

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

Inquiry Concerning the Deployment of)	GN Docket No. 09-137
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)	
)	
A National Broadband Plan for Our Future)	GN Docket No. 09-51

COMMENTS OF COVAD COMMUNICATIONS COMPANY

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Executive Summary

Covad Communications Company respectfully submits its comments in response to the Notice of Inquiry released in the above-referenced dockets by the Federal Communications Commission (the “Commission”). Covad supports the Commission’s holistic review of its broadband policies, data collection efforts, and related issues. The foundation of any successful broadband policy must rest not upon mere consideration of what speeds seem appropriate for *today’s requirements*, but rather upon promoting access to and availability of next-generation applications like high definition video-conferencing, distance learning, telemedicine, telecommuting, and other forthcoming transformational applications. These next-generation applications require video-level quality of service and adequate upload speeds, and the Commission’s policies will only succeed as a long-term measure if it approaches broadband as a means to an end -- specifically, as the conduit for access to such transformational applications. In order to support such transformational applications, the Commission should aim for deployment of 100 Mbps to most US customers by 2015, with 20 Mbps guaranteed bandwidth for video and other QOS sensitive applications;¹ it should also ensure that the network deployed is upgradeable to 1 Gbps without the need to upgrade the last mile plant itself.

To promote broadband deployment at reasonable costs and broadband availability at reasonable prices, the Commission should seek to leverage efficient use of existing assets, including copper, and it should also consider means to promote competition and innovation in the delivery of services. In this regard, the Commission should: 1) ensure that existing copper facilities are preserved, even in those locations where new facilities are installed; 2) adopt TELRIC pricing as the appropriate basis for competitive access to legacy bottleneck facilities,

¹ With at least 10 Mbps for locations that cost more than \$2,000 in installation costs or \$75 per month in operating expenses (i.e., a high-cost exception).

including copper loops, transport, and collocation; 3) establish reasonable cost-based rates for de-listed network elements under Section 271 of the Act; 4) establish policies to guard against the enormous leverage that the dominant telephone companies have over special access rates; and 5) prioritize the promotion of competition to drive both technological and infrastructure development by eliminating monopoly bottlenecks wherever possible, and providing reasonable wholesale open access over the ILEC next-generation fiber and hybrid copper-fiber networks.

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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. 09-137
A National Broadband Plan for Our Future)	GN Docket No. 09-51

COMMENTS OF COVAD COMMUNICATIONS COMPANY

I. Introduction and Summary

Covad Communications Company (“Covad”) respectfully submits its comments in response to Notice of Inquiry (“NOI”) released by the Federal Communications Commission (“Commission”) on August 7, 2009 in the above-captioned dockets. Through the NOI, the Commission has instituted a proceeding concerning deployment of broadband access services in the United States on a “clean slate,”² and with due regard to Congress’ mandates pursuant to the American Recovery and Reinvestment Act of 2009 (“Recovery Act”),³ and the Commission’s recently updated broadband data collection procedures through FCC Form 477.

Since the Commission’s last Section 706 report, Congress has re-emphasized the national goals of achieving ubiquitous deployment and increased use of broadband access services. In so doing, Congress mandated that the Commission, by February 17, 2010, develop a plan to ensure

² See NOI, ¶ 2.

³ See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009). Congress has likewise passed the Broadband Data Improvement Act, Pub. L. No. 110-385, 122 Stat. 4096 (2008) (BDIA), 47 U.S.C. § 1301 *et. seq.* (“BDIA”). Among other things, the BDIA requires the FCC to publish Section 706 reports annually, to compile “demographic information for unserved areas” as part of the annual section 706 inquiry, and to include an international comparison in the Section 706 reports.

that all people of the United States have access to broadband (the “Plan”).⁴ The Commission must also establish benchmarks for achieving ubiquitous broadband deployment, and must conduct its analysis of broadband deployment within certain parameters established by Congress.⁵ The Commission has wisely decided to meld this Section 706 inquiry with the development of the Plan. The two are intertwined, and the Commission cannot, and should not, develop either in isolation from the other. With respect to the NOI, the Commission has requested comment on a number of items, including:

- (1) How to define “advanced telecommunications capability” or “broadband;”
- (2) Whether broadband is available to all Americans;
- (3) Whether the current level of broadband deployment is reasonable and timely; and
- (4) What actions, if any, the Commission should take to accelerate broadband deployment.

