



N A R U C
National Association of Regulatory Utility Commissioners

August 8, 2014

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
2125 Rayburn HOB
Washington, D.C. 20515

The Honorable Henry Waxman
Ranking Member
Committee on Energy and Commerce
2322A Rayburn HOB
Washington, D.C. 20515

The Honorable Greg Walden
Chairman
Subcommittee on Communications,
Technology & the Internet
2125 Rayburn HOB
Washington, D.C. 20515

The Honorable Anna Eshoo
Ranking Member
Subcommittee on Communications,
Technology & the Internet
2322A Rayburn HOB
Washington, D.C. 20515

**Re: NARUC Comments to House Energy & Commerce Committee
White Paper #4 - "Network Interconnection"**

Dear Chairmen Upton, Walden and Ranking Members Waxman, Eshoo:

The National Association of Regulatory Utility Commissioners (NARUC) appreciates the House's thoughtful approach to reform of the federal telecommunications law and submits these responses to the whitepaper on Network Interconnection for your consideration.

If you have questions about any of the responses, please do not hesitate to contact the undersigned or NARUC's Legislative Director for Telecommunications Brian O'Hara at 202.898.2205 or bohara@naruc.org or J. Bradford Ramsay, NARUC's General Counsel at 202.898.2207 or jramsay@naruc.org.

Respectfully submitted,

/s/ Chris Nelson

Chris Nelson
Chair, NARUC Committee on Communications
Vice Chairman, South Dakota Public Utilities Commission

House E&C Telecom Act Update Whitepaper #4 Network Interconnection: Questions for Stakeholder Comment

1. *In light of the changes in technology and the voice traffic market, what role should Congress and the FCC play in the oversight of interconnection? Is there a role for States?*

Congress is right to focus separately on interconnection policy. History suggests that as long as a market contains competing providers with widely divergent market power and terminating monopolies, some interconnection oversight is warranted.

Indeed, for each of the 125 years the National Association of Regulatory Utility Commissioners (NARUC) has been in existence, assuring interconnections *between actual and potential competitors* has been a source of concern for federal and State policymakers across almost all industries with critical infrastructures.¹

As Peter W. Huber, Michael K. Kellogg & John Thorne correctly note in “Federal Telecommunications Law”:

[T]elephone companies are quite clearly “common carriers.” They have long been expected to serve all comers and charge similar rates for similar services...viewed as paradigm “common carriers,” so common, so ubiquitous . . . that one could scarcely imagine them operating any other way – except as it turned out, when a would-be “customer” happened to be another carrier. The problem had been faced – and resolved correctly – half a century before the birth of telephony, in legislation for telegraphy. The Post Roads Act of 1866 required telegraph companies to interconnect and accept each other’s

¹ In the electricity sector, for example, there is Section 210 of the Public Utility Regulatory Policies Act of 1978. Section 210(a) directs the Federal Energy Regulatory Commission (FERC) to prescribe rules requiring electric utilities to deal with qualifying cogeneration and small power facilities. Shortly after PURPA became law, FERC promulgated a rule requiring utilities to make such physical interconnections with cogenerators and small power producers as are necessary for purchases or sales authorized by PURPA. Overall, the responsibility for establishing generator interconnection rules is split between the FERC and NARUC’s member State commissions. Rules for generator interconnection to distribution level facilities (generally below 100 kV) are generally the responsibility of State commissions. Rules for generator interconnection to transmission level facilities (generally 100 kV and above) are FERC’s responsibility, *e.g.*, in 2003, FERC adopted standard procedures and a standard agreement for the interconnection of large generation facilities to the grid (Order 2003), in 2005, procedures and technical requirements for the Interconnection of 20 megawatts (MW) Wind facilities (Order 661), and later established procedures and a standard agreement for the interconnection of generators rated at 20 MW or less, regardless of technology type (Order 2006). *See, e.g., An Introduction to Interconnection Policy in the United States*, online at: <http://www.naruc.org/international/Documents/BiH%20Interconnection%20Policy.pdf>. Compare, NARUC’s *Model Interconnection Procedures and Agreement for small Distributed Generation Resources* (2003), online at: http://www.naruc.org/Publications/dgiaip_oct03.pdf. Similarly, in the gas sector, State commissions regulate in-state transportation over the utilities’ transmission and distribution pipeline systems, storage, procurement, metering and billing.

traffic. If similar obligations had been imposed on telephone companies [then], local exchanges might have remained competitive.....but legislators, regulators and the courts missed the opportunity and adopted instead a narrow understanding of a common carrier's obligations to carry its competitors' traffic ... As a result, the Bell System continued its march toward monopoly unchecked.²

In 1996, Congress, following the examples set by State experiments in local exchange competition in the early 1990s³ finally grasped this missed opportunity and imposed, in 47 U.S.C. § 251, a duty on all carriers to “interconnect and accept each other’s traffic.”⁴ Wisely, Congress also required a subset of carriers, those with market power and significant terminating monopolies, to participate in State arbitrations if arm’s-length negotiations fail to result in an agreement to interconnect.⁵

Significantly, the application of this principle was not in any way related to the network technology or any associated communications protocols used to provide the needed services.

The current market conditions are the result.

Lawmakers who want the market to *stay* competitive should be the strongest advocates for continued application of the non-discriminatory, technology and protocol neutral interconnection backstop in Section 251-2, which only is implicated when competitors cannot reach agreement through arm’s-length negotiations.

² Reprinted with permission in, Benjamin, Stuart Minor, Lichtman, Douglas Gary & Shelanski, Howard A, *Telecommunications Law and Policy*, Carolina Academic Press (2001), at page 608, {emphasis added}.

³ The way Congress cracked open the local phone market to competition was in large measure by imposing the proven principle in the Post Roads Act of 1866 inherent in all those *early 1990 State local competition experiments*: requiring competitors to interconnect and terminate each other’s traffic. The validity of a principle is unrelated to when the principle was discovered (or first imposed). Interestingly, the antitrust principles that many argue should substitute for 19th century “common carriage” are just as old as the 1934 Telecommunications Act (which admittedly was not the first application of “common carrier” type obligations on telephony). The *Sherman Act* passed in 1890 (forty four years before the 1934 act) – the *Clayton Act*, enacted in October of 1914, predates the 1934 telecommunications legislation by 20 years. The *Kingsbury Commitment* (1913) was also an antitrust action. Note, the age of the *Sherman* and *Clayton Acts*, just like the vintage of the first application any specific “common carrier” public interest obligation, does not provide any insight into their usefulness in addressing inappropriate carrier conduct in 1934, 1993, 1996 or 2014.

⁴ See, 47 U.S.C § 251(a) “Each telecommunications carrier has the duty – (1) to interconnect directly or indirectly with the facilities and equipment of other carriers.”

⁵ See, 47 U.S.C § 251(c)(1) (1996).

