



# The Committee on Energy and Commerce

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## Memorandum

October 21, 2013

To: Members, Subcommittee on Communications and Technology

From: Majority Committee Staff

Subject: Hearing on “The Evolution of Wired Communications Networks”

### Overview

The Subcommittee on Communications and Technology will hold a hearing Wednesday, October 23, 2013, at 10:30 a.m. in 2123 Rayburn House Office Building on “The Evolution of Wired Communications Networks.” One panel of witnesses will testify:

1. John D. Burke, Board Member, Public Service Board, State of Vermont
2. Jim Cicconi, Senior Executive Vice President-External and Legislative Affairs, AT&T
3. Harold Feld, Senior Vice President, Public Knowledge
4. Mark Iannuzzi, President, TelNet Worldwide
5. Randolph May, President and Founder, Free State Foundation

Just 30 years ago, the communications networks of the United States consisted of the twisted pair of copper telephone wires that ran to most homes, three nationwide broadcast networks, and a fledgling cable industry laying coaxial cables to deliver video to homes. To the millions of Americans born after President Ronald Reagan took office in 1981, a world with this startling lack of connectivity and choice seems almost impossible to conceive. A generation raised on the Internet and the power and flexibility of Internet Protocol expect our nation’s laws to reflect the technological progress and innovation that has been the economic engine of the United States for decades. Despite our country’s staggering technological achievements, our laws fail to reflect the fundamental truth of the last 30 years of investment and innovation: networks are increasingly fungible.

Today’s American household still has that same pair of twisted copper wires, but they run alongside coaxial cable and fiber, as well as their spectrum-based alternatives: multiple high-speed wireless networks and constellations of satellites orbiting the earth. Each of these has the potential to serve as an option for delivering the services Americans demand – like voice and video – that are increasingly just applications on a data delivery network.

The Subcommittee's hearing is focused on how the evolution of these networks away from older and less flexible ways of delivering services is impacting consumers and the companies that invest in delivering service to them, and ultimately, whether the laws that were enacted to govern these discrete services are appropriate in an Internet Protocol (IP)-enabled world.

## **Background**

Once the dominant form of electronic communication, circuit-switched wireline telephone service was comprised of circuits of wires connecting the calling phones to the receiving phones. If a line between the two could not be established, the caller would get the infamous "all circuits are busy" message. This service initially was provided by AT&T, under a government sanctioned monopoly. This structure was intended to achieve ubiquitous connectivity for the entire country through a nationwide network, rather than the patchwork of proprietary telephone networks that had begun to develop. Given the costs of such a colossal undertaking, the use of a single provider also was thought to provide an economic way to drive deployment across the country by allowing the monopoly to subsidize expensive buildout in rural areas with the relatively inexpensive buildout of densely populated areas.

In order to address concerns arising from de facto single-entity control of the network, the FCC heavily regulated how and at what cost AT&T delivered service. Title II of the Communications Act of 1934 sets forth the legal framework for the regulations that governed AT&T's provision of wireline telephony, categorizing providers as "common carriers." However, changes to the competitive landscape led the U.S. Department of Justice to bring an antitrust case against AT&T, and in 1984 AT&T's monopoly control of local telephone service effectively ended with the breakup of AT&T into smaller, regional providers (the so-called "Baby Bells").

More than ten years later, Congress took a hard look at the provision of local telephone service and whether changes were needed to address modern communications. The end result was the Telecommunications Act of 1996, which imposed new regulatory obligations on providers that were formerly a part of AT&T (known as incumbent local exchange carriers (ILECs)) in an effort to promote competition for local telephone service. These new entrants – known as competitive local exchange carriers (CLECs) – were entitled to certain services from the ILECS, including interconnection with the ILEC network, access to the ILECs facilities for colocation of equipment, and a guaranteed ability to resell the ILECs last mile services, in order to promote competition by giving consumers choice in the retail telephony market.

The new title II that came out of the Telecommunications Act of 1996, with its focus on competition in wired telephony and regulation of the long-distance telephone market, quickly found itself outpaced by technological change. Shortly after its passage, the FCC auctioned off 120 MHz of spectrum that became known as the Personal Communications Service band – and the rush of Americans to distance-agnostic mobile wireless service began. Shortly thereafter, Americans began to sign-up to Internet access services. Companies embracing these new technologies, unburdened by title II, were able to innovate and invest at a faster pace and have continued to supplant the legacy telephone network.

