

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

In the Matter of)	
)	
Numbering Policies for Modern Communications)	WC Docket No. 13-97
)	
IP-Enabled Services)	WC Docket No. 04-36
)	
Telephone Number Requirements for IP-Enabled Services Providers)	WC Docket No. 07-243
)	
Telephone Number Portability)	CC Docket No. 95-116
)	
Developing a Unified Intercarrier Compensation Regime)	CC Docket No. 01-92
)	
Connect America Fund)	WC Docket No. 10-90
)	
Numbering Resource Optimization)	CC Docket No. 99-200
)	
Petition of Vonage Holdings Corp. for Limited Waiver of Section 52.15(g)(2)(i))	

COMMENTS OF BANDWIDTH.COM, INC.

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REPLY COMMENTS OF BANDWIDTH.COM, INC.

I. INTRODUCTION AND SUMMARY

Bandwidth.com, Inc. (“Bandwidth”) submits these Reply Comments in response to the various comments filed on July 19, 2013 responding to the Commission’s request for comment in the Federal Communications Commission’s (“FCC” or “Commission”) Notice of Proposed Rulemaking, Order and Notice of Inquiry, released on April 18, 2013 (“NPRM”).

The volume and breadth of comments demonstrate that the wider industry now has grasped the relevance and widespread ramifications posed by this NPRM. Nearly thirty disparate sets of comments evidence sharp and fundamental disagreement – ranging from those urging that non-carrier direct access to numbering resources should be barred, to those proposing

widely varying accounts of how such access should be implemented. This cacophony is revealing and strongly suggests there is no prudent reason to proceed here in piecemeal, à la carte fashion divorced from the holistic IP-transition approach the Commission itself suggested and, already commenced.¹ All concerned are keenly aware that non-carrier direct access to numbering resources is a fundamental part of the IP Transition. To do so wholly apart from a comprehensive approach is unwise policy and acutely discriminatory.

A piecemeal approach by the Commission invites widespread confusion among industry stakeholders that will encourage and incentivize a host of unintended consequences by some non-regulated actors. The Commission may well address the fallout, but likely long after the adverse policy or marketplace consequences are manifest. The Commission could also unwittingly eliminate options and incentives that it may wish to use as part of a long-run plan to transition to all IP networks. A race to the bottom will be the inevitable result – as opposed to the Commission’s laudable IP Transition policy goals for the country.² Indeed, some such consequences are already taking place as non-regulated actors are not waiting for permission as they understandably perceive a clear invitation by the Commission leading to this result.

Instead, the Commission should focus its resources on the comprehensive regulatory reform that is required by the rapidly evolving industry transition toward all-IP networking.

Providing direct access to non-carriers at this time would unnecessarily introduce confusion into

¹ See, e.g., Connecting America: The National Broadband Plan, at 59, GN Dkt. 09-51 (Mar. 16, 2010); *Connect America Fund, Report and Order and Further Notice of Proposed Rulemaking*, 26 FCC Rcd. 17663, ¶ 1336 (2011) (“CAF Order”).

² See *FCC Chairman Julius Genachowski Announces Formation of ‘Technology Transitions Task Force’*, *News Release*, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-317837A1.pdf (“The Task Force will conduct a data-driven review and provide recommendations to modernize the Commission’s policies in a process that encourages the technological transition, empowers and protects consumers, promotes competition, and ensures network resiliency and reliability”). The nation’s broadband transition means that communications networks are increasingly migrating from special purpose to general purpose, from circuit-switched to packet-switched, and from copper to fiber and wireless-based networks. *Id.*

an already unsettled environment for consumers, compliant providers, investors, state regulators, and the Commission.

The disjointed injection of the proposed rules divorced from any coherent, overall holistic approach is borne out in almost every set of opening comments which seek additional changes the Commission must prioritize as part of the IP Transition. While the IP Transition remains full of promise, there is a widespread agreement that the Commission must fundamentally lead in a nondiscriminatory manner.³ And if the Commission adopts rules that functionally give regulatory advantages to a preferred “non-carrier” category, thereby bypassing otherwise established regulatory burdens, the comments demonstrate that providers will take flight to this beneficial category. Separate regulatory categories for carriers and non-carriers which permit and incentivizes self-selection their regulatory status,⁴ thereby creating a de facto regulatory arbitrage regime between the two.

A core priority for any successful transition is to maintain the important consumer protections securely in today’s regulatory framework. While IP technology vastly improves existing services it does nothing to eliminate the need for consumer protections. Many of the critical problems in today’s market, which the Commission fully recognizes in other dockets, include rural call completion, phantom traffic, spoofing, phishing, vishing, swatting, and other abuses, stem from non-carriers that are not following carrier-based industry standards.⁵ Expanding the appeal of “non-carrier” status without first addressing these serious consumer

³ A variety of parties agree that equal and non-discriminatory treatment of competitors is an overriding concern. *See, e.g.*, Comments of Vonage Holdings Corp. at 10, WC Dkt. 13-97 (July 19, 2013) (“Vonage Comments”); Comments of AT&T Inc. at 12, 16, WC Dkt. 13-97 (July 19, 2013) (“AT&T Comments”); Comments of Comcast Corporation at 7 WC Dkt. 13-97 (July 19, 2013) (“Comcast Comments”).