Most competitive problem delaying the efficient roll-out of Internet Protocol (IP) services arising in these markets today are driven by arguments that carriers do not have to comply with the scheme established by Congress in 1996.

The most important outstanding *interconnection* issues are driven by *claims* by a few, not coincidentally, very large carriers with significant market power⁶ – that certain types of interconnection (IP-to-IP Voice) are not subject to the backstop interconnection procedures imposed by Congress in 47 U.S.C. §§ 251-2.⁷ Most other (predominately smaller) competitors in this market sector - cable providers,⁸ rural carriers,⁹ and competitive local exchange carriers (CLECs),¹⁰ agree that the incumbents need to fulfill their obligations under 251-2 to interconnect.

⁶ The FCC's most recent local competition report indicates that the public switched telephone network (PSTN - defined here as retail switched access lines and VoIP subscriptions) consists of just over 135 million retail local telephone connections (as of June 2013). *Local Telephone Competition*, Status as of June, 2013, Industry Analysis Division, Figure 1, page 2. Of this, AT&T, Verizon and CenturyLink serve 47% of the total connections (including VoIP). Sources: SEC 10Q Reports (2Q 2013) for AT&T at 22, Verizon at 26, and CenturyLink at 23. When including mobile subscriptions, AT&T and Verizon (including their mobile affiliates), serve *at least* 62% of the total connections (which does not include wholesale subscriptions such as CenturyLink reselling Verizon's wireless service). Sources: SEC 10Q Reports (2Q 2013) for AT&T at 27, and Verizon at 29.

⁷ As NARUC pointed out on pages 2-3 of our January 31, 2014 Response to White Paper #1, available online at: <http://www.naruc.org/Testimony/140131NARUCFINALcommentstoHouseEC96whitepaper10457pm.pdf>, "*The problem in many instances is not the Act, but the broad, and some might argue, unwarranted discretion the judiciary has given the FCC to implement it.*" This discretion necessarily and significantly diminishes Congress' authority to specify policy.

⁸ *See e.g.*, Comments filed *In the Matter of Connect America Fund, et al*, in the FCC's WC Docket No. 10-90 *et al*, on Feb. 24, 2012 by the following cable representatives: National Cable and Telecommunications Association at 5 ("...the interconnection provisions of section 251 of the Act afford telecommunications carriers the right to establish IP-to-IP voice interconnection with an incumbent local exchange carrier (ILEC) network for the provision of telephone exchange service and exchange access."); Time Warner Cable at 5 ("... negotiating IP-to-IP interconnection agreements under Section 251 . . . is not merely an aspiration, but rather is a fundamental statutory obligation of ILECs."); Charter Communications at 4 ("An ILEC's duty under Section 251(c)(2) to provide interconnection for "any requesting telecommunications carrier . . . at any technically feasible point within the [ILEC's] network" clearly encompasses IP-to-IP interconnection arrangements."). *See also* Letter of Howard J. Symons, on behalf of Cablevision and Charter Communications, WC Docket No. 10-90 *et al*, p. 1 (filed Oct. 12, 2011) ("[S]ection 251(c)(2) requires ILEC to provide IP-to-IP Interconnection...IP-to-IP interconnection will ensure that consumers enjoy the full benefits of IP services and networks, and encourage all carriers to migrate to IP-based networks.").

⁹ *See e.g.*, Comments filed *In the Matter of Connect America Fund, et al*, in the FCC's WC Docket No. 10-90 *et al*, on Feb. 24, 2012 by the following rural carrier associations: National Exchange Carrier Association, National Telecommunications Cooperative Association, The Organization for the Promotion and Advancement of Small Telecommunications Companies, and the Western Telecommunications Alliance at 38 ("...Sections 251 and 252 of the Act govern all interconnection arrangements, including IP-to-IP Interconnection for the purposes of exchanging traffic between carriers."); Alaska Rural Coalition at 17 ("[R]egulation of IP-to-IP networks should remain consistent with [] regulation of traditional interconnection. All carriers should remain obligated to interconnect their networks in the most efficient configuration possible and negotiate those contractual relationships in good faith, consistent with the Telecommunication Act obligations outlined in section 251."); Nebraska Rural Independent Companies at 27 ("...Sections 251/252 interconnection framework...will ensure that any migration from TDM to IP-based transmission technologies and then to IP-to-IP technologies is not hampered by those entities with the ability to exercise market power ...").

¹⁰ *See e.g.*, Comments *In the Matter of Connect America Fund, et al*, in the FCC's WC Docket No. 10-90 *et al*, filed on Feb. 24, 2012 by the following competitive carriers and their trade association: COMPTTEL at 13-20; XO at 12-15; Cbeyond *et al* at 20-25; U.S. TelePacific *et al* at 7-14.

The result of the largest incumbent carriers' effective (thus far) assertions of their market power: There have been very few actual IP-to-IP interconnection arrangements for voice service.¹¹

This can only have the effect of increasing costs, undermining competition, and slowing the rollout of IP-based services along with any associated efficiencies and consumer/constituent benefits.

On information and belief, even though competitors have been seeking interconnection on an IP basis for voice services for literally years,¹² Verizon has only a few agreements that apparently do not cover their entire subscriber base (and these "commercial" agreements have not been filed with State utility commissions as required by Congress for approval or opt-in). Similarly, on information and belief, AT&T has not negotiated a single arrangement. Moreover, AT&T is currently appealing the first State arbitration of an IP-to-IP interconnection agreement (which Michigan entertained after arm's-length negotiations failed) to federal district court.

This current state of affairs is, if not impossible, certainly very improbable, if, as those large carriers suggest, competition (or some purported "new" network economics) is sufficient to protect competitors from market power abuses.

There is nothing about the current markets or IP-based network technology that eliminates the need for regulatory oversight at either the federal or State levels.

¹¹ See, e.g., Comments filed the FCC proceeding captioned: *In the Matter of Technology Transition Policy Task Force*, GN Docket No. 13-5, on July 8, 2013, by: Matrix Telecom at 5 (Specifically, the remaining impediment is the refusal of the RBOCs to negotiate agreements for IP interconnection pursuant to the framework of sections 251 and 252 of the Act.); Peerless Networks at 6 ("Competitive carriers have difficulty *only* with directly connecting in IP format with ILECs and their affiliates.") *emphasis added*; Sprint at 7 ("The fact that Sprint has yet to obtain IP-to- IP interconnection for voice traffic from any of the major ILECs is evidence of their unwillingness to comply with their obligations under the Act."); Bullseye Telecom and Access Point at 12-13 ("The impediment remains the refusal of the RBOCs to negotiate IP agreements under the framework of Sections 251 and 251 of the Act."); XO Communications at 8 ("Managed IP interconnection is far from ubiquitous at this time, in part because most ILECs refuse to abide by interconnection obligations under Section 251 of [the Act], to exchange IP-based voice traffic with requesting carriers."); T-Mobile at ("For T-Mobile [VoIP Interconnection] is typically with wireless carriers, cable operators, and [CLECs] rather than [ILECs] with whom, in T-Mobile's experience, it has been exceedingly difficult to negotiate IP interconnection agreements."); Cablevision at 2 (While Cablevision has successfully negotiated IP interconnection agreements with competitive providers and IXCs, it has been unable to obtain IP interconnection from the ILECs.)

