



## **AEI-Brookings Joint Center Policy Matters 07-12 Net Neutrality: The Prequel. John W. Mayo. March 2007.**

Occasionally, an economic policy issue arises with such intensity that it creates the risk of being fashioned more by emotion than economic sensibilities. No better current example exists than the race to embrace or vilify Net Neutrality; a policy proposal which would, among other things, impose regulatory constraints on the network management and pricing of network providers. One only need listen to the rhetoric to get an inkling that extremists have taken over the debate. One side argues that "The telecommunications industry is really trying to destroy our Internet!" while the other side argues that telecommunications markets are "perfectly contestable" and that the future of Internet is assured because of this competition. Such hyperbole and rhetoric are not the foundation for sound economic policy.

It is time to step back from the rhetorical brink. A more cerebral and less visceral approach is required. And while not convenient for those who seek to make policy on the basis of sound bytes, economic policy for the future of the telecommunications industry and the Internet requires that we first explore the industry's fundamentals. What is working, and what is not? And what dynamics can or might be put in play to assure a healthy future in which consumers and firms are able to fully exploit the Internet to improve the quality of their lives and enterprises? In short, we need to consider the prequel before we can have a sensible debate about Net Neutrality.

So where does the prequel begin? From an economic perspective, we can begin with no firmer foundation than with an exploration of the demand for, and supply of "things Internet". At the risk of modest oversimplification, but with no real injustice, the demand side consists of legitimate, growing and seemingly insatiable demands by consumers -- both households and firms -- for information. This information may be sent or received in the form of voice, data, or, increasingly, video. This latter area of growth is ravenous in its consumption of network capacity. For example, downloading a one hour television show consumes 1,700 times the Internet bandwidth as downloading a typical website. And, downloading a single high definition movie consumes more bandwidth than does the downloading of over 35,000 web pages. While Internet infrastructure firms such as AT&T and Verizon will typically view content and applications providers as enhancing the demand for, and value of, their networks, the prospect of applications providers' high-end offerings outstripping the available capacity has become a bona fide risk.

This means that, on the supply-side, in order for the Internet to continue to flourish the network must be expanded and managed. To date, this network expansion has largely been funded in Adam Smithian fashion by private firms, which have anticipated profits from building networks that will be demanded by consumers. The resulting expansion of broadband facilities in the United States has been laudable. In 2000, there were less than 5 million broadband lines in the United States. In contrast, today there are over 65 million broadband lines in service, a number which grew by a remarkable 50 percent in the most recently

recorded twelve month period. Beyond the growth of broadband deployment, this period has also witnessed continued declines in the price of broadband for consumers and more choice as consumers increasingly may choose from among competing broadband networks.

The expansion of the network of networks, which collectively constitutes the infrastructure for carrying Internet information is, however, anything but cheap. Telephone companies have made plans to spend nearly \$25 billion on wireline broadband deployment. For its part, Sprint has announced a "first to market" plan to make wireless WIMAX broadband available to 100 million people in 2008. And the cable firms have already spent over \$100 billion converting their physical plant from one way to two-way networks.

Even with the rapid expansion in network capacity that will be enabled through planned investments, the rapidly growing and increasingly sophisticated nature of consumer demands for content and applications that will run over the network infrastructure will require increased network management. In a world of digital packet switching, some Internet applications (e.g., email) may be simply "tossed" into the network and arrive without quality degradation, while other applications (e.g., video streaming) requires active network management to assure that the video arrives "unscrambled".

Another relevant dimension of the prequel is whether the supply of broadband is now, or is likely to be, subject to anticompetitive activity. A dispassionate reading of either the history or current status of the telecommunications industry suggests that we ought not to rely solely on laissez faire ideology to assure that the benefits of competition are fully realized. At the same time, the present trends that include rapidly rising output and declining prices are reassuring. It is also, or should be, therefore, calming that no less than three federal agencies (the Department of Justice, the Federal Trade Commission and the Federal Communications Commission) have telecommunications industry oversight responsibilities under existing laws. Collectively, these agencies may, and ought to, set regulatory requirements that are "in the public interest," prevent "contracts, combinations or conspiracies in restraint of trade," and prevent "unfair methods of competition."

Finally, do firms have adequate incentives to continue to deploy these broadband, Internet-enabling networks and the freedom to manage them efficiently? For the moment, the answer seems to be "yes". Public policy cannot, however, simply take these incentives for granted. Indeed, basic economic principles suggest that the government actively look for ways to reduce barriers to intermodal competition. Such efforts will create and assure greater rivalry and competition between the telephone and cable companies. This, in turn, will stimulate suppliers to provide the highest possible quality network services at the lowest possible rates. Additionally, the viability of wireless broadband rests in part of the ability of firms to secure adequate spectrum to enable wireless firms to fully support higher levels of future consumer demand. And public policy officials will surely want to also ensure that broadband supply over power lines is not impeded.

Similarly, and importantly, these same principles suggest that the government tread lightly -- and only as far as is required to correct palpable market failures -- in the operations and business models of these companies. In this spirit, policymakers may wish to substantively explore ways in which regulatory and antitrust oversight can be fashioned to be as unobtrusive as possible, but both swift and effective in the event of market failures. In light of these numerous foundational considerations, it is arguably more important for policymakers to be

attuned to the substance of the prequel than the rhetoric of present Net Neutrality debate as they consider the future of telecommunications policy.

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