⁴ *See* Comcast Comments at 3.

⁵ As Richard Shockey says of the Caller ID problem, it “is apparent that much of the problem is generated by SIP/TDM gateways at the edge of carrier networks that serve wholesale customers. Those gateways are not easily identifiable.” Reply Comments of Shockey Consulting at 12, WC Dkt. 13-97 (July 19, 2013) (“Shockey Consulting Comments”).

protection issues as highlighted by commenters of all stripes will impede rather than accelerate the IP Transition. Therefore, the public interest will be best served by developing comprehensive nondiscriminatory rules narrowly tailored to manage and oversee the most critical industry-wide issues.

II. PROVIDING DIRECT NUMBERING ACCESS TO NON-CARRIERS IS A SOLUTION IN SEARCH OF PROBLEM

A. The IP Transition is In Progress Under the Current Structure

The opening comments reflect a broad consensus that innovation and VoIP adoption continue to robustly and rapidly unfold under the existing carrier-based regime:

The Commission needs no further data on the current state of real-time communications networks. The Commission's own 477 data indicate that perhaps as high as 30% of all US Voice traffic is being switched using IP based SIP/IMS systems now, often over highly managed IP networks in order to maintain effective Quality of Service and Quality of Experience guarantees. Virtually all Cable Voice core networks use SIP/IMS, CLEC's RLEC's and ILEC's all have SIP/IMS networks in place especially for their enterprise customers. It has been estimated that SIP Trunking for enterprises will surpass T1 TDM trunks by 2015. The continued default use of TDM to interconnect SIP/IMS systems degrades the capabilities SIP/IMS has brought to the market and a serious impediment to further innovation. Last but not least it is clear that the CMRS carriers are moving very quickly to SIP/IMS based Voice over Long Term Evolution [VoLTE].⁶

As the New Jersey Rate Counsel indicates, 33.8% of the residential wireline market is already served by non-ILEC interconnected VoIP service.⁷ The Commission itself has found that over the three-year period from 2009-2012, interconnected VoIP subscriptions increased at a compound annual growth rate of 18%, while mobile telephony subscriptions increased at a compound annual growth rate of 5% and retail switched access lines declined at about 9% a

⁶ Shockey Consulting Comments at 4.

⁷ Comments of the New Jersey Rate Counsel at n.24, WC Dkt. 13-97 (July 19, 2013) ("NJ Rate Division Comments").

year.⁸ There has never been any real demonstration in this proceeding that the current system is not enabling robust IP innovation; and the Commission’s own statistics and long “to do” list⁹ would seem to indicate that its resources are best focused on existing call quality and consumer protection issues as innovation continues to flourish. The Commission has carefully architected a system within the Telecommunications Act that enables competitive entry pursuant to well-reasoned rules where competitors engage a level playing field. Indeed, the architecture has proven to be dynamic, adapting to the introduction of IP technologies while still premised upon law and rules applicable to “telecommunications carriers.” Moreover, the barriers to becoming a “telecommunications carrier” in today’s environment are decreasing and mutually beneficial commercial arrangements exchanging IP traffic between carriers are now recognized and accepted.¹⁰ In short, this evolutionary process sets the stage for a patient, unrushed comprehensive and clear transition framework that weaves in well-established consumer protections, while placing competition on equal footing – all to ensure the consumer wins in the end.

⁸ See *Local Telephone Competition: Status as of June 2012*, Industry Analysis and Technology Division, Wireline Competition Bureau, at 3, (June 2013), available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0621/DOC-321568A1.pdf.

⁹ Although this may not represent a comprehensive list, the following are some of the proceedings that the Commission must complete in order to implement fully the IP Transition: Numbering Policies for Modern Communications, WC Dkt. 13-97; IP-Enabled Services, WC Dkt. 04-36; Telephone Number Requirements for IP-Enabled Service Providers, WC Dkt. 07-243; Developing a Unified Intercarrier Compensation Regime, CC Dkt. 01-92, Connect America Fund, WC Dkt. 10-90; Numbering Resource Optimization, CC Dkt. 99-200; Rural Call Completion, WC Dkt. 13-39; Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services, CC Dkt. 99-20; Technology Transitions Task Force, GN Dkt. 13-5; AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition, GN Dkt. 12-353.

¹⁰ See, e.g., Stacey Higginbotham, *Bandwidth.com and Verizon Just Made VoIP Sustainable*, Gigaom.com (Jan. 18, 2011), available at <http://gigaom.com/2011/01/18/bandwidth-com-and-verizon-just-made-voip-sustainable/>; see also *CAF Order*, ¶ 739 (“The transition we adopt sets a default framework, leaving carriers free to enter into negotiated agreements that allow for different terms”).

