

Remarks of Ruth Milkman, Chief of Staff
Federal Communications Commission
Progressive Policy Institute
May 27, 2014

Thank you, Hal for inviting me here today, and for organizing a great group of speakers on an important topic.

Although I have been a communications lawyer for more years than I would care to admit, before I became hooked on telecom policy, I was an English major. One of the great novels of the 20th century is *Howards End* – which has a preface of two words: Only Connect. And therefore I am one of the few people who can say honestly that my degree in English literature prepared me for a career at the FCC. Since I joined the FCC in 1986, in and out of government and private practice, I've been interested in interconnection issues. So I'm delighted to join this illustrious panel, and kick things off with a few thoughts.

Interconnection is, of course, key to all successful networks. A network, by definition, connects. First a network connects component parts to one another to form a whole. And interconnection takes this to the next level. Interconnection is the connection of one network to another to form a network of networks.

These connections and interconnections drive a network's value. They are the source of the positive network effects that benefit the public. That's why, from the beginning, interconnection has always been a matter of public policy concern.

The link between interconnection and success is true of all networks. The nation's railroad system, for example, evolved from short lines in the mid-1800s, to regional lines interconnecting cities, and

eventually to a transcontinental railroad network connecting the nation, allowing passengers and goods to traverse the country with unprecedented speed and ease.

So, too, the electric grid. Electrical networks in the United States began as insular systems that serviced specific geographic areas. But with the advent of long distance power transmission and the electrification of the country in the early 20th century, the electric grid evolved into a widespread interconnected network spanning large distances, allowing electric utilities to reap the benefits of economies of scale, increased reliability, and load balancing.

And communications networks are no different. The first telephones were not networked but individually wired together for private use. But as use of the device spread, telephones were wired to exchanges, exchanges wired together with trunks, trunks wired into networks, and eventually networks interconnected to form the public switched telephone network on which consumers and businesses have relied for nearly a century.

All of these successful networks share a common theme – the interconnection that led to the network’s success was encouraged (and sometimes mandated) by governmental efforts and regulatory oversight. But it is important to note that there have been diverse regulatory approaches to ensuring effective interconnection. Some have used a lighter touch; others a heavy hand. Often price regulation has been a part of the package. At bottom, however, the fact is that a network without connections and interconnections is one that simply doesn’t work. Disconnected networks do not serve the public interest.

With respect to communications networks, interconnection is a part of what the Chairman has called the Network Compact—that set of network values consumers have come to rely upon and expect from their networks. The Internet’s connections have led to its value—as a platform for competition, civic engagement, and economic growth. As the Chairman has said, “the manner in which networks

interconnect to exchange Internet traffic is a part of . . . the Network Compact, those values that have traditionally governed successful networks. Thus, it is a question that must concern the Commission.”

Let’s unpack the question posed by today’s event: Whether ISPs should be subject to interconnection obligations of the kind imposed on owners of public switched telephone networks. In fact, these obligations are far from monolithic. Let’s consider a few:

First, let’s take the interconnection of consumer premises equipment or CPE. The Part 68 rules establish standards for allowing technically compatible devices to attach to telephone networks. No money changes hands. But competitive manufacturers of equipment can build and deploy an incredible variety of voice and data equipment for use with the public network, without seeking prior permission from either the Commission or the telephone companies.

Next, let’s consider long distance interconnection and access charges. The availability of microwave transmission equipment after World War II significantly lowered economic and technological entry barriers for long distance communication. To compete successfully, however, competitors like MCI needed to interconnect long haul private lines with AT&T’s local networks so that they could connect subscribers to non-subscribers, and vice-versa. In large part, it was AT&T’s failure to interconnect with such competitors—including strategies involving degradation of interconnections—that triggered the Justice Department investigation that led to the Bell System breakup. And in 1982, the FCC approved a new post-divestiture access charge plan -- an important component of competition in the long distance market.

Wireless carriers face a different interconnection landscape. Wireless providers have long been operating pursuant to what are essentially bill-and-keep arrangements for wireless-to-wireless interconnection, and

this framework has proven to be successful for that industry. In addition, the decreasing price of wireless-to-wireline interconnection over time has facilitated the growth of the wireless marketplace.

Finally, let's consider voice and data roaming obligations for wireless providers – another form of interconnection. Recognizing the importance of roaming for mobile consumers, the Commission requires mobile wireless service operators to provide automatic voice roaming. In 2011, the FCC adopted rules requiring facilities-based providers of commercial mobile data services to offer data roaming arrangements to other such providers on commercially reasonable terms and conditions, subject to certain limitations. For both voice and data, mobile wireless service providers enter into roaming agreements with each other so that their customers will be able roam and receive service automatically, regardless of their location.

So, turning back to interconnection for ISPs: What have we seen and where are we today? As the Internet evolved over time, models of interconnection for Internet traffic developed, including peering, paid transit, and the use of content delivery networks (or CDNs). Indeed, witnessing such arrangements, some said that peering and paid transit could be the model for interconnection pricing for all types of communications networks, not just Internet backbones, suggesting that the Commission could get out of the business of regulating interconnection in communications networks altogether. Others said that these peering and transit arrangements were the result of an unusual set of circumstances and were not transferable to other communications networks, and indeed might not be stable even for backbones.

Over the years, interconnection between ISPs has not always been seamless. In October 1996, two large ISPs cut off their peering connections for over a week due to a dispute. During the winter of 1997, UUNet Technologies Inc., MCI Communications Corp. and BBN Corp., key members of the Commercial Internet Exchange, left the CIX router, which was the first commercial interconnection point. Similar

incidents continued into this decade. For example, in 2005, Level 3 terminated its peering arrangement with Cogent and in 2008, Cogent terminated its peering agreement with Telia.

We are also aware of the more recent disputes that have erupted—between Comcast and Level 3 in 2010 and between Cogent and Comcast and Verizon earlier this year. Rather than depeering outright, these disputes seem to involve degradation of service arising from congestion at peering points, particularly during peak usage times. With such disputes as a backdrop, the FCC has received a number of points of view on the manner in which current traffic exchange regimes are, or are not, working.

One question is this: Are such disputes, in fact, business negotiations that can be resolved adequately in the marketplace? Or are they an advance warning sign of a breakdown of the functioning marketplace of interconnection and traffic exchange on the Internet? We don't know the answer. But we do know that we need to learn more about how the marketplace is, or is not, functioning.

So, how will the Commission learn more? The Commission will be reviewing information about interconnection on the Internet in a number of contexts. First, as you all know, the Commission recently adopted a Notice of Proposed Rulemaking regarding rules to protect and promote Internet openness. The question of how networks exchange Internet traffic, such as through peering, was outside of the scope of the 2010 Open Internet Order and thus is outside of the proposed scope of the 2014 Open Internet NPRM. However, some parties have sought to expand the scope of the 2014 proceeding to include issues relating to Internet backbone providers, including issues of traffic exchange, peering, transit, and CDNs. We are seeking comment on this question, in order to hear from those who may disagree with this suggested treatment of peering/traffic exchange. We will learn from those comments. Second, we expect that parties will continue to raise concerns and provide information to the Commission about ISP interconnection practices. These avenues, and no doubt others, will serve the Commission's and the public's interest in gaining a better understanding of traffic exchange on the Internet today.

But at the moment, we have many more questions than answers. So I am very much looking forward to the discussion today, and in the future, on these interesting and important topics.