to reject the view that somehow this is a zero-sum game between corporate America and government. Both must clearly play a leadership role if we are to make headway on broadband performance. This means shifting the debate to focus on the key issues: how to enact public policies that emphasize the primary goal—getting as many American households as possible using high-speed broadband networks to engage in all sorts of online activities, including education, health care, work, commerce, and interacting with their government. To do that, we recommend several measures.

To encourage the development of broadband infrastructure (supply) in the United States, we recommend that U.S. policymakers take the following steps:

1. **Enact more favorable tax policies to encourage investment in broadband networks, such as accelerated depreciation and exempting broadband services from federal, state, and local taxation.**
2. **Continue to make more spectrum, including “white spaces,” available for next-generation wireless data networks.**
3. **Expand the Department of Agriculture’s Rural Utilities Service Broadband Program and target the program to places that currently do not have non-satellite broadband available.**
4. **Reform the federal Universal Service Fund program to extend support for rural broadband**

to all carriers, and consider providing the funding through a reverse auction mechanism.

5. **Fund a national program to co-fund state-level broadband support programs, such as Connect Kentucky or North Carolina e-NC Authority.**
6. **Promote the widespread use of a national, user-generated, Internet-based broadband mapping system that would track location, speed, and price of broadband.**
7. **State and local governments should take action to make it easier for providers to deploy broadband services, including making it easier to access rights-of-way.**

To encourage the growth of consumer demand for broadband, we recommend that U.S. policymakers take these steps:

8. **Support initiatives around the nation to encourage broadband usage and digital literacy.**
9. **Fund a revitalized Technology Opportunities Program, with a particular focus on the development of nationally scalable Web-based projects that address particular social needs, including law enforcement, health care, education, and access for persons with disabilities.**
10. **Exempt broadband Internet access from federal, state, and local taxes.**
11. **Support new applications, including putting more public content online, improving e-government, and supporting telework, telemedicine, and online learning programs.**

By adopting these recommendations, U.S. policymakers would give broadband providers the economic incentives to invest in broadband infrastructure both in rural and urban areas of the country and give consumers the incentives to subscribe to broadband, particularly higher speed broadband.

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