

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

In the Matter of )  
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 )  
Restoring Internet Freedom ) WC Docket No. 17-108

**COMMENTS OF AD HOC COALITION OF 17 SMALL AND MID-SIZE  
MANUFACTURERS OF PRODUCTS FOR BROADBAND NETWORKS**

These comments are filed by a diverse group of companies that make products used in broadband networks. We are diverse because of the wide variety of products we make and because of our wide difference in size. The products we make include consumer appliances like modems and routers, transmission and switching equipment, software, semiconductors incorporated into broadband gear, network test equipment, equipment used to lay transmission cables, and more. Our size varies widely too - from niche manufacturers employing fewer than 100 people to mid-size companies as many as 3,000 workers.

While we are a diverse group of small and mid-size manufacturing enterprises, each of us supports the FCC’s proposal to reverse the agency’s 2015 decision subjecting broadband Internet access service to public utility-style regulation under Title II of the Communications Act. We oppose Title II regulation of broadband Internet access service because, as discussed below, we believe it has a negative economic impact on our industry - small and mid-size broadband manufacturing - to the detriment of innovation and jobs. Importantly, the position of manufacturers on the impact of regulatory policy on manufacturing investment and innovation is entitled to special weight since, as the D.C. Circuit has recognized, “[f]irms that sell goods and services that are inputs to the production and use of . . . services stand to gain an expanding

market” from new investment and innovation and thus have an “incentive to make a completely unbiased judgment on the matter.”<sup>1</sup>

## **DISCUSSION**

In its Notice, the Commission proposes to reverse the agency’s 2015 decision to regulate broadband Internet access service as “telecommunications service” under Title II of the Communications Act and restore its previous approach of regulating such service as “information service” under Title I of the Act. In doing so, the agency requests comments from interested parties on numerous matters relevant to its proposal, including broad questions about whether regulating such service under Title I would be consistent with the text, structure, and history of the Act as well as with agency precedent and sound public policy.<sup>2</sup>

Many commenters almost certainly will provide substantial evidence demonstrating that regulating broadband Internet access service as an “information service” under Title I is consistent with the text, structure, and history of the Communications Act, as well as with agency precedent, and that regulating under Title I would benefit many aspects of sound public policy. As a result, rather than focus broadly on those many questions, we instead confine *our* comments to one narrow, but important, aspect of public policy; namely we provide evidence that there is a serious and substantial risk that regulating broadband Internet access service under Title II will have a negative impact on the economic well-being of the numerous small and medium size companies that make hardware and software used to provide Internet services. Stated in economic terms, the costs imposed by regulating broadband Internet access service under Title II include both the direct cost to ISPs of complying with Title II regulations as well

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<sup>1</sup> *U.S. v. Western Elec.*, 993 F.2d 1572, 1582 (D.C. Cir. 1998).

<sup>2</sup> *See, e.g.*, Notice at ¶¶ 25-51.

as a variety of indirect costs. Indirect costs are costs occurring when regulated entities change their behavior in response to incentives created by a given set of regulations.<sup>3</sup> In its Notice, the Commission noted correctly that Title II regulation imposes direct compliance costs on the ISPs to which the regulation applies and creates a variety of indirect costs as well, including diminished incentives for ISPs to invest in their broadband networks.<sup>4</sup> This reduced investment incentive, in turn, causes economic injury to companies that make the products which ISPs otherwise would purchase to upgrade their networks.

Diminished investment resulting from imposing Title II regulation hurts *all* companies making hardware and software used in providing broadband internet services, but the negative impact on small and mid-size manufacturers as a group is especially severe for at least two important reasons. First, smaller manufacturers often make products for a single industry whereas their larger competitors may make products for several industries.<sup>5</sup> A manufacturer whose products are sold to a single industry that is the subject to a given set of regulations is at economically greater risk than a company making products not just for the regulated industry but for a variety of other industries to which the regulations do not apply. Second, a small

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<sup>3</sup> See, e.g., [https://www.mercatus.org/expert\\_commentary/what-are-indirect-costs-regulation](https://www.mercatus.org/expert_commentary/what-are-indirect-costs-regulation).