## **Discussion**

The evolution of wired communications networks is taking place in two different, but related ways: the transition to Internet Protocol and the replacement of older copper lines with fiber optics. ILECs are seeking relief at the FCC from a number of requirements that were enacted to ensure the legacy telephone operator and competitors operated together to create a seamless, nationwide consumer telephone experience.

The transition away from networks that support older technologies is giving new life to old networks and driving a new wave of investment and competition. This “IP transition” consists of the retirement of legacy systems that use a protocol called time division multiplexing (TDM) and replaced it with IP-based, packet-switched networks. In a world in which voice, video, and a host of other service are merely packets of data on an IP transport network, the myriad network connections available to American consumers already serve as competitors.

IP networks provide many advantages to consumers and businesses over legacy TDM systems. While there is little disagreement that the transition is beneficial or that it is already underway, there has been much discussion about the impact this transition would have on CLECs and end-user customers that are reliant on TDM systems, as well as how to foster a transition to an all-IP network, even in the most rural, high-cost areas.

ILECs make a primarily economic argument for relief from legacy regulation of their networks. In order to speed the deployment of more versatile packet-switched facilities, ILECs contend that their IP and fiber deployments should remain free from regulatory obligations that are generally applied to copper and TDM-based systems. They also argue that they should be relieved of the obligation to maintain those copper and TDM-based systems. Both of these ILEC-only obligations stem from title II, which are remnants of government attempts to undo the advantages of having been a regulated monopoly. ILECs contend that in a market where they are non-dominant and consumers at the retail and wholesale levels have numerous choices, these regulations act as a constraint on their ability to innovate with no corresponding economic value to competition. Moreover, the ILECs argue, maintenance of outdated systems draws needed capital away from efforts to transition to IP and deployment of fiber, threatening to leave high-cost areas out of the transition.

CLECs, State PUCs, and some in the public interest community, however, argue that the transition to IP and current market conditions do not vitiate the need for title II regulation of ILEC networks, but rather validate them. These opponents contend that absent the provisions of title II that guarantee access for competitors to ILEC facilities, mandate interconnection between networks, open rights of way, and give State regulators an oversight role, competition would wither, and consumers would be deprived of the benefits of that competition.

First, many contend that the transition to IP must include the existing interconnection requirements under section 251 and 252 of the Act. While the ILECs, who are obligated to interconnect by law, contend that market demands will compel interconnection without any government intervention, pointing to the interconnected nature of public Internet, most CLEC providers, who have gained access through the interconnection mandate, claim ILECs will not

allow interconnection without regulatory pressure, and customers will either lose service or lose options. Additionally, State PUCs are concerned that their authority under section 252 to monitor and, if necessary, arbitrate interconnection between networks will be preempted as networks transition to an all-IP architecture if provisions in title II are not extended.

Second, CLECs are concerned that the transition to IP facilities and accompanying relief from portions of title II would adversely impact their ability to gain access to ILEC facilities – both in the last mile and in the central office. Today, competitive providers have the right to colocate their equipment in ILEC offices and to resell the ILECs last mile facilities as their own. At a minimum, CLECs argue that the Commission should maintain these requirements to preserve competition for wireline services.

Third, CLECs and some in the government contracting community are concerned that the transition from TDM to IP will render some end-user equipment obsolete. For example, one government contractor has filed comments at the FCC citing the Federal Aviation Administration's TDM-based air traffic control systems as an example of those systems that are critical, but not ready to be upgraded to IP.

Finally, public interest groups and State PUCs are concerned with how consumer issues will be impacted by the IP transition. While IP-based technology offers many advantages in terms of speed, capacity, and other valuable efficiencies, there are concerns about how the networks will perform certain vital consumer service functions. Among the concerns are whether the transition to IP networks will impact the provision of 9-1-1 service; whether IP networks, which are dependent on commercial power, are reliable enough to replace existing systems in times of emergency; and, how the consumer protection provisions of title II, including the role of the States, will evolve in an all-IP world.

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