As one of the nation’s largest independent providers of broadband services, Covad has an acute interest in the Commission’s development of the National Broadband Plan, the Section 706 report, and the Commission’s broadband platform generally. Covad supports the Commission’s holistic review of its broadband policies, data collection efforts, and related issues. The Plan, and the tools used to implement it (as further considered through the NOI), should be forward-looking. The foundation of any successful broadband plan must rest not upon mere consideration of what speeds seem appropriate for *today’s requirements*, but rather upon promoting access to and availability of next-generation applications like high definition videoconferencing, distance learning, telemedicine, telecommuting, and other forthcoming transformational applications.⁶ These next-generation applications require video-level quality of

⁴ Recovery Act § 6001(k).

⁵ Recovery Act § 6001(k)(2).

⁶ See Home Broadband Adoption 2008, Pew Internet & American Life Project, June 2009, at 33 (noting that 65 percent of broadband users said it was “very important” or “somewhat important” to use broadband to communicate with health care or medical providers).

service (“QOS”) and adequate upload speeds, and the Plan will only succeed as a long-term measure if it approaches broadband as a means to an end -- specifically, as the conduit for access to such transformational applications.

II. What is Advanced Telecommunications Capability or Broadband?

Although the Commission can and should review speed thresholds to determine whether a service qualifies as “broadband,” broadband services should be defined first and foremost by the applications they support. Americans need robust data transmission services to compete in an interconnected marketplace, to participate in civic and community opportunities, and to increase their standard of living⁷ -- and the speeds that support many applications today will likely not support the most transformational applications tomorrow. As a forward-looking approach to make the Plan a key component of a larger social and economic transformation, Covad has proposed the following:⁸

- Support Small Business Broadband Adoption – increase the adoption of business-class broadband by small businesses, the engine of innovation and job creation in the United States economy. Engage and adopt pro-competitive policies (such as preservation of copper loop plant, pricing reform, and special access reform) that will enable more carriers to offer business-class broadband services to small businesses. Providing more carriers with the ability to compete effectively in the provision of broadband will stimulate adoption and drive more efficient use of existing broadband platforms.
- Build-Out Next Generation Services – aim for the delivery of at least 100 megabits per second (“Mbps”) to the great majority of US customers by 2015, with a 10 Mbps exception for high-cost areas.

The Commission should therefore avoid establishing a static, minimum bandwidth threshold. Such an approach may have been appropriate and useful as a bright-line matter in

⁷ See, e.g., *Bringing Broadband to Rural America*, Report on a Rural Broadband Strategy, May 22, 2009 (“Rural Broadband Report”), at ¶ 3 (heeding the congressional recognition that access to broadband is “critical”); ¶ 12 (discussing the importance of broadband in connections for educational, medical, and energy management purposes).

⁸ The proposed plans are set forth in additional detail in Covad’s Comments in GN Docket No. 09-51 (filed June 8, 2009).

determining how to make awards under the time-sensitive Recovery Act stimulus programs.⁹ But a more nuanced approach is needed if this inquiry and the Plan will have any long-term impact. The Commission should adopt an application-based approach based on the speeds and service characteristics necessary to run socially and economically significant applications like the ones identified below. As applications evolve over time, this flexible definition of broadband can evolve along with them. High Definition Video Conferencing, Distance Learning, Telemedicine, and Telecommuting are some of the categories of applications the Commission should focus on in adopting a flexible “broadband” definition. These applications all require a QOS threshold not generally available to consumers today.

A. Video calls: Telepresence and High Definition Video Conferencing

High-definition conferencing, advanced telepresence, and other enhanced communication tools can be achieved only with next-generation broadband. As Cisco has discussed, telepresence and high definition video-conferencing require broadband connections with high speeds, low jitter, and low latency.¹⁰ Covad’s operational experience confirms this. Seamless two-way video requires video-level QOS and adequate upload speeds, which are not present in the current generation of “best efforts” consumer-grade Internet services. Covad’s proposed Next-Generation Build-out Plan would remedy these problems by delivering at least 20 Mbps with video-level QOS.¹¹ Next-generation broadband, including current business-class Internet services offered by Covad and other inter-modal providers, enables consumers to place high definition video calls.

