

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

In the Matter of)
)
Protecting and Promoting the Open Internet) GN Docket No. 14-28
)

DECLARATION OF DANIEL BERNINGER

1. My name is Daniel Berninger. I was born in Wilmington, Delaware USA. I am an entrepreneur, founder of the Voice Exchange Communication Committee (“VCXC”), and an architect of new communications services since 1991. I submit this Declaration in support of my Petition for Stay Pending Judicial Review of the Commission’s *Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, FCC 15-24, GN Docket No. 14-28 (Mar. 12, 2015) (“*Order*”).

2. I am an honors graduate of Villanova University, where I earned a Bachelor of Electrical Engineering and a Master of Electrical Engineering. I completed the classwork for a Doctorate of Philosophy in Systems Engineering at the University of Pennsylvania, where my degree remains pending completion of a dissertation on the mathematical analysis of complex systems.

3. I have devoted my professional career to transforming the communications industry from traditional circuit switched services to the Internet Protocol (“IP”) services upon which customers increasingly rely today. I served as a Member of the Technical Staff and developer of new telephone network services at Bell Laboratories in the early 1990’s. However, over the past 20 years, I have been involved in a number of industry firsts in IP communications.

4. I was appointed to the first Voice over IP (“VoIP”) deployment team at AT&T (1995) and led the first VoIP deployments for NASA (1997), Verizon (1997), and HP (1998). I co-founded the VON Coalition, which was the first VoIP policy advocacy organization. I also participated with friends and partners in or otherwise contributed to the first call completed between the Public Switched Telephone Network (“PSTN”) and the Internet anywhere in the world (1995), the first international calling company relying on VoIP (1997), the first company to use VoIP to offer domestic unlimited calling (2001), and the first live network multi-service provider High Definition (“HD”) voice call (2013). During my career, I was involved in the founding of Free World Dialup (“FWD”), ITXC, and Vonage, helped recruit the CEOs for each of these companies, and participated in developing their initial business models. I received the VON Pioneer Award in 1999.

5. I founded VCXC in 2012 as a non-profit organization to provide a home for initiatives working to speed the transition to all-IP networks and HD voice. I gave the IP transition its name and kicked off the transformation of the communications sector at a Grand Challenge event on June 15, 2012 hosted by VCXC. The founding of VCXC reflects a desire to raise awareness about opportunities for the communications services enabled by all-IP networks. I agree with other technologists who believe that frictionless global communications promise a Knowledge Age transformation of life on the planet. The communications capacity of unregulated information services already expands at a pace consistent with Moore's Law, doubling capacity every 18 months. The recent achievement of a 1000-fold expansion of capacity becomes a billion-billion expansion opportunity by the end of the century.

6. My 25 years of experience in the communications sector leaves me with four certain conclusions. First, the degree of regulation is the primary factor in the success or failure

of a communications service. Second, services subject to Title II of the Communications Act, which allows regulators to take advantage of their regulatory powers to intervene in markets, are destined to fail. Third, non-Title II communications services may achieve some success, but only if regulators can resist their natural tendency to overregulate them. Fourth, communications services classified as unregulated information services (the entire information technology sector) or that are simply beyond classification by the Federal Communication Commission (“FCC”) achieve dramatic success.

7. Because a regulated company cannot serve two masters – regulator and customer – the regulatory requirements to which a regulated company is subject always trump customer needs. For example, regulatory lawyers played a prominent role in product and service development meetings at Bell Laboratories. During my tenure at Bell Labs, every new service or change in an existing service had Title II implications, which the development teams needed lawyers to interpret. Not surprisingly, the goal of the lawyers, whose opinions were given considerable weight by the development teams, was to ensure regulatory compliance, not meet customer needs. The result was a process by which Title II services were shaped to appease non-customer regulatory issues.

8. Because Title II disserves customers and is antithetical to innovation, I have worked for more than two decades in opposing Title II regulation of the Internet. After nearly a decade of advocacy in which I, my colleagues, and the larger information technology community were involved, the Commission classified the service offered by FWD as an unregulated information service in a ruling known as the “Pulver Order” in 2004. Beginning in 2002, the Commission also issued a series of rulings in which it classified broadband Internet access services as an unregulated information services. In the intervening years, the expansion of

Internet capacity accelerated, and IP communications services began rapidly displacing PSTN services.