¹² Letter of William H. Weber, Cbeyond, *et al*, to Marlene Dortch, GN Docket No. 09-51, p. 1, filed Sept. 22, 2009. As the competitors explained, instead of agreeing to interconnect and exchange traffic on an IP-basis, the major ILECs require competing carriers to convert traffic to legacy time division multiplexing (TDM) format prior to delivering it to the ILEC, even where the ILEC itself has deployed facilities that could transport the traffic in IP packet form on its own network. The result of this forced conversion is increased cost for unnecessary media gateways, and reduced voice quality for consumers because of the unnecessary protocol conversions. *Compare*, Letter from Maggie McCready, Verizon, to Marlene H. Dortch, FCC, GN Docket No. 13-5, p. 3, filed Jan. 10, 2014. Verizon will only exchange traffic in IP format if its endpoint is in IP even though is it technically feasible and more economically desirable to establish the IP-to-IP interconnection for all traffic. While the majority of competitors' subscriber base is in IP, ILECs have less than 10% of their subscriber base in IP. *Local Competition Report*, p. 5, Figure 4.

NARUC has long supported technology neutral application of interconnection policies as a means to ensure a competitive marketplace. Unfortunately, the FCC has, through inaction, encouraged carriers to ignore Congress's instructions in Sections 251 and 252. The FCC's failure to clarify VoIP's regulatory status, through both Republican and Democratic Administrations, has spawned numerous otherwise unnecessary (and wasteful) State and Federal administrative proceedings and appeals at taxpayer and ratepayer expense.

However, the FCC has permitted carriers to qualify for federal universal service subsidies based on their provision of voice services using IP technology as "essential telecommunications carriers" under 47 U.S.C. § 214.¹³

Necessarily, therefore, as the FCC has effectively conceded in recent litigation, those "telecommunications carriers" are providing "telecommunications

¹³ See, *Connect America Fund et al.*, WC Docket No. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, FCC 11-161, 26 FCC Rcd 17663 (2011) (rel. Nov. 18, 2011) (*Transformation Order*), ¶¶ 71, 80 *mimeo at pages 28 & 38*, available online at: http://transition.fcc.gov/Daily_Releases/Daily_Digest/2011/dd111121.html. In the *Transformational Order*, the FCC specifies, in ¶ 80, that carriers are only required to provide one service to qualify for federal universal service support:

As a condition of receiving support, we require ETCs to offer voice telephony as a standalone service throughout their designated service area.¹¹⁷ As indicated above, ETCs may use *any technology* in the provision of voice telephony service. (Note 117 With respect to "standalone service," we mean that consumers must not be required to purchase any other services (*e.g.*, broadband) in order to purchase voice service.)" {emphasis added}

There is no requirement anywhere in the FCC's order to provide broadband as a "telecommunications service", *i.e.* separate from internet access services. Indeed, in ¶ 71, of the same order, the FCC concedes that its "determinations that broadband services may be offered as *information services* have had the effect of removing such services from the scope of the explicit reference to "universal service" in section 254(c)." Carriers have taken the FCC at its word. See, *e.g.*, *In re: Application of Cox California Telecom, LLC (U5684C) for Designation as an Eligible Telecommunications Carrier, Application 12-09-014 (Filed September 25, 2012)*, Decision 12-10-002 Oct. 3, 2013, Decision Approving Settlement Regarding Request For Eligible Telecommunications Carrier Status (rel. 10/07/2013), online at: <http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=78144856>, at pages 8-9, 11, where (i) the California commission found as a fact that "Cox does not distinguish between circuit-switched and packet-switched telephone services. The customer is merely ordering telephone service." And (ii) according to the order:

Cox asserts that as a certificated provider of competitive local exchange service in California, and by offering Basic Service and LifeLine service that utilize VoIP to the public on a nondiscriminatory basis, Cox fulfills the role of common carrier. *Cox further argues that because the FCC has ruled that the federal universal service program supports voice telephony alternatives to traditional phone service, any limitations in CPUC regulatory authority cannot and do not apply to an ETC designation....*Cox agrees that it is a common carrier by virtue of its holding of a CPCN from this Commission and by virtue of it offering services for which the underlying technology is VoIP to the public on a nondiscriminatory basis and it holds itself out to serve indifferently all potential users." {emphasis added}

If the required service, provided using IP technology is not a "telecommunications service", then the FCC's 2011 ruling may allow carriers to commit fraud by illegally accessing funds that Congress reserved to Title II *common carriers*, *i.e.*, 47 U.S.C. § 214 defined "essential telecommunications carriers" that are such carriers only to the extent that they are providing "telecommunications services."

services.”¹⁴ Therefore, there should be no question of the applicability of the Section 251 regime to IP-based voice services.

However, that has not stopped the FCC from, for over a decade, avoiding any clarification of VoIP’s status. As one industry observer recently pointed out, in a significant understatement:

*The FCC, for its part has failed to provide sufficient guidance. It has stated that it expects carriers to negotiate in good faith but it has failed to adopt actual rules. Thus lacking specific FCC direction, disagreements between ILECs and CLECs concerning IP interconnection are steadily increasing and State commissions are becoming involved.*¹⁵

And so – instead of legal procedures and negotiations over the details of such interconnections, States and competitors waste resources at the FCC,¹⁶ and,

¹⁴ As the Joint Petitioners, including NARUC, pointed out on reply in that litigation:

Petitioners argued that by adding “voice telephony service” to the list of supported services under section 254(c)(1), without limiting the definition of that service to “telecommunications services,” the *Order* violates §254(c)(1). USF Br. 17-18. Respondents denounce this argument as “wrong,” FCC Br. 24, but then concede virtually all its premises. They agree that “only ‘eligible telecommunications carriers’ are eligible for subsidies under section 254,” and that an ETC must be a “common carrier” that offers supported services. FCC Br. 26, *citing* 47 U.S.C. §214(e)(1)(A). They also agree that an entity can be designated as an ETC under the statute only if it “complies with appropriate federal and state requirements” applicable to telecommunications carriers under Title II of the Act. *Id.*, *quoting IP-Enabled Services*, 20 F.C.C.R. 10245, 10268 (2005) (subsequent history omitted). This concession was not apparent on the face of the *Order*, as the FCC specifically included VoIP in the definition of “voice telephony service” without classifying VoIP as a telecommunications service. *Order*, ¶63 (JA at 412); FCC Br. 26.,