⁹ See NOI, at ¶ 36.

¹⁰ Comments of Cisco Systems, Inc., GN Docket No. 09-51, at ii (filed June 8, 2009).

¹¹ See Comments of Covad Communications Company, GN Docket No. 09-51, at 2, 14 (filed June 8, 2009).

B. Distance Learning

Education is critical to increase economic productivity and improve the standard of living for Americans -- especially those in rural and remote areas.¹² Online education enables access to high quality educational materials, regardless of location. Similar to video calls, two-way high definition video can transform the way citizens learn, by allowing them to participate remotely in classes as though they were physically present in the classroom. Such technology can bring students from one side of the country to a classroom thousands of miles away. But, just as with video calls, high definition distance learning requires video-level QOS and adequate upload speeds. Only next-generation broadband will deliver those QOS and speeds.

C. Telemedicine

Much like distance education, the ability to bring a patient and doctor together across thousands of miles can reap enormous benefits. The benefits are obvious in allowing medical specialists in urban hospitals to “see” a patient in a rural community through a high-definition video call, or in enabling an elderly patient to “see” their doctor through a high definition video call placed from the relative comfort of their own home or nursing home room. As the American Telemedicine Association has discussed, telemedicine provides benefits for these types of patients, as well as many other patients.¹³ Telemedicine could also offer significant promise in mitigating the rising costs of health care and increasing public safety in the face of future natural disasters and pandemics. But, just as with distance learning and video calls generally, next-generation broadband enables these telemedicine two-way video applications, while “best efforts” Internet services do not.

¹² Rural Broadband Report, at ¶ 24 (“The need for distance learning and telemedicine is most acute in [rural] areas. We must see that broadband infrastructure and the means to use it reach rural communities that have been redlined, neglected, or segregated from better-served areas.”).

¹³ American Telemedicine Association Comments, GN Docket No. 09-51, at 3, 4, 9-11 (filed June 8, 2009).

D. Telecommuting

Telecommuting allows workers to reduce their carbon emissions, decreases road congestion, and provides flexibility to the many Americans that have to balance family and work commitments. The Digital Energy Solutions Campaign discusses some of these benefits in its comments.¹⁴ However, for many Americans, telecommuting is not a viable option due to the substantial computing and data transmission requirements of many American jobs. Next-generation broadband, however, will provide telecommuters a high definition “window” to remote colleagues and customers through high definition video. “Best efforts” Internet services do not.

E. Dynamic Speed and Service Thresholds

The applications discussed above should form the foundation of any definition of “broadband” -- if a service supports the QOS thresholds required by these next-generation broadband applications (and other socially and economically significant applications that the Commission may identify), it would be considered an “advanced” telecommunications service or broadband. Such a definition would provide sufficient capacity to meet consumer broadband demand, but also incorporate flexibility to ensure that new technology does not quickly outstrip the network’s bandwidth. Thus, the main components of Covad’s plan are:

- Focus on the bandwidth needed to run significant applications like the types discussed immediately above;
- Aim for deployment of 100 Mbps to most US customers by 2015;
- 20 Mbps guaranteed bandwidth for video and other QOS sensitive applications;
- Upgradeable to 1 Gbps without the need to upgrade the last mile;
- High cost exception: at least 10 Mbps for locations that cost more than \$2,000 in installation costs or \$75 per month in operating expenses.¹⁵

¹⁴ Digital Energy Solutions Campaign Comments, GN Docket No. 09-51, at 2 (filed June 5, 2009).

¹⁵ Covad acknowledges that future advances in technology will necessarily require the Commission to update its “broadband” definition. Applications that utilize broadband service networks have evolved rapidly. While it is inevitable that technology will one day supersede the next generation broadband network’s capacity, Covad’s focus takes this into account; Covad is not arbitrarily suggesting 20 Mbps or 100 Mbps. These figures are instead driven

1. 100 Mbps to U.S. Customers by 2015

To enable the transformative applications discussed above, the Commission must define “broadband” in a manner that results in support for service speeds and QOS that are an order of magnitude higher than those currently available to most Americans. Few US consumers and small businesses have reasonably priced access to broadband that can operate such next-generation applications. Indeed, more rural locations may only have access to 1-2 Mbps, or even dial up speeds. The Commission should set the bar higher to accommodate and promote access to these critical applications, and aim for a network that will support generally available speeds of at least 100 Mbps by 2015.

