

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)
)
Reply Comments Sought in Support of)
National Broadband Plan) GN Docket Nos. 09-47, 09-51 and 09-137
)
NBP Public Notice # 30)
)

REPLY COMMENTS of ADTRAN, Inc.

ADTRAN, Inc. (“ADTRAN”) respectfully submits the following comments in response to the Commission’s *Public Notice*, which generally seeks reply comments with regard to the record developed in these proceedings to support the Commission’s design of a National Broadband Plan.¹ As a telecommunications equipment manufacturer, ADTRAN has a strong interest in the successful and widespread deployment of broadband to all Americans. These reply comments are an attempt to cut through some of the clutter in the expansive record, and highlight some of the salient points the Commission should take into account as it drafts its initial National Broadband Plan.

ADTRAN brings a relatively unique perspective to this proceeding. ADTRAN, headquartered in Huntsville, Alabama, is a leading global manufacturer of networking and communications equipment, with an innovative portfolio of more than 1,700 solutions for use in the last mile of today’s telecommunications networks. ADTRAN’s equipment is deployed by some of the world’s largest service providers, as well as distributed enterprises and small and

¹ *Reply Comments Sought in Support of National Broadband Plan*, Public Notice, DA 10-61, released January 13, 2010 (hereafter cited as “*Public Notice*”).

medium businesses. Importantly for purposes of this proceeding, ADTRAN solutions enable voice, data, video and Internet communications across copper, fiber and wireless network infrastructures. Because of the breadth of its product lines, ADTRAN is not wedded to any one last-mile technology. Rather, ADTRAN believes that copper, fiber and wireless (both terrestrial and satellite) will all be necessary for the deployment of robust, ubiquitous and affordable broadband. ADTRAN thus brings an expansive perspective to this proceeding.

ADTRAN need not spend much time convincing the Commission of the importance of broadband deployment. The record is replete with comments and studies demonstrating the myriad benefits that will accrue from the widespread availability of high-speed Internet access, including job creation, economic competitiveness, telehealth, distance learning, smart grids and enhanced communications capabilities. Indeed, given the Commission's awareness of the importance of broadband, we would be "preaching to the choir."

The record also reflects the fact that while broadband access is already widely available (with estimates of some 93% of the households presently having access to one or more providers of high speed Internet access), there are still some areas without such access. In addition, as new, bandwidth intensive applications are developed, deployed and embraced, it will be necessary to ensure that faster connections and greater capacity is implemented everywhere. As ADTRAN has explained in its comments and White Papers submitted in this proceeding, various technologies will be able to meet the expected growth in demand for broadband access.²

² See e.g., ADTRAN White Paper, "Defining Broadband Speeds: Estimating, Capacity in Access Network Architectures," submitted in Docket No. 09-51 on January 4, 2010; ADTRAN Reply Comments in Docket No. 09-51, filed July 21, 2009, at pp. 3-7.

Unlike some commenting parties that have been pushing particular technologies,³ ADTRAN urges the Commission to adopt a National Broadband Plan that allows the service providers to determine which technology would be most efficient and effective in light of the specific conditions and demand in each area. ADTRAN believes that the marketplace, and not regulatory prescriptions, should govern the choice of broadband technologies. In deciding which type of broadband access to deploy, a service provider should be free to choose from a “full toolbox,” since the various technologies each have their “pluses” and “minuses.”

Fiber-to-the-home (“FTTH”) provides very high throughput (and the potential for even higher capacity by changing the electronics if necessary), although the cost of deploying fiber all the way to the home is significant. Fiber-to-the-node (or to a remote terminal) is significantly less expensive than FTTH, although it generally offers lower speeds. On the other hand, advances in DSL technologies (including pair bonding and vectoring) support speeds over copper loops of just under 300 mbps at loop distances of 2,000 feet, so that fiber-to-the-node is presently capable of matching current FTTH speeds, if the loop distance is not too great. Moreover, even newer DSL technologies using advanced signaling techniques (referred to as “4GBB”) may be able to provide speeds of 1 Gbps or more over the copper loops of up to 300 meters,⁴ so that technological obsolescence is unlikely to be a concern for the foreseeable future.

Broadband over cable economically offers high speeds as an adjunct to already-deployed cable systems, although the shared bandwidth in that architecture decreases the available capacity if many of the subscribers are online simultaneously. Terrestrial wireless broadband

³ See *e.g.*, Comments of Hughes/WildBlue in Docket No. 09-51 filed June 8, 2009; Comments of Wireless Communications Association International in Docket No. 09-51, filed June 8, 2009.

⁴ See, “The Fourth Generation Broadband Concept,” *IEEE Communications Magazine*, January 2009 at p. 68.

can be deployed relatively quickly (since no wires need to be strung or trenches dug – and assuming there are no regulatory issues that would delay construction of the needed towers) and also provides mobility, although the shared bandwidth could constrain each subscriber’s experienced speed. Satellite broadband may be the most economical means of serving particularly remote customers, although capacity constraints and latency issues may render it less than ideal for some applications. ADTRAN has submitted a White Paper in this proceeding that examines the ability of different technologies to meet the projected needs for broadband capacity to the year 2015.⁵

ADTRAN believes that the National Broadband Plan should leave it up to the service provider to determine which technology best suits its business plan and its customers’ needs, and that regulators should not directly (or indirectly through the subsidy programs) limit the choice of technology. Of course, in order for the marketplace to work effectively, the subscribers’ demand needs to be based on proper disclosures of the capabilities of the different technologies. ADTRAN has explained the problems with the use of “advertised” or “up to” speeds,⁶ and urges instead that providers disclose sustainable speed as experienced by the user. ADTRAN has presented metrics that would allow such a valid “apples-to-apples” comparison.⁷

⁵ See ADTRAN White Paper, “Defining Broadband Speeds: Estimating, Capacity in Access Network Architectures,” submitted in Docket 09-51 on January 4, 2010.

⁶ See ADTRAN Comments in Docket Nos. 09-137 and 09-51, filed September 4, 2009, at pp. 7-10. The Commission apparently acknowledges these problems, as reflected in the observed 56% gap between the advertised maximum “up to” speeds and average “sustained” speeds. See FCC Commission Meeting Slides, November 18, 2009 at Slide 12.

⁷ See ADTRAN White Paper, “Defining Broadband Speeds: Deriving Required Capacity in Access Networks,” submitted in Docket 09-51 on January 4, 2010.

ADTRAN believes that a National Broadband Plan that incorporates the principles discussed above will best serve the public interest.

Respectfully submitted,

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