<sup>4</sup> Notice at ¶¶ 4 -5 (“[in the two years that broadband Internet access service has been subject to Title II regulation] Internet service providers have pulled back on plans to deploy new and upgraded infrastructure and services to consumers. [By replacing Title II regulation with Title I regulation] we aim to . . . reverse the decline in infrastructure investment, innovation, and options for consumers . . .”); *id.* at ¶ 44 (Title II regulation has “depressed broadband investment and reduced innovation. . . . As providers have devoted more resources to complying with new regulations, the threat of regulatory enforcement of vague rules and standards has dampened providers’ incentive to invest and innovate”); *id.* at ¶¶ 45-46 (“A recent study indicates that capital expenditure from the nation’s twelve largest Internet service providers has fallen by \$3.6 billion, a 5.6% decline relative to 2014 levels (citation omitted). Another study indicated that between 2011 and 2015, the threat of reclassification reduced telecommunications investment by about 20-30%, or about \$30-40 billion annually (citation omitted) . . . . We believe that these reduced expenditures are a direct and unavoidable result of Title II reclassification, and exercise our predictive judgment that reversing the Title II classification and restoring broadband Internet access service to a Title I service will increase investment”).

<sup>5</sup> Burns, P., *Entrepreneurship and Small Business* at 18, Palgrave Macmillan 3d ed. (2011).

manufacturer's revenue, on average, is concentrated among a smaller number of customers than is a larger company's revenue.<sup>6</sup> This makes a small manufacturer of products used in providing broadband Internet access service economically more vulnerable to the Title II regulations applicable to their ISP customers than a large manufacturer selling to the same customers.

Not surprisingly, small and mid-size manufacturers whose stock is publicly traded have let their investors know that Title II regulation of broadband Internet access service imposes an economic risk for their companies. For example, Procera Networks, which makes network management equipment for both fixed and mobile ISPs, included the following warning in the shareholder Annual Report it filed with the SEC shortly after the FCC adopted its 2015 rules:

“[Title II regulation] could interfere with U.S. broadband service providers’ ability to reasonably manage and invest in their U.S. broadband networks, and could adversely affect the manner and price of providing broadband service. As a result, U.S. broadband service providers may lessen their capital investment in their networks and we may have fewer opportunities to sell our products to both current and prospective customers, and our opportunity for continued revenue growth could be adversely impacted. . . . If our revenue growth slows or our revenues decrease, our results of operations and our financial condition also be adversely impacted.”<sup>7</sup>

Infinera, which makes optical transport networking equipment for ISPs, included a similar warning in its most recent Annual Report:

“The Federal Communications Commission (“FCC”) has jurisdiction over the entire U.S. communications industry and, as a result, our . . . U.S. [ISP] customers are subject to FCC rules and regulations. Current and future FCC . . . [rules subjecting broadband Internet access service to Title II regulatory requirements], including regulations on net neutrality . . . could negatively affect our business.”<sup>8</sup>

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<sup>6</sup> *Id.*

<sup>7</sup> Procera Networks Annual Report (Form 10-K) at 29, filed March 13, 2015).

<sup>8</sup> Infinera Corp. 2116 Annual Report (Form 10-K at 29, filed Feb. 23, 2017);

Netscout, which makes a variety of network monitoring equipment for both mobile and fixed service ISPs, gave its shareholders a similar warning in its most recent Annual Report:

“[R]egulation of the Internet and Internet commerce could decrease demand for our products and, at the same time, increase the cost of selling our products, which could have a material and adverse effect on our financial condition and results of operations.”<sup>9</sup>

A policy that causes economic harm to small and mid-size manufacturing companies does not just damage the manufacturers themselves, it also harms innovation. Joseph Schumpeter was one of the first economists to consider the relative contributions of large vs. smaller firms to innovation when, in 1942, he theorized in his book *Capitalism, Socialism, and Democracy* that large firms are more likely to innovate than small ones.<sup>10</sup> To many, Schumpeter’s hypothesis seemed reasonable given that innovation often requires more money than a small firm has available.<sup>11</sup> More than 25 years later, however, economist Harold Demetz published a paper suggesting that the existence of competition may result in substantially *greater* research and innovation by smaller firms than Schumpeter had assumed.<sup>12</sup> In the last several decades, a substantial number of studies have examined the relationship between firm size and innovation in an effort to determine whether small firms are responsible for more or less innovation than large firms. Nearly all such studies show that small firms account for a

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<sup>9</sup> Netscout Systems, Inc. 2117 Annual Report (Form 10-K at 24, filed May 24, 2017).