B. Special Privileges for Non-Carriers Will Not Accelerate the IP Transition

The California Commission succinctly sums up the negative policy consequences of preferential treatment in favor of non-carriers:

More fundamentally, this question again raises the broader issue of how VoIP providers are treated from a regulatory standpoint. If VoIP providers are subject to lesser regulation than traditional providers, one of the benefits they enjoy as a result of that lesser regulation is associated lower operating costs. An imbalance in costs drives business towards the lowest cost solution; VoIP providers would have an advantage in the marketplace because of their lower costs – costs associated with numbering and with regulatory compliance generally.¹¹

As CompTel notes in its comments, the vast majority of interconnected VoIP providers already consider themselves to be telecommunications carriers and, in part to obtain direct access to numbers, have accepted the regulatory obligations that go along with it.¹² By contrast, as New Jersey Rate Counsel explains, certain “VoIP providers have fought long and hard at the federal and state levels to provide voice telecommunications services without being subject to the responsibilities that should be required of users of public switched network and numbering resources.”¹³ Many other commenters, from NTCA to Level 3 to CompTel support Bandwidth’s view that the best way to enable the most effective transformation of the regulatory framework for all-IP networks and services is by pursuing holistic nondiscriminatory reform, not by introducing new and unnecessary exceptions to well-established rules in piecemeal fashion that are likely to cause uncertainty and confusion and reduce consumer protection.

Complaints to the effect that the Commission is “making interconnected VoIP providers second-class citizens”¹⁴ gloss over the obvious business decision made by such providers to

¹¹ Comments of the California Public Utilities Commission at 18, GN Dkt. 13-97 (July 19, 2013) (“CPUC Comments”).

¹² Comments of CompTel at 8-9, GN Dkt. 13-97 (July 19, 2013) (“CompTel Comments”).

¹³ NJ Rate Division Comments at 5.

¹⁴ *See e.g.*, AT&T Comments at 1, 8.

avoid classification. Indeed, should the Commission proceed here in a piecemeal fashion, the opposite outcome would be true as regulatory fiat would create “winners” out of thin air at the cost of distorting otherwise planned for and expected outcomes of rational business decision-making.

First, when sitting at the regulatory fork in the road – to be a carrier or not – interconnected VoIP providers, by definition, made fully rational and informed business decisions *not* to be a “telecommunications carrier.” And, in particular, decided *not* to undertake the significant business risks and considerable investment – in technology, infrastructure, management and employees, and regulatory approvals and compliance – that are necessary just to access numbering resources. After that, of course, the real task of surviving in a robustly competitive carrier marketplace lies ahead and the tough odds of succeeding as a new entrant carrier post-1996 Act is a matter of record.

Thus, no one is compelling complaining non-carrier providers to do anything, and any complaint here is self-inflicted. It is a matter of deliberate business choice – and one assuredly deemed in their best business interest at the time. Ironically, as New Jersey Rate Counsel highlights in its comments, in the past some VoIP providers aggressively fought the burdens of regulation when state regulators sought to grant them carrier privileges.¹⁵

Second, granting non-carriers direct access to numbering resources in a piecemeal fashion as sought here represents an attempt to obtain competitive advantages through the regulatory process, not an imposition of unnecessary or asymmetric regulatory burdens. Some in this proceeding even go so far as to suggest that non-carriers should not be burdened with even the most basic of obligations, including demonstrating credibility and obtaining regulatory

¹⁵ See NJ Rate Division Comments at 5.

approvals, or be subject to number management controls.¹⁶ This is not a matter of CLECs merely “selling” untethered phone numbers¹⁷ as some appear to suggest; the reality is wholesale carriers are required by the Commission to only provide number resources in connection with telecommunications services, and as such, phone number utilization continues to represent the ability to engage in the exchange of “telecommunications” under the law.¹⁸

The interest by 29 disparate entities filing comments in this docket belies the assertion that interest in this issue is narrowly limited to a few wholesale carriers,¹⁹ As state consumer advocates have been, without exception, opposed to granting non-carriers direct access to number resources in the fashion the Commission seeks to do here.²⁰ Creating new classes of service providers with fewer regulatory obligations at this moment in time will trigger unwanted consequences for consumers, carriers and regulators alike. If the Commission intends to peel back regulatory requirements, it should do so for competitive carriers and non-carriers at the same time, as it is considering in, for example, the ONA/CEI forbearance proceedings, not by creating preferential treatment for non-carrier providers.

For those carriers like Bandwidth that invested in becoming carriers based on the Commission’s longstanding rules and orders, the more important issue is to ensure that all

¹⁶ See, e.g., Comments of Smart Edge Network at 15, WC Dkt. 13-97 (July 19, 2013) (“SEN Comments”); Comcast Comments at 5 (VoIP providers should be permitted to offer different documentary evidence to access numbers than state certification); AT&T Comments at 13 (claiming the FCC’s documentation process should obviate the need for state CPCNs, and the federal-administered program can provide a suitable substitute).

¹⁷ VON, for example, speaks of numbers “sold” to VoIP providers and the “acquisition . . . of phone numbers.” Comments of the Voice on the Net Coalition at 4-5, GN Dkt. 13-97 (July 19, 2013) (“VON Comments”).

¹⁸ See Comments of Bandwidth.com, Inc. at 9, WC Dkt. 13-97 (July 19, 2013) (“Bandwidth Comments”).

¹⁹ VON refers to a lack of “legitimate opposition.” VON Comments at 5.