Joint Universal Service Fund Reply Brief, at page 11, filed July 30, 2013, In Re: FCC11-161, 10th Circuit Case No. 11-9900. In the resulting decision, the court confirmed that carriers must have “common carrier” status to access funds. *See*, IN RE: FCC11-161 (10th Cir. May 23, 2015), Slip op. at 50, available online at: <http://ca10.washburnlaw.edu/cases/2014/05/11-9900.pdf>. (“The fact remains, however, that in order to obtain USF funds, a provider must be designated by the FCC or a state commission as an “eligible telecommunications carrier” under 47 U.S.C. § 214(e). See 47 U.S.C. § 254(e) (“only an eligible telecommunications carrier designated under section 214(e) . . . shall be eligible to receive specific Federal universal service support.”). And, under the existing statutory framework, only “common carriers,” defined as “any person engaged as a common carrier for hire . . . in interstate or foreign communication by wire or radio or in interstate or foreign radio transmission of energy,” 47 U.S.C. § 153(10), are eligible to be designated as “eligible telecommunications carriers,” 47 U.S.C. § 214(e). Thus, under the current statutory regime, only ETCs can receive USF funds that could be used for VoIP support.”)

¹⁵ Regitsky, Andrew, CCMi Blog: *Will Michigan IP Interconnection Decision be a Precursor for FCC?* Posted Jan 28, 2014 10:30:00 AM, available online at: <http://www.ccmi.com/blog/will-michigan-ip-interconnection-decision-be-a-precursor-for-fcc> (last accessed August 7, 2014). {emphasis added}

¹⁶ *See, e.g., Comments of the National Association of Regulatory Utility Commissioners*, filed In the *Matter of AT&T’s Petition to Launch a Proceeding Concerning the TDM-to-IP Transition*, FCC Docket No. 12-353, at page 3, available online at: <http://apps.fcc.gov/ecfs/document/view?id=7022113735> (“NARUC has spent the last decade urging the FCC to follow the technology-neutral approach of the Telecommunications Act and confirm the obvious, i.e., (1) that fixed (and nomadic) VoIP services are, in fact, “telecommunications services” and, as the NTCA Petition suggests, that “all interconnection for the exchange of traffic subject to Sections 251 and 252 is governed by the [1996 Act] regardless of the technology used to achieve such interconnection.”)

more recently, in court to respond to carriers, like AT&T, who still argue that its managed VoIP service is not a telecommunications service and is therefore not subject to §251-2 procedures – while simultaneously apparently refusing to enter arm’s-length negotiations for such access.¹⁷

Note, the service at issue in that case, AT&T’s managed VoIP product, fits squarely within the functional definition of “telecommunications services” in the Act.¹⁸

To both policy makers¹⁹ and your constituents, VoIP service is indistinguishable from the inappropriately-characterized “legacy voice services.” Moreover, *managed* VoIP services never touch the Internet.²⁰ Even today, it appears that over 89% of all VoIP-based traffic in the U.S., including VoIP-based services, is still provided via private, secure managed facilities. This excludes the small percentage of IP-based traffic that transits the Internet “cloud.” (e.g., Vonage initiated communications).

NARUC agrees with the earlier cited comments²¹ filed at the FCC on this topic. Those comments suggest the continued application of the 251-2 regime – which includes a crucial and well defined State role – to IP based voice services.

In 2008, NARUC passed a resolution²² “applauding the numerous advances in technology achieved by the telecommunications industry to enable the efficient

¹⁷ AT&T’s Brief on the Merits, at pages 114-15, filed June 26, 2014 in the case captioned: *Michigan Bell Telephone Co. v Sprint Spectrum L.P. et al.; U.S.D.C.-W.D.Mich.; Case No. 14-416, appealing* Michigan Public Service Commission “Order” *In the matter of the petition of SPRINT SPECTRUM L.P. for arbitration pursuant to Section 252(b) of the Telecommunications Act of 1996 to establish interconnection agreements with MICHIGAN BELL TELEPHONE COMPANY, d/b/a AT&T MICHIGAN.* Case Nos. U-17349, U-17569. Issued April 15, 2014. http://www.dleg.state.mi.us/mpsc/orders/comm/2014/u-17569_4-15-2014.pdf.

¹⁸ *See*, 47 U.S.C. § 153(50), (51), (53) (1996).

¹⁹ Indeed, the FCC has expressly acknowledged this functional equivalence. *See*, Report and Order and Further Notice of Proposed Rulemaking, *Connect America Fund et al*, WC Docket No. 10-90 *et al*, FCC 11-161, ¶ 946, n. 1906 (2011)(“ICC/USF Transformation Order and FNPRM”), *citing Telephone Number Requirements for IP-Enabled Services Providers; et al.*, WC Docket Nos. 07-243, 07-244, 04-36, CC Docket No. 95-116, Report and Order, Declaratory Ruling, Order on Remand, and Notice of Proposed Rulemaking, 22 FCC Rcd 19531, 19547, ¶ 28 (2007) (recognizing that interconnected VoIP services increasingly are viewed by consumers as a substitute for traditional telephone services).

²⁰ The only exceptions, of course, are when calls are placed to or received from a subscriber served by an OTT provider.

²¹ *See*, footnotes 8, 9, 10 & 11, *supra*.

²² *See, e.g.*, the July 2008 NARUC Resolution Regarding the Interconnection of New Voice Telecommunications Services Networks, online at: <http://www.naruc.org/Resolutions/TCInterconnection.pdf>. *See also* our February 2003 Resolution Relating to Voice Over The Internet Telecommunications, noting the linkage between VoIP and interconnection issues (“Voice over the Internet Protocol and intercarrier compensation issues are inextricably linked”) and urging the FCC to confirm its tentative

transmission of voice telecommunications,” while noting that the 1996 federal legislation, “in its imposition of interconnection requirements is technologically neutral and does not distinguish between circuit switched facilities and other network facilities that may be used to exchange voice telecommunications traffic.”

The resolution specifies that it remains “in the public interest for telecommunications carriers to interconnect their networks to exchange traffic in a technologically neutral manner, as provided for under Sections 251 and 252.”

NARUC’s State Commissioners are not the only policy-makers with extensive and practical experience in this sector to have spoken out on this issue. Two years ago, FCC Commissioner Jessica Rosenworcel (D) testified:

Congress, in laying out the definitions at the front of the Communications Act, speaks to telecommunication services *regardless of the technology used.*²³

FCC Commissioner Pai (R) made similar statements during his confirmation hearing:

Section 251 of the Communications Act specifies, among other things, that telecommunications carriers have “the duty to interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers.” When discussing interconnection, this provision neither mentions any particular technology that may be used by a telecommunications carrier nor distinguishes between telecommunications carriers using different technologies.²⁴

What Congress intended is obvious on the face of the 1996 legislation: It expects States and the FCC to work together to facilitate competition, broadband deployment, and universal service.²⁵ This partnership principle should continue in any new legislation.

decision that certain phone-to-phone calls over IP networks are telecommunications service, online at http://www.naruc.org/Resolutions/voice_over.pdf.