2. 20 Mbps Guaranteed at Video-Level QOS

In addition to the 100 Mbps goal, the next-generation network should seek to promote access at each location of at least 20 Mbps with video-level QOS. Many transformative applications – including high definition video-conferencing, distance learning, and telemedicine – involve two-way video, which requires a guaranteed, dedicated data stream, which often requires 1 to 10 Mbps capacity.¹⁶ However, the pace of application development will accelerate, and as new users and new applications become available, higher speeds and more reliability will be needed. As such, 20 Mbps is a reasonable minimum target for “video quality” guaranteed bandwidth.

by application requirements and reflect a reasonable starting point for defining broadband, while recognizing that the broadband definition will continue to evolve along with the applications that rely on broadband. Covad’s suggested “upgradeability” factor is the most practical way to address concerns regarding changes in technology and “future-proof” the next generation network. Finally, defining broadband by reference to the required levels of performance for critical applications is perhaps the most consumer-oriented approach the Commission could take -- it effectively places the definition of broadband in consumers’ hands, using their adoption of and migration toward newer critical applications as the touchstone for identifying what should be considered an adequate speed for broadband access.

¹⁶ See, e.g., <http://www.itif.org/files/2009-needforspeed.pdf>, p.5.

3. Upgradeable to 1 Gbps

The most significant cost to deploy a next-generation network will be last mile facilities. A study commissioned by the British government concluded that, of the estimated £24.5 billion that it would cost to build a national fiber to the premises (“FTTP”) network, £19.5 billion (nearly 80 percent) would be spent on last mile facilities from street cabinets to end user locations.¹⁷ Accordingly, the Commission must take steps to “future-proof” expensive last mile facilities to the greatest extent possible. In that regard, the Commission should ensure that next-generation broadband network will be upgradeable to at least to 1 Gbps without the need to add or change last mile facilities. From a practical perspective, this means that the last mile facilities should be able to support 1 Gbps through a change in electronics at either end of the facilities.¹⁸

III. Is Broadband Available to all Americans?

A. Access to Business-Class Broadband

Americans do not, collectively, have “access” to broadband -- at least in terms of the most socially and economically significant applications described above. For a great percentage of the country, these key Internet access and broadband services are primarily consumed at the workplace.¹⁹ However, most small businesses in the United States lack reasonably priced access

¹⁷ See <http://www.berr.gov.uk/files/file47788.pdf>, p.19.

¹⁸ Covad recognizes, of course, that certain locations are simply much more expensive to serve than others, particularly in remote areas. Some broadband engineers use the rule of thumb that “20 percent of the locations drive 80 percent of the costs.” To keep the total social cost of next generation broadband deployment at a reasonable level, Covad submits that it is appropriate to establish a cap of \$2,000 in initial installation costs, or \$75 in monthly operating costs per end user, for locations to participate in Covad’s proposed 100 Mbps build-out. Locations that exceed that price cap should instead receive service of at least 10 Mbps. Again, the Commission should adopt a “flexible” rather than a rigid definition of broadband -- one that is not based solely upon speed at a fixed point in time anywhere in the network, but rather upon a more granular, dynamic approach that takes into account both the status of available applications and the ability of the rural/remote community to justify the costs of deployment.