²⁰ See NJ Rate Division Comments at 2. See also NARUC Letter, co-signed by AARP, Common Cause, Consumer Federation of America, Consumers Union, Free Press, Public Knowledge, National Consumer Law Center, and National Association of State Consumer Advocates. Letter from AARP, Common Cause, Consumer Federation of America, Consumers Union, Free Press, Public Knowledge, National Consumer Law Center, NASUCA, NARUC, to Julius Genachowski, Chairman, Federal Communications Commission, CC Dkt. 99-200 (Apr. 11, 2013).

providers line up to the starting line at the same time. Of course, classifying interconnected VoIP providers as telecommunications carriers would resolve many issues at once. But barring that, the Commission must ensure that it imposes all the same statutory and regulatory requirements on entities that enjoy the same benefits under the regulatory framework.

III. NUMBERING SHOULD BE ADDRESSED ONLY AS A COMPONENT OF HOLISTIC REFORM

Although considerable disagreement remains on many issues, there is widespread agreement among providers, technical experts, and the states that the industry's collective resources will be better used to establish a solid regulatory foundation for managing all-IP networks and services before declaring non-carriers eligible for access to numbering resources. Just as the Commission did in the recent and comprehensive CAF Order, there is also broad consensus that the Commission should provide clear guidance on how to transition that includes sufficient time for the industry and industry standards-setting bodies to take all necessary steps to execute a successful transformation of the regulatory framework.

A. Commenters Agree That Permitting Non-Carriers Direct Access to Number Resources Without Holistic Reform Will Exacerbate Known Consumer Protection Problems

In addition to Bandwidth's comments that highlighted apparent upticks in abusive network practices,²¹ a number of other well-established and widely regarded commenters organizations also recognized and cautioned the Commission that there is already cause for serious concern due to a new and growing breed of traffic schemes:

- Shockey Consulting, for example, found that Caller ID issues at the heart of many consumer fraud schemes are “generated by SIP/TDM gateways at the edge of carrier networks that serve wholesale customers. Those gateways are not easily identifiable and that has made the Track and Trace problem for malicious calling more difficult.”²²

²¹ Bandwidth Comments at 10.

²² Shockey Consulting Comments at 12.

- Neustar likewise recognized that, with “the proliferation of IP technology, it is becoming easier for entities to take part in nefarious activities and impersonate any TN as the calling TN. Spoofing is already a rising concern for service providers with regard to TNs. For example, it is becoming more common to spoof the originating TN for caller ID—in particular to deliver spam text messages and telemarketer calls.”²³
- NTCA comments cites concerns relating to phantom traffic, rural call completion, and the likely increase in call routing issues that will result if direct access is granted to non-carriers before the proper foundation is laid: “The Commission must also address public internet routing. Routing via “best effort” IP technologies will almost certainly result in substantial failures, if not unmitigated disasters, in call routing. Indeed, there is ample evidence that this is an ongoing problem that significantly contributes to the call termination crises. The Commission must recognize that VoIP calls that are not routed through carefully managed paths subject to enforceable service level agreements or similar quality-assurance measures will not be reliable and will contribute to the instability of voice service that customers rely upon.”²⁴

The Commission however, has correctly recognized the serious consumer concerns implicated by these issues, and consistent with that recognition, must adopt policies that reflect the direct connection between such potential problems and the entry of unknown, untested, and in some cases rogue players into the telecommunications ecosystem by attempting to minimize, not create, future problems.²⁵

There is also a consensus among many commenters that, before changing the rules, the Commission must first take certain first steps in order to address these industry issues and to lay the foundation for new rules to facilitate the ongoing IP Transition. For example, the comments of Shockey Consulting note that, in response to related Senate Hearings,²⁶ the FCC has recently reached out to “the Standards Development Organization, in particular the Internet Engineering

²³ Comments of Neustar at 14, GN Dkt. 13-97 (July 19, 2013) (“Neustar Comments”).

²⁴ Comments of NTCA – The Rural Broadband Association at 7, WC Dkt. 13-97 (July 19, 2013) (citing Comments of National Exchange Carrier Association, NTCA –The Rural Broadband Association, Western Telecommunications Alliance and Eastern Rural Telecom Alliance, WC Dkt. 13-39 (May 13, 2013) (“NTCA Comments”).

²⁵ See *Stopping Fraudulent Robocall Scams: Can More Be Done?*, United States Senate Committee on Commerce, Science, and Transportation Hearing, July 10, 2013, available at http://www.commerce.senate.gov/public/index.cfm?p=Hearings&ContentRecord_id=c1eec086-3512-4182-ae63-d60e68f4a532.

²⁶ See Shockey Consulting Comments at 11.

Task Force [IETF] asking for assistance in defining solutions that could overcome some of these problems.”²⁷ Shockey also notes that “it should be obvious that a transition of the PSTN to an all IP world will require databases that are Internet Protocol centric and that can accommodate IP data such as URI’s.”²⁸

Neustar shares this concern that important industry-standards setting work be accomplished in order to address spoofing and other increasingly prevalent “nefarious activities”:

TNs, unlike many other identifiers used over the Internet, are ubiquitous, globally unique, assigned as a public resource with neutrality in mind, and above all highly trusted. Current and future numbering policies should include measures to ensure that TNs retain their status as secure and reliable identifiers. The industry has begun to address this problem at the IETF Secure Telephone Identity Revisited Working Group (“STIR”). Neustar stands ready to assist the FCC, states and service providers in combating this activity.”²⁹

The Commission should permit such foundational work to be meaningfully performed before actually introducing unknown numbers of non-carriers into the carrier ecosystem.