²³ Transcript, July 10, 2012 House Committee on Energy and Commerce, Subcommittee on Communications and Technology, Hearing on FCC Oversight; available at: <http://democrats.energycommerce.house.gov/index.php?q=hearing/hearing-on-oversight-of-the-federal-communications-commission-subcommittee-on-communications>.

²⁴ *S. Hrg. 112-480 - Nominations of Jessica Rosenworcel and Ajit Pai to the FCC*, at 78, available online at <http://www.gpo.gov/fdsys/pkg/CHRG-112shrg75046/content-detail.html>. (November 30, 2012).

The FCC lacks the resources to handle all possible disputes over interconnection policy. Congress already set out a basic framework for interconnection in 1996 – one that leverages State’s acknowledged fact-finding expertise.²⁶ It imposed a duty on all carriers to interconnect and puts in place a backstop – if commercial negotiations fail – where it is clear that some backstop is needed. The framework for assuring that competitors DO interconnect in ways that do not unduly favor larger carriers is in Sections 251 and 252.

It is a framework that has been tested.

It is a framework with a specific role for States that leverages both their expertise and numbers – a role that has clearly facilitated the transition to the current market conditions.

It is a framework that should continue in any future legislation.

2. *Voice is rapidly becoming an application that transits a variety of network data platforms. How should intermodal competition factor into interconnection mandates? Does voice still require a separate interconnection regime?*

Voice traffic transiting a variety of network protocols/”modalities” is nothing new. ISDN services were available in the late 1980s.²⁷ We’ve been able to call cell phones from land lines, and *vice versa*, practically since the inception of cellular service. There too, competing intercarrier interconnections have been the focus of concern over the years. But as noted earlier, the majority of interconnected voice services do not transit a common, public data platform or the Internet. Well over ninety percent of all interconnected voice traffic (and 89% of interconnected VoIP traffic)²⁸ in the U.S. is provided over private and securely managed network facilities.

²⁵ See, e.g., 47 U.S.C. §§251-2, 254 (1996).

²⁶ See, e.g., the November 2013 NARUC Federalism Task Force Report: *Cooperative Federalism and Telecom in the 21st Century*, p. 9, available at: <http://www.naruc.org/Publications/Federalism-task-force-report-November-20131.pdf>. (“States are experienced in investigating and resolving issues based on evidence and in collecting and examining multiple viewpoints through face-to-face adjudicatory proceedings, often preceded by advance discovery of information under oath, and followed by cross-examination of witnesses, presided over by an impartial hearing officer.”)

²⁷ See, e.g., Integrated Services Digital Network, Wikipedia.org, available online at http://en.wikipedia.org/wiki/Integrated_Services_Digital_Network (“Integrated Services for Digital Network (ISDN) is a set of communication standards for simultaneous digital transmission of voice, video, data, and other network services over the traditional circuits of the public switched telephone network. It was first defined in 1988 in the CCITT red book.”)

²⁸ Eighty-nine (89%) of interconnected VoIP subscriptions are for a *managed* voice service provided over a private, managed IP network, not an over-the-top (“OTT”). This means the traffic does not traverse the public Internet, and the traffic cannot be exchanged through the same peering/transit arrangements used for Internet traffic. Such Private managed networks

Certainly, the AT&T Michigan litigation referenced in Question 1 and the apparent snail's pace of IP-based interconnection for voice services strongly suggests that a back-up regulatory mechanism to arm's-length negotiations for voice interconnection is still needed.

Moreover, the premise for this question suggests an improper focus. NARUC is on record supporting a technology neutral approach to services. Policy makers should not be intervening in the market to favor or disfavor particular technologies – or in the somewhat misleading argot of Question 2 – a particular “application.”²⁹ Questions about the technology used or specifically how essential services like electricity, water or, in this case, voice services are provided are often invitations for policy-makers to distort market-based technology choices. The question is not what “application” or, more accurately, what technology/protocol is being used to provide the essential (in this case) voice service. Rather, Congress should continue to focus on the functional approach inherent in the definition of “telecommunications services” found in the current law. The 1996 Act definitions of “telecommunications services” do not reference any particular technology or protocol. Instead, the Act provides a functional definition of the essential service – one that necessarily includes point-to-point real time voice services provided for a fee and then applies public interest obligations to the service.

Congress should follow the example set by consumers (and the market). Consumers do not know or care about any difference between traditional TDM voice calls and VoIP calls, or whether a voice call is over wireless or wireline network. When setting interconnection or other public interest requirements to

provide what the market demands – a high quality voice service – not provide via a “best efforts” system. *2014 Local Competition Report*, p. 7, Figure 5. The FCC only requires separately reporting nomadic and non-nomadic VoIP subscriptions. Practically, nomadic VoIP subscriptions (which operate over any broadband connection) are OTT applications and non-nomadic VoIP services correspond with a managed architecture. AT&T and Verizon’s marketing, as well as this FCC subscribership data, confirms that the majority of customers, both residential and business, desire the continuation of PSTN quality and security, even if OTT offerings survive. Both carriers assure their customers that their VoIP services are not Internet services. *See*, <http://newscenter.verizon.com/press-releases/verizon/2010/fios-digital-voice-heres.html> “To understand the features and quality of FiOS Digital Voice, you first need to know that the service is not the same as the services you get with a little Internet adapter for your modem and phone, and it does not ever touch the public Internet.”

²⁹ It is inaccurate to suggest that any significant percentage of fee-based voice services are “applications” that transit the Internet. Simply because a voice service uses Internet Protocol-based (IP-based) technology does not mean that the service transits the Internet, or is accurately described as an Internet application. Certainly managed VoIP services – which is to say – *the overwhelming majority (89%) of fee-based subscription interconnected VoIP services* – do not fall into that category. The nature of the telephone call or communication does not change merely because a carrier uses IP technology. *Compare*, footnote 28, *supra*.

assure both a competitive market and constituent safety, Congress should not either. Congress, like consumers, should maintain ground rules that assure that customer expectations will be met.

From a policy perspective, Congress is likely to retain concerns about universal service, about 911/E911 communications, about disabled access to communications services, about the ability of law enforcement (with proper warrants) to tap into communications networks. Policy makers should strive to treat all technologies, protocols, and “applications” the same. An examination (and options for addressing) widely divergent market power, the existence or potential for essential facilities and/or terminating or originating monopolies, and perhaps technical issues associated with any new technologies (*e.g.*, 911/E911 service for a “mobile” voice service) is, of course, also required.

As the FCC correctly recognized:

Interconnection among communications networks is critical given the role of network effects. Historically, interconnection among voice communications networks has enabled competition and the associated consumer benefits that it brings through innovation and reduced prices.³⁰

3. How does the evolution of emergency communications beyond the use of traditional voice service impact interconnection mandates?