¹⁹ Testimony of Ben Scott, Policy Director Free Press, on behalf of Free Press, Consumers Union, and Consumer Federation of America, before the United States Senate Committee on Small Business & Entrepreneurship, Regarding Improving Internet Access to Help Small Business Compete in the Global Economy, at 3 (Sept. 26, 2007), available at http://www.freepress.net/files/small_business_testimony.pdf (“*Free Press Testimony*”) (“According to the Census Bureau, 92 percent of e-commerce takes place business-to-business.”).

to business-class broadband services. As Free Press outlined in its testimony before the Senate Committee on Small Business and Entrepreneurship, only 4 percent of small businesses purchase T1 broadband services, the primary entry-level business-class broadband service.²⁰ Nearly all the rest rely, at best, on best-efforts consumer-class broadband, which use shared networks and do not provide the QOS that businesses need to compete in the global economy.²¹ Price is a major reason for this. According to Free Press, the average price for a T1 in the US in 2007 was \$720 per month.²² For a 2 Mbps symmetrical business-class circuit, the average price skyrockets to \$2,500 per month.²³ These prices make business-class broadband services unavailable for most small businesses. The 4 percent market penetration for T1s reflects this economic reality. “Broadband” may be “available” to consumers if the definition of broadband is a low-speed threshold incapable of supporting next-generation applications. However, the reality is that low speed “broadband” services are less effective than next-generation services in fostering economic development, advances in technology, improved access to health care, or support of other critical facets of the American economy. “Broadband” sufficient to support these next-generation services is not currently available to the majority of Americans, and where it is, it is priced beyond the reach of even business consumers.

IV. Broadband Deployment Efforts

Other countries are moving ahead aggressively with unbundling and build-out programs for broadband that rely heavily on partial public funding and wholesale open access. Those

²⁰ *Free Press Testimony*, at 5.

²¹ *Free Press Testimony*, at 4.

²² *Free Press Testimony*, at 5. The Commission has also asked whether “broadband” includes special access services, such as the T1 facilities discussed in this paragraph. NOI at ¶ 39. Under an applications-based approach to defining broadband, the unequivocal answer is yes -- anything that supports access to critical applications such as those described herein must be considered a broadband service. As discussed further herein, special access reform must therefore be considered an essential component of any regulatory program to promote broadband availability.

²³ *Free Press Testimony*, at 7.

countries are leaders in broadband deployment, including next-generation deployment. Their experiences provide useful lessons for the United States -- and, equally importantly, provide a benchmark for the standard to which the United States will be held in a competitive global marketplace.

Japan ranks first in the world in the percentage of broadband lines served by fiber, with 48 percent.²⁴ By contrast, the figure for the United States is 4 percent. Japan has achieved this high level of next-generation broadband with aggressive unbundling requirements, including copper loops, collocation, and fiber loops.²⁵ Even with fiber unbundling requirements, NTT has invested \$200 billion in its next-generation network and plans on offering fiber-based services to 50 percent of its footprint by 2010.²⁶ Japan also supplements private capital with public funding, in the form of subsidies, tax incentives, and low or zero-interest loans.²⁷

South Korea ranks second in the percentage of broadband lines served by fiber, with 43 percent.²⁸ South Korea achieved this high level of fiber penetration with copper loop unbundling requirements, as well as government grants, loans, and tax incentives.²⁹ As with Japan, South Korea is rapidly deploying broadband, including next-generation broadband, using a combination of unbundling and public funding.

Australia recently announced plans to publicly fund a next-generation broadband network, offering 100 Mbps to 90 percent of its locations and wireless broadband to the remaining

²⁴ [Http://www.oecd.org/dataoecd/21/58/39574845.xls](http://www.oecd.org/dataoecd/21/58/39574845.xls).

²⁵ [Http://www.itif.org/files/ExplainingBBLeadership.pdf](http://www.itif.org/files/ExplainingBBLeadership.pdf), p.D2.

²⁶ *Id.*

²⁷ *Id.* at pp.D1-D2.

²⁸ [Http://www.oecd.org/dataoecd/21/58/39574845.xls](http://www.oecd.org/dataoecd/21/58/39574845.xls).

²⁹ [Http://www.itif.org/files/ExplainingBBLeadership.pdf](http://www.itif.org/files/ExplainingBBLeadership.pdf), pp.F2-F3. South Korea has not unbundled fiber loops, at least to date.