9. After years of success under this unregulated approach, I never considered Title II regulation of the Internet a serious possibility until President Obama released a YouTube video in November 2014 endorsing Title II. Like many of my colleagues in the entrepreneurial community, I was amazed at the prospect that the Commission would reverse more than a decade of bipartisan, pro-innovation decisions by extending Title II to the Internet.

10. Because of our direct experience with the innovation deadening effect of Title II, I convened a group of friends and tech elder entrepreneurs to help educate the communicating public about the risk of subjecting the Internet to Title II regulation. This group includes: John Perry Barlow, lyricist and activist; Mark Cuban, Founder, AXS TV; Tim Draper, founder, Draper Fisher Jurvetson; Tom Evslin, founder & former, CEO ITXC; Dave Farber, Professor Emeritus, CMU and Board Member ISOC; Charlie Giancarlo, Senior Advisor, Silver Lake; George Gilder, author; John Gilmore, activist; Brian Martin, Chairman and CTO, 8x8; Scott McNealy, co-founder, SUN Microsystems; Bob Metcalfe, Professor, University of Texas and inventor of Ethernet; Ray Ozzie, creator Lotus Notes, former CTO Microsoft; Jeff Pulver, co-founder, Zula and Vonage; Michael Robertson, CEO, MP3.com; and Les Vadasz, former EVP, Intel.

11. This group recognizes that America was the only country in the world to explicitly protect the unregulated status of computing and computer networks in the 20th century. This fact accounts for the global dominance of the United States information technology sector. The *Order* eliminates these decades-old protections by subjecting the Internet to Title II regulation. In my view, nothing useful will result from the regulation of 21st century computer

networks pursuant to a law addressing a monopoly voice telephone market signed by President Franklin Delano Roosevelt in 1934 before the invention of the transistor or computing. Indeed, the category of telecommunications services subject to Title II regulation has experienced a complete lack of innovation and presently attracts less than half the usage of the pre-commercial Internet period. The failure to improve the voice quality of a telephone call over a period of 80 years represents an unprecedented technology anomaly that traces to Commission implementation of Title II regulation.

12. The *Order*, which does not even recognize the entrepreneurial value of new communications services that rely upon IP networks, threatens my livelihood. By seeking to benefit entrepreneurs that use communications, the *Order* favors one type of entrepreneur over another. This represents an inevitable consequence of the Commission's market intervention approach. Market interventions designed to serve the interests of one group (users of communications services) necessarily undermines the prospects of another group of which I am a member (architects of communications services).

13. The *Order* dramatically alters my investment interests in IP communications services and causes irreparable harm to my career as an architect of new communications services if allowed to take effect pending judicial review.

14. First, my ability to design, develop, and ultimately profit from new and innovative IP communications services requires preserving their nonregulated status. Communications services subject to Title II regulation are toxic to entrepreneurs such as me. In developing any communications service attractive to end users, I must employ a rapid process of trial and error, adapting to conditions based on available technology, competitive alternatives, and customer interest. The challenges of this development process are daunting enough without adding to the

list the prospect of shifting regulatory foundations inherent under Title II regulation. If the *Order* takes effect and the Internet falls within the FCC's Title II jurisdiction, I will be unable to continue my chosen profession as an IP communications services architect. Title II regulation of the Internet will leave me with no option but to abandon my investments in IP communications services and devote my time and resources to another sector of the economy.

15. Second, because of the entrepreneurial imperative to avoid investing in communications services subject to Title II regulation, the entrepreneurial community relies on the existence of an operationally practical means of distinguishing between regulated and unregulated services. However, such an understanding is rendered impossible by virtue of the breadth of the *Order* and the absence of any limiting principle to FCC discretion regarding the regulation of IP communications services.

16. For example, in adopting a new definition of the "Public Switched Network" to include "public IP addresses," the FCC was persuaded that this definition better "reflects the emergence and growth of" IP networks, which "use standardized addressing identifiers other than NANP numbers for routing of packets" and which "give users a universally recognized format for sending and receiving messages across the country and worldwide." *Order* ¶ 391. The FCC also recast the PSTN as a "single network" that comprises the Internet, rather than two separate networks as had been understood before. *Id.* ¶ 396. Even worse, the nature of the regulatory process relieves the Commission of any obligation to make a precise statement regarding limitations in the exercise of its new found authority. These limitations, if any, will only become clear over time through litigation and additional regulatory proceedings. This approach obliterates the historical and clearly defined mechanism for determining the regulated status of a communications service by virtue of its connectivity to the PSTN.