CompTel, which distinguishes between managed VoIP and over-the-top or “OTT” providers, likewise recognizes the need for work by industry standards setting bodies. CompTel notes that, because carrier “systems have evolved over decades with an underlying requirement that the users of such systems are telecommunications carriers, the operational and security implications of providing access to industry databases and signaling systems to OTT providers is simply unknown.”³⁰ CompTel recommends that the next step:

should be for the Commission to require the that OTT providers comply with the requirements to create, modify and delete the affected records within the industry databases in order to ensure that they accurately reflect information used by other

²⁷ Shockey Consulting Comments at 12.

²⁸ *Id.* at 9.

²⁹ Neustar Comments at 14-15.

³⁰ CompTel Comments at 11.

carriers for routing and billing purposes; require documentation and public disclosure of all operational support processes and practices (and the efficacy of each) used by Vonage and the other trial participants and their interconnected (or partnering) providers; and, seek further comment subsequent to the receipt and review of collected information.³¹

Additionally, NTCA notes that “[i]ndustry efforts are now underway to consider how routing and databases should be updated to allow for numbers to be reconciled to IP endpoints. That process should be tried and tested before the numbering system is discarded without any necessary quality controls.”³² NTCA also points out that “the North American Numbering Council (“NANC”) in its capacity as the Commission’s expert advisory body on numbering matters should be engaged to ensure” that non-carriers meet the facilities readiness requirements.

State commissions too recognize the need for greater clarity through a solid foundation before making the giant leap of faith being requested by those seeking specialized relief. The Pennsylvania Commission states that the “final rules should also address rate center consolidation.”³³ It also recommends: 1) that states be given increased authority over Local Routing Number (LRN) requests; 2) that “[n]ow is the time to rewrite the Industry Numbering Committee (INC) guidelines that dictate the rules for numbering assignment to reflect the substantial changes within the industry”;³⁴ and 3) that states collectively develop a recommendation on what constitutes appropriate intermediate numbers within one year of issuance of final rules.”³⁵

³¹ *Id.* at 11.

³² NTCA Comments at 6.

³³ *See* Initial Comments of the Pennsylvania Public Utilities Commission at 4, WC Dkt. 13-97 (July 19, 2013) (“PA PUC Comments”).

³⁴ *Id.* at 3.

³⁵ *Id.* at 16. *See also* NJ Rate Division Comments at 10 (“Under no circumstances should the FCC grant direct access to numbering resources without also amending its numbering cost allocation rules.”); Comments of the California Public Utilities Commission and the Peoples of the State of California at 19, WC Dkt. 13-97 (July 19, 2013) (“CPUC Comments”) (“[T]he FCC at present does not seem to have

Notably, AT&T generally agrees that there is significant preparatory work to accomplish: “significant additional work by industry stakeholders—particularly in developing efficient ENUM-type mechanisms for associating IP addresses with telephone numbers—will be necessary to fully scale direct IP interconnection.”³⁶

Indeed, the reality is there is a wide array of related issues associated with the concept of overhauling telephone numbering practices but there is no consensus as to which preparatory groundwork should take precedence. The issues raised include those raised by the Commission, as well as additional technical and regulatory issues to be more fully addressed. In order to navigate this quagmire, the Commission must take a holistic approach that prioritizes the key issues while addressing the fundamental need for a nondiscriminatory IP Transition.

B. Holistic Reform Would Include Consideration of Revising the Longstanding Numbering Cost Allocation Methodologies

Cost allocation for number resources is another area where nondiscriminatory treatment is critical and where reform will be necessary if non-carriers gain direct access to number resources. The comments of AT&T, Verizon, CenturyLink, CompTel, and HyperCube all recognize this issue and generally agree that non-carriers must share the cost of number administration with carriers.³⁷ Telecommunications carriers are required by the Act to share the cost of both number administration and number portability.³⁸ Indeed, if the Commission

sufficient information to determine what effect on competition would result from allowing VoIP provider direct access to numbers. Accordingly, the CPUC encourages the FCC, as one element of its trial evaluation, to examine what effect VoIP direct access to numbers may have on the state of competition.”).

³⁶ AT&T Comments at 23.

³⁷ Comments of HyperCube Telecom, LLC at 6, WC Dkt. 13-97 (July 19, 2013) (“HyperCube Comments”); AT&T Comments at 29; Comments of CenturyLink at 20, WC Dkt. 13-97 (July 19, 2013) (“CenturyLink Comments”); CompTel Comments at 5, 14; Comments of Verizon and Verizon Wireless at 4, WC Dkt., 13-97 (July 19, 2013) (“Verizon Comments”).

³⁸ 47 U.S.C. § 251(e)(2) (“The cost of establishing telecommunications numbering administration arrangements and number portability shall be borne by all telecommunications carriers on a competitively neutral basis as determined by the Commission.”). *See* HyperCube Comments at 6.

classifies non-carriers as “telecommunications carriers” for the purposes of Part 52 as proposed in the NPRM,³⁹ at a minimum non-carriers should by law be required to share number portability and number administration costs. Here the Commission has two logical courses of action: 1) decide as of now to draw the line where it already is today and thus require that non-carriers that desire direct access to number resources to simply become carriers for all purposes; or (2) as urged by Bandwidth, proceed with comprehensive reform generally and equally applicable across the industry.