10 percent.³⁰ The network is expected to cost \$30 billion.³¹ While the Australian government will be the majority shareholder, the government will partner with private capital and -- significantly -- will offer wholesale services over the network on an open access basis.³²

Finally, Sweden has been active in next-generation broadband deployment, particularly at the municipal level. For example, the City of Stockholm and Stockholm County Council built a dark fiber system, which they lease on a wholesale open access basis.³³ Sweden ranks third in the percentage of broadband lines served by fiber, with 20 percent.³⁴ This is another example of the effectiveness of open access models, combined with partial public funding, in encouraging the construction and adoption of next-generation broadband. Given this international backdrop, “broadband” is clearly not being deployed to all Americans in a reasonable or timely manner. The speed and QOS levels available to most Americans do not come near the level of service, speed, or pricing enjoyed by their counterparts in a significant number of OECD countries.

V. Policies to Accelerate Deployment

The Commission can dramatically increase small businesses’ access to reasonably priced business-class broadband through a two-prong approach: (1) Leverage existing assets, including copper; and (2) encourage innovation and competition. Nearly all small businesses are already connected to copper last-mile facilities. These existing copper connections are currently the primary broadband medium for small business customers, and will continue to be so for the next

³⁰ [Http://www.pm.gov.au/media/Release/2009/media_release_0903.cfm](http://www.pm.gov.au/media/Release/2009/media_release_0903.cfm).

³¹ [Http://www.physorg.com/news158302467.html](http://www.physorg.com/news158302467.html).

³² [Http://www.pm.gov.au/media/Release/2009/media_release_0903.cfm](http://www.pm.gov.au/media/Release/2009/media_release_0903.cfm).

³³ [Http://www.itif.org/files/ExplainingBBLeadership.pdf](http://www.itif.org/files/ExplainingBBLeadership.pdf), pp.G3-G4.

³⁴ [Http://www.oecd.org/dataoecd/21/58/39574845.xls](http://www.oecd.org/dataoecd/21/58/39574845.xls).

several years. Fiber serves only approximately 12 percent of United States businesses,³⁵ generally in the urban core of large cities. With a focused national build-out plan, fiber will not be broadly available to most small businesses for at least three to five years. Without a national build-out plan, that timeframe could instead be measured in decades. Cable providers have historically focused their network deployment in residential areas, leaving many businesses without access to cable-based broadband services.³⁶ For businesses that do have access to the cable plant, the cable companies' best-effort services do not provide business-class QOS. It is therefore vitally important to preserve the legacy copper plant and to give a wide range of companies the option of providing innovative services to small businesses over the legacy copper at reasonable cost-based rates.

Copper is a proven medium for providing business-class broadband services to small businesses. T1s and bonded T1s provide broadband service at speeds ranging from 1.5 to 12 Mbps, with guaranteed QOS, for less than \$200 per megabit in markets that have competitive alternatives. Moreover, Ethernet over copper is an emerging technology that provides business-class broadband at speeds ranging from 1 to 20 Mbps. With these technologies, existing copper can be used to dramatically expand business-class broadband to small businesses, without the need to wait several years for next-generation networks to be deployed. The Commission can take several concrete steps to expand the availability of business-class broadband services to small businesses over the existing legacy copper plant.

³⁵ [Http://ipcarrier.blogspot.com/2007/11/metro-ethenet-optical-access-still-far.html](http://ipcarrier.blogspot.com/2007/11/metro-ethenet-optical-access-still-far.html). Another data source estimates that 19.1 percent of buildings in the US with businesses over 20 employees have access to fiber. [Http://lw.pennnet.com/display_article/360390/13/ARTCL/none/NNEWS/1/Fiber-penetration-extends-to-191-of-US-commercial-buildings-with-20+-employees/](http://lw.pennnet.com/display_article/360390/13/ARTCL/none/NNEWS/1/Fiber-penetration-extends-to-191-of-US-commercial-buildings-with-20+-employees/). Buildings containing smaller businesses will undoubtedly have much less access to fiber.

³⁶ One analyst estimated that, as of 2004, the cable plant did not serve nearly half of all small businesses in the US. [Http://findarticles.com/p/articles/mi_hb4895/is_200409/ai_n17987055/?tag=content;coll](http://findarticles.com/p/articles/mi_hb4895/is_200409/ai_n17987055/?tag=content;coll).