<sup>10</sup> Schumpeter, J. *Capitalism, Socialism, and Democracy*, Harper and Row, New York, 1942.

<sup>11</sup> See also Arrow, K. "Economic Welfare and the Allocation of Resources for Invention," *The Rate of Inventive Activity*, Princeton Univ. Press, 1962 (hypothesizing that small firms will underinvest in R&D because they are risk averse, financially weaker, and unable to fully exploit the returns to innovative activities).

<sup>12</sup> Demsetz, H. "Information and Efficiency: Another Viewpoint," *Journal of Law and Economics*, vol. 12, April 1969.

significant amount of innovation, and some studies conclude that small firms are responsible as a group for *more* innovation than larger ones.<sup>13</sup> Furthermore, there is evidence that small firms making products for *broadband networks* are responsible for more product innovation than small firms as a group.<sup>14</sup> One indicator of this is the fact that small companies making products for communications networks hold a higher percentage of communications network patents than do small companies in 53 of the remaining 72 industry sectors.<sup>15</sup>

Finally, replacing utility-style Title II regulation of broadband networks with less draconian Title I regulation will benefit *all* manufacturers by making manufacturing systems more efficient, thereby facilitating the design of products in new ways, improving the competitiveness of U.S. workers, and boosting job growth and wages. Manufacturing increasingly will be based on digital technologies as inputs to design, production, and distribution systems, and manufacturers increasingly will design products “in the cloud,” using 3D modeling, computer simulations, and 3D printing to develop prototypes and even final products. Similarly, manufacturers increasingly will deploy sensors and cameras to monitor the production process, making it more efficient and reliable. They also will more closely integrate their design and production systems with the supply chains of customers. And they will incorporate sensors into their products to relay feedback to assess real-time performance, avoid

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<sup>13</sup> See, e.g., F. Rothwell and W. Zegveld, *Innovation and the Small and Medium Sized Firm*, Univ. of Illinois at Urbana-Champaign’s Academy of Entrepreneurial Leadership Historical Research Reference in Entrepreneurship (2009) (applying a model developed by Abernathy and Utterback in 1975 to show that smaller manufacturers in developing industries (like broadband) contribute a disproportionately high percentage of radical innovations. Other studies coming to a similar conclusion are reviewed in Cohen, W., 2010 “Fifty Years of Empirical Studies of Innovative Activity and Performance”, in B.H. Hall and N. Rosenbert, eds., *Handbook of Economics of Innovation*, Amsterdam: North Holland Elsevier.

<sup>14</sup> Ackermann, *Are Small Firms Important? Their Role and Impact*, Springer Science & Bus. Media, 2012, at 161-163.

<sup>15</sup> See, e.g., Breitman, A. and Hicks, D., “An Analysis of Small Business Patents by Industry and Firm Size”, Rowan Univ. College of Science & Mathematics, at 9-12.

failures, and improve next generation products. Cloud-based design, digital production monitoring, supply chains, and feedback from the field all require fast and widely deployed broadband networks to ensure quick, reliable transmission and storage of mission-critical data. By facilitating the development of the Internet of Things, cloud-based design, and advanced distribution, a regulatory structure allowing for the more rapid development of broadband networks thus improves the internal performance and innovative-capacity of *all* manufacturers.

### **CONCLUSION**

Among the many reasons that justify reversal of the Commission's 2015 decision to subject broadband Internet access service to public utility-style Title II regulation is the fact that Title II regulation has a negative economic impact on our industry - small and mid-size broadband manufacturing - to the detriment of innovation and jobs. The Commission should reverse Title II classification of broadband Internet access service and reinstate regulation under Title I.

Respectfully submitted,

Actiontec Electronics, Inc.  
Adara Technologies Inc.  
Argent Associates, Inc.  
Blonder Tongue Laboratories, Inc  
CBM of America, Inc.  
Condux International, Inc.  
ETI Software Solutions Inc.  
FiberControl  
FiberSource, Inc.  
Go! Foton Corp.  
Infinera Corp.  
Nextus, Inc.  
Prysmian Communications Cables and Systems USA, LLC  
Sentinel Connector Systems, Inc.  
SNC Manufacturing Co. Inc.  
Vermeer Corp.  
Voltserver Inc.

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