Government-imposed mandates for interoperable emergency communications remain a necessity.

As early experience with emerging nomadic VoIP providers conclusively demonstrates, it is something that the market will not always provide without regulatory intervention. It is, however, a crucial service that all consumers expect. This is another place where federal and State cooperation is needed. It is also another place where policy-makers should take a technology-neutral approach and have a functional focus on competing services. For example, if there is a government mandate for 911/E911 services – it should apply to all competing providers, regardless of the technology or mode of communications used.

³⁰ *In re Connect America Fund et al.*, WC Docket No. 10-90 *et al.*, (FCC, Rel. Nov. 28, 2011), Report and Order Further Notice of Proposed Rulemaking, *slip op.* FCC 11-161, ¶ 1009, at 381, 26 FCC Rcd 17663, 18044 (2011) (USF/ICC Transformation Order), *aff'd In re FCC 11-161*, Nos. 11-9900 and 11-9585 (10th Cir., May 23, 2014), *reh'g petitions pending*, at http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0206/FCC-11-161A1.pdf.

NARUC's 2013 report *Cooperative Federalism and Telecom in the 21st Century* cites network reliability and public safety a core principle of any update of communications policy, specifying that:³¹

States, the FCC, and service providers should work together to ensure that all consumers can access emergency services (i.e., 911, E911, and [next generation] NG911) regardless of the technology used to carry calls.

The FCC's outage reporting data provides a baseline for determining network reliability. This data should be shared with the States where allowed under applicable State laws so that the FCC and the States may work together to ensure that networks remain reliable.

States and the FCC should work together to resolve call completion problems so that all consumers may make and receive calls to all locations across the country.

States, the FCC, and industry should collaborate with broadband providers, electric utilities, and equipment manufacturers to address the issue of continuing voice service during major power outages.

Again a functional approach to services best serves your constituents. In 2007, the Minnesota Public Utilities Commission (MPUC), in a nod to consumer expectations and safety, ruled that over the top, nomadic VoIP provider Vonage was offering a telephone service and required the company to comply with State laws – binding on its competitors - to provide a functioning 911 emergency calling service.³² Vonage – a *nomadic* non-facilities based VoIP provider - appealed to federal district court. Ultimately, the issue of whether a technology neutral application of the State's emergency calling regime was appropriate went to the FCC, who chose *at that time* to preempt the State law based on a stipulation before the MPUC that Vonage could not differentiate between interstate and intrastate traffic. The FCC weighed right into the market to favor Vonage. It did not have to

³¹ See, e.g., November 2013 NARUC Federalism Task Force Report: *Cooperative Federalism and Telecom in the 21st Century*, p. 10, at: <http://www.naruc.org/Publications/Federalism-task-force-report-November-20131.pdf>.

³² Order Denying Temporary Relief, *In the Matter of the Complaint by the Department of Commerce Against Vonage Holding Corporation*, Minnesota Public Utilities Commission Docket No. P-6214/C-03-108 (rel. August 1, 2003), at page 1, online at: http://mn.gov/puc/documents/puc_pdf_orders/008377.pdf. The Minnesota Department of Commerce brought the complaint alleging that “the manner in which Vonage provides local service violates Minnesota law in that it fails to provide adequate 911 service.”

provide services its competitors were required to provide – including a reliably functioning 911/E911 service. The result was predictable. People died.³³

Unlike its competitors, for the first years of its operations, Vonage – like other *nomadic* VoIP providers – also did not pay into the federal universal service program until 2006,³⁴ or State universal service programs until after 2010.³⁵

Consumers purchased Vonage because it was marketed as less expensive competitor to traditional landline services. But most consumers expected it to have the same functionality as traditional voice – in this instance – that dialing 911 would get you to a public safety answering center located somewhere nearby. Ultimately, the FCC changed its mind.

Fortunately, the FCC preemption in this case was strictly limited [i] to so-called *nomadic*/"over-the-top" VoIP services, and [ii] in the time that it applied (until Vonage, and other *nomadic* providers could "sever" traffic, *i.e.*, provide a functioning 911/E911 service). The FCC has never attempted to preempt State oversight of so-called managed services (*i.e.*, VoIP services that never touch the Internet, which as noted earlier covers 89% of all fee-based VoIP traffic).

This is not an issue that is going away. Indeed, emergency communications issues continue to make headlines in the wireless voice sector.³⁶ The FCC

³³ See, e.g., "Mother Blames Baby's Death on Failed 911 Service", WESH Channel 2 News, Orlando, FL., May 7, 2005; available online at: <http://www.wesh.com/Mother-Blames-Baby-s-Death-On-Failed-911-Service/13110208#ixzz3A5TeOtzs>; Compare, *The State of Texas v. Vonage Holdings Corp.*, Cause No. GV500657, filed March 22, 2005, full text available at: <https://www.texasattorneygeneral.gov/oagnews/release.php?id=850>. See also, Harrowing testimony from three families, and several other State government 911officials, at the FCC's May 19, 2005 Agenda meeting, detailing the problems associated the lack of federal oversight (and because of the FCC's preemption vis-à-vis Vonage – State oversight) with *nomadic* VoIP calls, video available online at: <http://www.fcc.gov/events/open-commission-meeting-may-2005>.

³⁴ In June of 2006 the FCC adopted a [Report and Order](#) that requires interconnected VOIP providers to pay federal universal service assessments on interstate revenue. *In the Matter of Universal Service Contribution Methodology, WC Docket No. 06-122; Federal-State Board on Universal Service*, CC Docket No. 96-45, Report and Order and Notice of Proposed Rulemaking, FCC 06-94 (rel. June 27, 2006), available online at: https://apps.fcc.gov/edocs_public/attachmatch/FCC-06-94A1.pdf.

³⁵ On November 5, 2010, after litigation around the country and in federal courts and taxpayer expense, the FCC finally issued a declaratory ruling in which it held that going forward States may collect universal service fees on the intrastate revenues of *NOMADIC* interconnected VoIP providers. Managed VoIP operations were already subject to both federal and State assessments. *In the Matter of Universal Service Contribution Methodology; Petition of Nebraska Public Service Commission and Kansas Corporation Commission for Declaratory Ruling or, in the Alternative, Adoption of Rule Declaring that State Universal Service Funds May Assess Nomadic VoIP Intrastate Revenues*, WC Dkt. No. 06122, Declaratory Order, (rel Nov. 5, 2010), at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-185A1.doc.

³⁶ A February 2014 NARUC resolution urges the FCC to: develop and promptly adopt indoor and outdoor location accuracy requirements for 911/E911. *Resolution Urging the Federal Communications Commission to Improve Public Safety through Improved Location Accuracy Requirements for Wireless 911 Calls*, available at: <http://www.naruc.org/Resolutions/Resolution%20Urging%20the%20Federal%20Communications%20Commission%20to%20Im>

estimates that seventy percent (70%) of all 911 calls made each year originate from a cell phone/wireless caller. In the wireless market, the main issue remains accurately locating the wireless caller, especially if they are inside a building. Recent 911 call data filed with the FCC from California, North Carolina, Oregon, Pennsylvania, Texas, Utah and Washington showed that a large percentage of wireless 911 calls over the past few years may have been delivered to their respective PSAPs without accurate location information, endangering the public.