The cost incurred by carriers for the NPAC databases is not insignificant, totaling approximately \$409M in 2012.⁴⁰ If non-carriers receive direct access to number resources, they should obviously pay their fair share of the costs of number administration. Yet the question of what is “fair” is extremely contentious and as Verizon’s comments demonstrate, it has been hotly contested across the industry for a very long time.⁴¹ It would be inappropriate to try to tangentially bootstrap such far reaching and financially critical issues into this proceeding, which has been devoid of any real contemplation of this consequence heretofore.

Vonage’s comments only highlight this concern where it misguiding asserts it and other “VoIP providers are already subject to the numbering cost allocation rules”⁴² Here, Vonage cites to the Report and Order and NPRM relating to universal service obligations, which is

³⁹ See CPUC Comments at 8 (citing NPRM, App. A, Proposed Rule 47 C.F.R. 52.5(1)(i),(j)).

⁴⁰ Verizon Comments at 4.

⁴¹ *Id.*

⁴² Vonage has previously omitted key numbering regulations that get in the way of inaccurate, sweeping conclusions. See Letter from Brita D. Strandberg, Wiltshire Grannis, to Marlene H. Dortch, Secretary, Federal Communications Commission, CC Dkt. 99-200 (May 7, 2012). See also Vonage Comments at 24.

irrelevant to the issue at hand: whether to impose numbering resource cost allocation rules on non-carrier VoIP providers.⁴³

The ILECs, appreciating the opportunistic and ad hoc nature of these proceedings to date, stoke the longstanding debate as to who should appropriately bear these costs, attributing such cost burdens to competitors as “cost causation.”⁴⁴ Whatever the merits of such arguments, this proceeding simply should not be an occasion for addressing these key rules. Rather, the infusion of such complex issues point to the necessity of a comprehensive, holistic proceeding as urged by Bandwidth.

C. Number Utilization and Number Exhaust

Bandwidth agrees with the state commissions and other commenters that continue to recognize the increased potential for number exhaust posed by permitting innumerable non-carriers to have direct access to number resources within the current number administration constructs. The California Commission succinctly highlights the economic cost advantage that would accrue to non-carriers if they are provided preferential treatment over carriers in terms of number utilization requirements. In addition, a number of commenters share the Commission’s focus on number utilization, state commission access to data and reclamation activities, and filing NRUF Reports.⁴⁵

Yet, some non-carriers appear wholly unaware of the concerted federal and state campaign to ensure the stewardship of this “valuable resource,” – as the Commission itself has

⁴³ Although Vonage concurs that if it obtains access to numbering resources it should bear its fair share of the costs of operating number administration and number portability databases, the fact remains that this contentious issues is inadequately addressed given the piecemeal, ad hoc nature of this proceeding to date. *See* Vonage Comments at 24 (citing *Universal Service Contribution Methodology, Report and Order and Notice of Proposed Rulemaking*, 21 FCC Rcd. 7518 (2006)) (“Vonage Comments”).

⁴⁴ *See, e.g.*, Verizon Comments at 4; CenturyLink Comments at 21.

⁴⁵ *Numbering Policies for Modern Communications, Notice of Proposed Rulemaking, Order, and Notice of Inquiry*, 28 FCC Rcd. 5842, ¶ 22 (2013).

so stated. Non-carrier SmartEdgeNet (“SEN”) states that concerns about number exhaust are “overrated,” and that number resources are “essentially an unlimited resource.”⁴⁶ SEN ignores the fact that the cost to introduce 12- or 14-digit dialing has been estimated at \$50-150 billion.⁴⁷ SEN also recites anecdotal but entirely unsupported statements that current trends suggest a decrease in the use of number resources.⁴⁸ SEN’s musings stand in sharp contrast to regulators who are tasked with managing numbers, such as the Wisconsin and California Commissions, who have submitted hard data indicating that number exhaust continues to be a serious concern for state commissions, that it is critical to implement measures that guard against number exhaust,⁴⁹ and serious concern that the Commission should have about number exhaust in major populous rate centers.⁵⁰

The states have raised a series of concerns about number exhaust and suggest measures that might help alleviate number exhaust.⁵¹ While such concerns are well-taken, a comprehensive and sufficient record has not been developed here, indicative of the piecemeal nature of this proceeding to date. Basic issues have not been addressed, such as how many new non-carriers are anticipated to request LRNs and the states in which they are expected to request them. There is data available from states that require interconnected VoIP providers to register and the Commission should obviously review this information before acting here. The

⁴⁶ SEN Comments 11.

⁴⁷ See Letter from James C. Falvey, Eckert Seamans Cherin & Mellott, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 4, CC Dkt. 99-200 (July 16, 2012) (citing *Number Resource Optimization, Report and Order*, 15 FCC Rcd 7574, ¶ 6 (2000) (citing NANC Meeting Minutes, Feb. 18-19, 1999, at 13)).

⁴⁸ See SEN Comments at 12.

⁴⁹ Joint Comments of the Public Utility Commission of Wisconsin, The Oregon Public Utility Commission, The Nebraska Public Service Commission, and the Minnesota Department of Commerce at 4, WC Dkt. 13-97 (July 19, 2013) (“Wisconsin PUC Comments”).