17. Third, by prohibiting paid prioritization arrangements, the *Order* prevents me from implementing new HD voice offerings, which I have devoted time and resources to developing in order to take advantage of the economic opportunities created by the retirement of the PSTN in favor of all-IP networks. Because latency, jitter, and packet loss in the transmission of a communications will threaten voice quality and destroy the value proposition of an HD service, it is imperative that network operators prioritize this traffic. And, for network operators exchanging HD voice traffic, they will reasonably expect and demand to receive compensation or some other benefit in consideration for providing such prioritization.

18. One HD offering threatened by the *Order*, which was announced as the HD Network (“HDN”) on January 6, 2015, allows end users to elect and for network operators to provision HD voice functionality on an individual end-user by end-user basis. A number of operators support HD voice on their networks, but the HDN, demonstrated through trials in 2013, provides a means to move HD calls between networks.

19. Another HD service I am developing involves a voice hosting offer giving website visitors the ability to communicate with each other through HD voice. This project establishes HD voice as a new means of conversation without the need for telephone numbers or traditional dialing. Visiting a web page provides the triggering mechanism to initiate an HD voice conversation with others sharing interest in the web page topic. This business model features a subscription-based destination for customers as well as provides an affiliation model and new revenue stream encouraging website owners to promote HD voice conversations between members of their audience.

20. My work on the architecture of new communications services supporting HD voice relies on IP devices and IP networks, with no dependency or reliance on the PSTN. VCXC

exists to help the communications sector navigate the retirement of the PSTN, which does not support HD voice. In order to compete with competitive alternatives in terms of reliability and consistency of performance, the implementation of HD voice requires IP interconnection agreements with network operators to support the type of paid prioritization options the *Order* prohibits. The best efforts model associated with existing IP interconnection agreements does not enable the relevant implementation requirements necessary to support HD voice.

21. Although options for HD voice exist in the over-the-top arena of proprietary services as in the example of Viber and Facebook Messenger, the new FCC rule 8.9 would prevent broadband Internet access providers from prioritizing HD voice “in exchange for considering (monetary or otherwise) from a third party.” The benefits of HD voice resulting from my offerings will not be realized without prioritization. And, by prohibiting a broadband Internet access service provider from receiving any consideration or benefit for prioritizing HD voice traffic, the possible business models that would support my HD voice offerings shrink to zero.

22. Fourth, I am not aware of any sources of venture capital available for investment in new communications services subject to the type of open ended regulatory risk posed by the Commission’s Title II authority as contemplated by the *Order*. The loss of funding options owes to the easily observable correlation between enterprise value and the extent of regulatory obligation. Companies subject to the Commission’s regulatory authority achieve valuation multiples that are a fraction of companies not subject to Commission oversight. The loss of funding sources as a result of the change in policy strands my time and investment in the HD voice start-up initiatives described above.

23. Fifth, I am not aware of a single start-up success within the domain of Title II telecommunications services regulated by the FCC. The lack of any attempt to review or hold the Commission accountable for prior market interventions leaves the plans described in the *Order* entirely untested and with potential to create yet another collapse of telecom investment.

24. While I agree there exists a need to defend the promise of the Internet from would- be gatekeepers, the 80-year track record of the FCC exposes Title II regulation as the primary gatekeeper risk. The Commission's exercise of "command and control" regulation left communication services unimproved for decades before the arrival of the Internet. By contrast, the success of the Internet is due to the independence that entrepreneurs such as myself have enjoyed in creating and deploying new services – without government approval or oversight. By bringing the Internet within the Title II jurisdiction of the Commission, the *Order* destroys this regime of Internet independence and places the Commission in the role of gatekeeper for IP communications services. In short, the *Order* forecloses my ability to continue earning a living as an architect of new communications services and strands my investment in previously unregulated IP services with no possibility of remediation.

I, Daniel Berninger, hereby declare under penalty of perjury that the foregoing is true and correct.



Daniel Berninger

Executed this 27th day of April 2015