A. Copper Preservation

The Commission should take steps to ensure that existing copper facilities are preserved, even in those locations where new facilities are installed. In many cases, local telephone companies want to remove copper where they are deploying fiber. This removes the physical infrastructure through which competitive services may be provided, and stifles the incentive for competitive providers to expand and develop technologies that utilize copper for the benefit of consumers in both the short and long-term. As such, the public interest will be overwhelmingly supported by a Commission policy that ensures existing copper is preserved. Absent extenuating circumstances, there exists no public interest consideration that would dictate otherwise.³⁷ Indeed, it is socially inefficient to allow the removal of copper, as the local phone company has to actually incur labor and capital expenses to remove competitive choices – *i.e.*, copper loops – from small businesses and other customers.

While local telephone companies may argue that they should not have to incur maintenance expenses, this plea is easily addressed by allowing competitive carriers the option to maintain (or pay for the maintenance of) the copper. Indeed, maintenance charges are already often included in existing rates under which competitors access copper. Any such concerns are therefore easily addressed by permitting cost-based, wholesale access to legacy copper.

B. TELRIC Pricing

TELRIC pricing is the appropriate basis for competitive access to legacy bottleneck facilities, including copper loops, transport, and collocation. Since the copper-based network is already built and largely (if not entirely) depreciated, incremental cost-based pricing is appropriate, especially in light of the public benefits that copper provides with respect to ubiquitous

³⁷ The local phone companies should be required to prove to the satisfaction of the Commission (or state commissions, if the Commission elects to delegate the authority) that specific retirements are in the public interest. Absent such a finding, copper retirements should be prohibited.

broadband deployment. While local phone companies continue to support “market based” pricing, such a scheme makes no sense when there is no competitive market and the incumbents are free to raise special access prices at will. If special access was ubiquitously used as an input for competitive services, competitors would face a classic cost-price squeeze that would not allow them to compete in the market. If competitors are left with no alternative but special access, they will be at the mercy of their primary retail competitor – the incumbent local exchange carrier (“ILEC”) – for the pricing of the critical loop and transport inputs to their businesses. In this scenario, the ILEC would have every incentive to create a price squeeze situation (and little accountability for doing so) for its competitive local exchange carrier (“CLEC”) competitors. The Commission should conclude, therefore, that special access is not a substitute for TELRIC-priced high capacity loop and transport unbundled network elements (“UNEs”).

C. Section 271 Rates

The Commission should establish reasonable cost-based rates for de-listed network elements under Section 271 of the Act. Under Section 271, Regional Bell Operating Companies (“RBOCs”) were required to unbundle their networks as a condition for competing in the long-distance telecommunications service market. As the RBOCs continue to provide long distance services under that authority, Section 271 provides an independent basis under which RBOCs are required to provide access to network elements even if they are no longer required to make those UNEs available under Section 251 of the Act. Although Section 271 may not necessarily contain the same pricing requirements mandated under the Section 251 unbundling rules, the Commission has authority under Section 271 to establish reasonable cost-based rates for network elements that are de-listed under Section 251. So far the Commission has not offered specific guidance on what the proper Section 271 rates should be, and as a result, the ILECs have refused

to negotiate reasonable wholesale pricing (instead offering retail special access pricing). As long as special access rates are set substantially above cost, facilities-based competitors relying on special access will always be subject to a price squeeze in competing against the RBOCs. The RBOCs can compete based on obtaining facilities for their services at cost, while competitors are forced to obtain the same crucial inputs to their services at rates far above cost. In the absence of meaningful Section 271 oversight, the RBOCs have a strong incentive to raise special access rates that they themselves use to offer long distance services to business customers and cause price squeezes. The Commission should therefore enforce the RBOCs' Section 271 obligations and develop reasonable cost-based rates for such elements to fulfill Congress' objectives in the Act. Eliminating this uncertainty will foster competition and innovation in broadband, and further support the Commission's goal of ubiquitous broadband deployment.

D. Special Access Reform

Likewise, the Commission should establish policies to guard against the enormous leverage that the dominant telephone companies have over special access rates. Special access pricing remains far above costs and, to the extent competitors attempt to offer retail services while purchasing special access facilities, the result is that CLECs (and their customers) continue to subsidize the ILECs by paying monopoly rates for special access. Reform is not only critical to promote competition in broadband, but will significantly foster economic expansion. By restraining the (currently excessive) rates charged for special access, the Commission will encourage investment and create jobs in infrastructure development.