⁵⁰ CPUC Comments at 14-15.

⁵¹ See, e.g., Wisconsin PUC Comments at 4; CPUC Comments at 24, NJ Rate Division Comments at 10; PA PUC Comments at 9, 12.

Commission should also conduct a broader analysis of the impact of granting direct access to number resources to non-carriers on number exhaust as it is not clear from the data currently in the record as to what that impact will be. In sum, as part of a holistic review of the IP Transition, as urged by Bandwidth, before impacting this “valuable resource” the Commission should determine the extent of non-carrier interest in numbering resources, while reviewing which state proposals are best suited to preserve number resources.

D. Intercarrier Compensation

The comments on intercarrier compensation reflect that there are several carriers that recognize the significant need for the Commission to enforce the rules it established in the *Connect America Fund Order*.⁵² In the *Connect America Fund Order*, the Commission established a transition to “help minimize disruption to consumers and service providers by giving parties time, certainty, and stability” to adapt the Commission’s revised rules.⁵³ Bandwidth’s request for clarity in order to protect the integrity of this transition was echoed by CenturyLink, which found that “[c]larifying these issues will go a long way toward ensuring that the Commission does not open an opportunity for service providers to create new arbitrage opportunities”⁵⁴ CenturyLink also requested that the Commission ensure that expanding numbering rights “does not undermine the existing intercarrier compensation structure.”⁵⁵ Other commenters are concerned that “terminating carriers should not be required to negotiate separate interconnection agreements with each and every VoIP operator.”⁵⁶ These valid concerns are registered in addition to those that have been previously raised by Bandwidth, Level 3, CompTel,

⁵² See *CAF Order*, ¶ 736.

⁵³ See *CAF Order*, ¶ 798.

⁵⁴ CenturyLink Comments at 15.

⁵⁵ *Id.* at 16.

⁵⁶ Comments Of Interisle Consulting Group LLC, Terra Nova Telecom Inc., And Aero Communications LLC at 13, WC Dkt. 13-97 (July 19, 2013).

and NTCA, among others, who have articulated why continued and/or newly created uncertainties will lead to further disputes and unnecessary marketplace disruption.⁵⁷

While the Commission sought to resolve and stabilize switched access charge rules in the *Connect America Fund Order*, sharp disputes persist and arise from the same arguments made prior to the release of the Order, an order crafted to put an end to such disputes, but unfortunately to no avail.⁵⁸ From this perspective, AT&T's disputing access charges for VoIP traffic post-*Connect America Fund Order* on one hand, while supporting VoIP providers direct access to numbering resources on the other, is problematic.⁵⁹ Here, the Commission should be mindful that Bandwidth, as a CLEC with a national footprint, has fully enabled PSTN-IP traffic exchange at scale, and as a result has borne the brunt of significant intercarrier compensation disputes on behalf of its non-carrier customers. And despite ICC reform, some disputes unfortunately remain.⁶⁰ Opening the spigot here to numbering resources would only sow more uncertainty and litigation. Further, failure to clearly address intercarrier compensation issues will almost certainly lead to an even higher incidence of call completion problems.

Therefore, before complicating the intercarrier compensation environment further by continuing to consider how non-carriers might be able manage their own numbering resources

⁵⁷ See, e.g., Bandwidth Comments at 10 (unauthorized use of numbers); CompTel Comments at 15 (intercarrier compensation concerns); Comments of Level 3 Communications, LLC at 9, WC Dkt. 13-97 (July 19, 2013) (discussing the need for an authority to assist when disputes arise, for example during porting); NTCA Comments at 6 (intercarrier compensation issues).

⁵⁸ See, e.g., Letter from Tamar E. Finn, Bingham McCutchen LLP, to Marlene H. Dortch, Secretary, Federal Communications Commission, CC Dkt. 96-45 (June 17, 2013).

⁵⁹ AT&T Comments at 21 (parties opposing direct access to numbering “fail, however, to offer any concrete evidence to substantiate their claims that providing direct access to numbers . . . would result in practical problems or otherwise raise significant policy issues.”).

⁶⁰ To its credit, AT&T agrees that yet more disputes may law in waiting: “some billing issues may arise once interconnected VOIP providers obtain direct access to numbers.” AT&T Comments at n.48. Further, AT&T suggests that these issues will simply be resolved by negotiated “workarounds,” which in practical terms typically means payments by AT&T will be withheld as leverage to accomplish a much reduced payment obligation or other concession from the other carrier in the form of a “negotiated settlement.” The result will not reflect the consumer protections sought by the Commission but rather the relative leverage of one entity of another.

and all the attendant responsibilities that entail for the first time, Bandwidth urges that the Commission would be best served to first enforce the Symmetry Rule in the *Connect America Fund Order*.

E. Certification Requirements

The comments relating to certification requirements highlight the need to either: 1) continue to permit only state-certificated carriers to obtain direct access to number resources; or 2) conduct holistic reform that includes uniform nondiscriminatory certification standards for all providers, carriers and non-carriers alike. Although many commenters support retaining the current system of state-certificated carriers, others who arguably stand to benefit most from a bifurcated system (*e.g.*, BOCs and interconnected VoIP providers) support a discriminatory federal level approval process for non-carriers. Some even go so far to suggest that technical, managerial and financial qualifications are not necessary to provide service.⁶¹ Given the notable increase in consumer protection related issues in the market that appear to be fundamentally related to non-standardized processes being more and more commonly utilized by non-carriers, the Commission should not “throw gas on the fire” by dramatically lowering the entry prerequisites for untold quantities of new non-carrier entrants.