Any new federal legislation should facilitate additional federal and State cooperation on emergency communications. Like interconnection policy writ large, policy makers should take a technology neutral approach and have a functional focus on any mandates that should apply to all competing services.

4. *Ensuring rural call completion has always been a challenge because of the traditionally high access charges for terminating calls to high-cost networks. Does IP interconnection alleviate or exacerbate existing rural call completion challenges?*

The question includes an inaccurate premise. Rural call completion has not always been challenging *because* of high access charges. For years calls to rural America were completed without major issues despite much higher termination charges than today.

The migration to IP does not either alleviate or exacerbate the call completion problem. The technology transition itself is not a factor. Time Division Multiplexing-based (TDM) services and IP- based networks interconnect regularly. The technical ability to do so is well established and commonplace.

Rural call completion problems are a relatively recent development. They are, in fact, at least in part, a result of the FCC's reticence in classifying fee-based interconnected VoIP services and making (and enforcing) VoIP carrier compliance with the access charge regime. The FCC's determination at least initially to treat competing (and functionally equivalent) services differently facilitated, among other things, the "phantom traffic" phenomenon and the rise of unregulated "least cost" routing services which are the breeding grounds for the bulk of call completion issues.³⁷

[prove%20Public%20Safety%20through%20Improved%20Location%20Accuracy%20Requirements%20for%20Wireless%20911%20Calls.pdf](#).

³⁷ See, e.g., Nov. 19, 2012 *Petition of the National Telecommunications Cooperative Association for a Rulemaking to Promote and Sustain the Ongoing TDM-to-IP Evolution*, at 7 note 13 ("Certainly the experience of rural consumers in failing to

While the FCC has not directly acknowledged this fact, it has acknowledged that in some cases:

service providers in the call path intentionally remove or alter identifying information to avoid paying the terminating rates that would apply if the call were accurately signaled and billed....Parties have also disguised or routed non-local traffic subject to access charges to avoid those charges in favor of lower reciprocal compensation rates.³⁸

And that the solution is treating all carriers providing functionally equivalent services the same (as Congress intended). Specifically, the FCC only recently decided the solution was to;

modify our call signaling rules to require originating service providers to provide signaling information that includes calling party number (“CPN”) for all voice traffic, *regardless of jurisdiction*, and to prohibit interconnecting carriers from stripping or altering that call signaling information.³⁹

The FCC also found that:

Applying our call signaling rules to interconnected VoIP service providers will enable service providers terminating interconnected VoIP traffic to receive signaling information that will help prevent this traffic from terminating without compensation.⁴⁰

If the FCC continues to treat all interconnected fee-based voice traffic the same, that is – in a technology neutral fashion – then the current law provides sufficient authority to manage this problem. If it applies the same rules and enforcement priorities to carriers providing functionally equivalent services, then emerging IP-to-IP interconnections cannot make the existing problems any worse.

receive many long distance telephone calls because of a shadowy niche between regulated long distance services and ostensibly unregulated least-cost router services fosters little, if any, confidence in the ‘market’ alone to solve such concerns.”), online at: <http://apps.fcc.gov/ecfs/document/view;jsessionid=8JXLQxcVtChTBLMJLMKN28xSgR4HJWBfsBJptwspIQ139KnpC6GV!-2240888401-56284754?id=7022064353>

³⁸ *In the Matter(s) of the Connect America Fund et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663 (2011), at ¶ 703, mimeo at pp 233-35, available online at: http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0206/FCC-11-161A1.pdf.

³⁹ *Id.* at ¶704.

⁴⁰ *Id.* at ¶718.

NARUC is pleased that the FCC has taken action to address the problem and that it continues to focus resources on this specific issue. The agency's concern is reflected in the 2011 order quoted above. The FCC should be commended for, in the *Report and Order* that accompanied the November *FNPRM*, adopting recording, retention, and reporting requirements to improve its ability to monitor and address call completion problems.⁴¹

But this requires a commitment on the part of the FCC (and Congress) to ensure and enforce technology-neutral policies. Regardless of the cause, this is an area that demands continued Congressional, FCC and State scrutiny as call completion in rural areas continues to be a problem.⁴² Any future legislation should facilitate FCC oversight, and specifically preserve State enforcement authority to address these issues.⁴³

⁴¹ *In re Rural Call Completion*, WC Docket No. 13-39, (FCC, Rel. Nov. 8, 2013), Report and Order and Further Notice of Proposed Rulemaking, *slip op.* FCC 13-135, https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-135A1.pdf.

⁴² *See, e.g.*, Rural Associations' Comments at 2: Rural call completion problems continue to be serious and widespread. Since the Commission's Rural Call Completion Order was released, there has been no measurable abatement in the frequency or seriousness of the issue. The problems continue to manifest themselves in periods of dead air on the calling party's end after dialing a number, inaccurate intercept messages, and poor voice quality. The negative impacts on rural consumers, businesses, and the telcos that serve them are immeasurable. Rural consumers are frustrated, public safety is compromised, rural businesses are losing valuable customers and rural telcos are suffering the loss of large customers and the goodwill of their subscribers. The financial and public safety toll of originating providers failing to use high quality routes and ensuring that their calls properly complete cannot be overestimated. Available at: <http://apps.fcc.gov/ecfs/document/view?id=7521088069>. NARUC's *Resolution on Federal-State Joint Efforts to Address and Resolve Call Termination Issues*, available at: <http://www.naruc.org/Resolutions/Resolution%20on%20Efforts%20to%20Address%20and%20Resolve%20Call%20Termination%20Issues.pdf>; and *Resolution Addressing Rural Call Termination Issues*, available at: <http://www.naruc.org/Resolutions/12%200801%20Passed%20Resolution%20Addressing%20Rural%20Call%20Termination%20Issues.pdf>.