E. Encourage Innovation and Competition

The United States needs broadband competition to achieve universal broadband access. Since the implementation of the 1996 Act, Covad – the first company to offer retail DSL services

in the United States – has been a competitive force in reducing the price of bandwidth to consumers and businesses across the nation. Faced with this competition, local phone companies have been forced to respond through both lower pricing of services and the development of infrastructure. But, the telephone companies did not deploy DSL services until competitors began to do so.³⁸ Thus, the Commission must prioritize the promotion of competition. Along with targeted government investments and consumer education to stimulate demand, competition will drive both technological and infrastructure development and benefit consumers in innumerable ways.

The Commission can best encourage competition and innovation by eliminating monopoly bottlenecks wherever possible. Next-generation services rely on the availability of reasonable and cost-based access to facilities in the legacy plant, including copper loops, transport, and collocation. Bottlenecks in these critical areas result in less deployment, increased prices, and decreased demand.

Moreover, the Commission can foster innovation and competition by providing reasonable wholesale open access over the ILEC next-generation fiber and hybrid copper-fiber networks. As an initial matter, Section 706 of the 1996 Act directs the Commission to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans...by utilizing, in a manner consistent with the public interest, convenience, and necessity...measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.”³⁹ The unbundling provi-

³⁸ Similarly, when MCI introduced low-priced long-distance services, AT&T was likewise forced to alter its strategies and services to the benefit of American consumers. As precedent has shown, robust competition delivers high broadband penetration and speeds at reasonable prices.

³⁹ Pub. L. 104–104, title VII, § 706, Feb. 8, 1996, 110 Stat. 153, as amended by Pub. L. 107–110, title X, § 1076(gg), Jan. 8, 2002, 115 Stat. 2093.

sions of the 1996 Act likewise obligate ILECs to provide “nondiscriminatory access to network elements on an unbundled basis,”⁴⁰ which applies equally to loops made of copper, fiber, or a hybrid of copper and fiber. The Commission can foster innovation and competition over these networks by establishing wholesale open access requirements. Further, for next-generation networks, such as FTTP or hybrid copper-fiber networks, wholesale open access can be priced using an actual cost, rate of return, methodology.⁴¹ Using this methodology, the ILECs will receive a full return on their investment, with a reasonable profit, as long as the network is deployed on a reasonable basis.⁴² Access to the last mile will always be necessary for vibrant competition. Given the technical and economic impossibility of duplicating the last mile, the unbundling provisions of the 1996 Act provide a logical means of ensuring competitive access to all homes and businesses in the country. That logic applies equally to loops made of copper, fiber, a mix of copper and fiber, or any other material.⁴³

VI. Conclusion

The Commission should undertake policies that ensure that broadband is defined, and promoted, in a way that supports transformative, next-generation applications and services. The definition and policies supporting it should be flexible and dynamic, to ensure that technological advances do not quickly supersede the transmission capacities of that network. While much

⁴⁰ 47 U.S.C. § 251(c)(3).

⁴¹ This methodology is only appropriate for FTTP or hybrid copper-fiber networks, since those networks are new. TELRIC continues to be appropriate for the legacy copper network and supporting infrastructure, since that network has been largely depreciated.

⁴² The Commission and state commissions would still be able to disallow costs that were unreasonably incurred. The next-generation networks would be held to rate of return pricing standards that are similar to the standards currently applied for many electric utilities and to the remaining rate of return telecommunications utilities.

⁴³ As an operational matter, market participants will need access to prequalification records that accurately reflect the medium of the last mile facilities. The prequalification databases will need to indicate whether a customer is served by copper, hybrid copper-fiber, fiber, or a combination of these mediums. The ILECs current databases do not adequately differentiate the different loop types.

work needs to be done to achieve a nationwide next-generation broadband deployment, the Commission can take a number of steps to accelerate the transition to that goal (and to ensure that parties take no actions detrimental to that goal). Such actions include preserving copper, establishing rational pricing policies, and encouraging competition wherever possible.

Respectfully submitted,

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