The NTCA is clear here: “the Commission should continue to limit direct access of numbers to certified carriers.”⁶² As the Wisconsin, Oregon, Idaho, Nebraska, and Minnesota Commissions have stated, “VoIP providers should not have direct access to numbering resources

⁶¹ *See, e.g.*, SEN Comments at 15; Comcast Comments at 5 (VoIP providers should be permitted to offer different documentary evidence to access numbers than state certification); AT&T Comments at 13 (claiming the FCC’s documentation process should obviate the need for state CPCNs, and the federal-administered program can provide a suitable substitute).

⁶² NTCA Comments at 4.

without being subject to all of the same obligations imposed on other providers.”⁶³ If it is the Commission’s intent to radically reduce the longstanding jurisdiction of the states that exercise management oversight through established certification procedures, it should do so as part of a much more complete review of the state and federal public policy and regulatory frameworks that exist under the Act today. Further, failure to conduct a thorough process to establish a new uniform set of certification requirements will cause all providers to react strongly and swiftly as they try to find shelter in the storm. Instead, the Commission should either limit direct access to carriers and leave certification to the states, or alternatively it must conduct the proper holistic review and create a coherent streamlined system for all providers obtaining direct access to number resources.

F. Facilities Readiness

The Commission should retain the requirement that only carriers can obtain direct access to number resources and the current facilities readiness requirement. If the Commission creates relaxed facilities readiness requirements, it should only do so as part of a holistic review revising the requirements for all providers.

The California Commission recognizes the importance of this issue and recommends that a working group be convened to address this issue.⁶⁴ If the Commission intends to create a discriminatory requirement that departs from the current carrier requirements, Bandwidth agrees that there should significant further analysis of this issue and that this should be part and parcel of the overarching IP Transition implementation proceedings. Facilities readiness by carriers is demonstrated by providing a nondiscriminatory, transparent and publicly available Section

⁶³ Wisconsin PUC Comments at 6. *See also* CompTel Comments at 3 (“The Commission, however, must ensure that all providers obtaining direct access to the numbering resources are subject to all the same statutory and regulatory requirements with respect to the use and the cost of administering such numbers . . .”).

⁶⁴ CPUC Comments at 16.

251/252 interconnection agreement. Because the Commission has not determined the extent to which IP interconnection should be governed by the Act, it is premature to determine whether non-carriers should be required to produce interconnection agreements to meet the facilities readiness requirement. This highlights Bandwidth's point that proceeding with direct assignment to non-carriers without addressing the many interrelated issues is not a workable approach.

Facilities readiness is critical because when the Commission established the requirements for SBCIS, it was keenly focused on ensuring that AT&T (then SBC) and other large carriers would not discriminate in their arrangements.⁶⁵ While Vonage highlighted this concern at the time,⁶⁶ Vonage recommends that non-carriers prove routing capability by certification by their partner LECs (Vonage at 19-20), and "a flexible definition of facilities readiness that would allow VoIP providers to demonstrate that they have commercial agreements in place to enable connectivity to the PSTN through alternative marketplace solutions"⁶⁷ Yet, now that the requirements would otherwise apply to Vonage, favored relief through relaxed requirements is sought in recognition of their "unique position in the marketplace."⁶⁸

Vonage also recommends that non-carriers prove routing capability by certification by their partner LECs.⁶⁹ But this does not address the discrimination issue where the partners they are interconnecting with are subject to carrier-based regulatory requirements; and secondly, it fails to address traffic routed through alternate arrangements that eventually returns to the PSTN for termination. Not surprisingly, and in a move likely to be followed by many others, AT&T seeks to eliminate its ILEC requirements and shift to "non-carrier" status (*i.e.*, AT&T-IS), and

⁶⁵ *Administration of the North American Numbering Plan*, Order, 20 FCC Rcd. 2957, ¶ 10 (2005).

⁶⁶ *Id.*

⁶⁷ Vonage Comments at 19.

⁶⁸ Vonage Comments at 18.

⁶⁹ Vonage Comments at 19-20.

towards more “inventive” interconnection solutions.⁷⁰ Again, this just further demonstrates the necessity of a complete and comprehensive rulemaking. If the Commission is to fundamentally change the interconnection rules that exist under the Act today, it must engage in a broadly applicable rulemaking that contemplates the regulatory framework of the future at fundamental levels, which cannot be accomplished in this proceeding.

⁷⁰ AT&T Comments at 11.

IV. CONCLUSION

Overall, the breadth of the opening comments support Bandwidth's position that the best way for the Commission to continue to accelerate the IP Transition is to conduct a holistic review of all aspects of the transition to IP networks. However, the Commission, in order to guide this industry and its diverse stakeholders prudently and safely forward in this IP Transition, must conduct a comprehensive review of the far reaching aspects of today's policies and regulations under the Act before it attempts to produce rules to implement widespread reform for a rapidly changing industry in a truly nondiscriminatory manner.

Respectfully submitted,

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