⁴³ Given the importance of call completion to public safety, the economy, and consumers, and the need for more analysis of whether the issues involve intrastate calls or holders of State-issued authorizations to offer interconnected telephone service, a continuing role for States remains critical. States have been active. For example, California has an *Order Instituting Rulemaking to Address Intrastate Rural Call Completion issues*, I. 14-05-012. Minnesota conducted a proceeding on rural call completion, MPUC Docket No. P999/C1-12-1329. The Oregon PUC has issued an order addressing intrastate call termination problems, OAR 860-032-0007 (<http://apps.puc.state.or.us/edockets/docket.asp?DocketID=17675>). The Missouri commission conducted an extensive investigation of call completion problems there (File No. 2012-0112, available online at: <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0CC0QFjAC&url=https%3A%2F%2Fwww.efis.psc.mo.gov%2Fmpsc%2Fcommoncomponents%2Fviewdocument.asp%3FDocId%3D935773172&ei=VhHpU-bNo6HyAToyYC4Cg&usg=AFQjCNGWbfXuRHHPQooFTfVzzC6zmUMfuQ&bvm=bv.72676100.d.aWw&cad=rja>). NARUC has also been active on the issue, at the behest of its member commissions, adopting several resolutions, *e.g.*, a July 2011 *Resolution on Federal-State Joint Efforts to Address and Resolve Call Termination Issues*; available at: <http://www.naruc.org/Resolutions/Resolution%20on%20Efforts%20to%20Address%20and%20Resolve%20Call%20Termination%20Issues.pdf> and a July 2012 *Resolution Addressing Rural Call Termination Issues*; available online at: <http://www.naruc.org/Resolutions/12%200801%20Passed%20Resolution%20Addressing%20Rural%20Call%20Termination%20Issues.pdf>. The California Public Utilities Code 558 requires: "Every telephone corporation and telegraph corporation operating in this State shall receive, transmit, and deliver, without discrimination or delay, the conversations and messages of every other such corporation with whose line a physical connection has been made." About eight States have similar laws that require telephone corporations to promptly carry and complete calls. No future legislation should undermine State laws that establish and create the basis for State enforcement of this critical duty.

5. *Should we analyze interconnection policy differently for best-efforts services⁴⁴ and managed services where quality-of-service is a desired feature? If so, what should be the differences in policy between these regimes, and how should communications services be categorized?*

NARUC has not taken a detailed position on this question.

NARUC's general position is – to the extent possible – if it's a functionally equivalent (and interconnected fee-based) service, any government interconnection requirements (and other public interest mandates concerning, *e.g.* signaling/emergency communications) should be applied to all competitors on a technology-neutral basis.

In the context of allowing/requiring interconnection for non-facilities-based interconnected fee-based voice service providers, there does not seem to be a logical alternative.

This question gets to the heart of what values we place upon the network and the services that run over it. Historically, we have placed a high value on the quality of service of voice because it was the primary way we communicate with emergency 911 services and use the network for business and personal needs.

Fortunately, now and for the near term, at least in the voice context, the overwhelming majority of fee-based IP voice calls are not “over-the-top” or “best efforts” traffic. The majority is managed and is not part of the public internet (or the broad “internet cloud”).

⁴⁴ A common misnomer is that imposing oversight on “nomadic” providers like Vonage and the few others that actually do use the Internet to provide “over-the-top” voice services is somehow “regulating the Internet.” It is no more “regulating the Internet” than regulating financial services, gambling, banks, drug companies, or insurance businesses that, like Vonage, do not own or control any part of the public Internet, but do provide services only *through* the Internet, is “regulating the Internet.” Do policy makers care if people die because they expect 911 services to work properly and they do not? Should over-the-top providers be subject to CALEA (law enforcement) requirements? What about contributing to the universal service program – an obligation that only falls on “telecommunications service” providers in the 1996 Act? The FCC, under the last Administration, has said yes and yes. *The reasons for imposing these obligations have nothing to do with the technology used to provide the service and everything to do with the characteristics of the offering* – and offering which fits squarely within Congress' definition of “telecommunications services.” Vonage is positioned exactly like other resellers – other than the service quality of their offering has the reputation of being not quite as high as resellers that use the PSTN or managed VoIP services.

Indeed, both Verizon and AT&T assure their customers that their VoIP services are not Internet services.⁴⁵ As Comptel noted in a recent pleading:

[I]n their advocacy, AT&T and Verizon . . . repeatedly confuse the IP Interconnection at issue here with Internet peering and transit arrangements that are irrelevant in the managed VoIP environment that exists today. Perhaps one day AT&T and Verizon will forgo its managed voice services (including its existing VoIP products such as UVerse and FiOS which they clearly market to consumers as not being provided over the Internet) and offer only OTT [over the top] voice products to which all its customers - even enterprise customers - will subscribe and for which the Internet peering and transport arrangements might suffice. But that day is not today and not likely anytime in the near future due to the security and quality of service expected by most consumers for voice.⁴⁶

But even that traffic is routed through a managed point of interconnection if the call is to a subscriber of managed VoIP services to ensure the quality of service and security provided to the subscriber of the managed service. Currently, the value of access to emergency services has encouraged similar but not identical requirements for TDM, wireless and IP voice services to offer 911/E911 access. The technology used to deliver the voice service should not alter the value we place on the service. If a best-effort voice service is obligated to provide 911/E911 access then its interconnection should not be any different. Every exception made for a specific technology further distorts the market and therefore a technology neutral approach is best.

6. Much of the Committee’s focus in the #CommActUpdate process has been on technology-neutral solutions. Is a technology-neutral solution to interconnection appropriate and effective to ensure the delivery and exchange of traffic?

A technology neutral solution is the only logical path. To the extent possible, the market should determine winners and losers not federal (or State)

⁴⁵ See, e.g., *FiOS Digital Voice: Here's How It Works - Verizon's Private, Managed IP Network Links Customers' Homes to Softswitch and Applications Server, Enabling Innovative Services*, News Release (June 3, 2010), online at: <http://newscenter.verizon.com/press-releases/verizon/2010/fios-digital-voice-heres.html> [“To understand the features and quality of FiOS Digital Voice, you first need to know that the service is not the same as the services you get with a little Internet adapter for your modem and phone, and it does not ever touch the public Internet.”] (emphasis added).

⁴⁶ See July 8, 2013 *Comments of Comptel*, filed in the FCC’s GN Docket No. 13-5, at 4, available online at: <http://apps.fcc.gov/ecfs/document/view?id=7520928883>.

policy-makers. Technology specific interconnection rules will further segment the industry creating more regulatory silos that will increase chances for regulatory arbitrage and undermine competition. Note that technology neutrality does not suggest that policy-makers should blind themselves to other non-technology based characteristics of a sector that have a clear impact on competition, e.g., particular carriers have market power or own bottleneck network facilities. The FCC is also examining the existing regulatory and pricing regime for special access services that are extensively utilized for the operation of cellular towers of wireless carriers (e.g., fiber optic links between cellular towers, mobile traffic switches, and the broader terrestrial network).

7. *Wireless and Internet providers have long voluntarily interconnected without regulatory intervention. Is this regime adequate to ensure consumer benefit in an all-IP world?*

Again, at least one premise for this question is inaccurate. The interconnection provisions of Section 251-2 do apply to wireless providers.⁴⁷

Indeed, the earlier cited IP-to-IP arbitration case currently on appeal in federal district court in Michigan involves the third largest wireless service provider and AT&T⁴⁸ - a relevant and current example of the continued utility of the 251 process in the wireless space.

Even in the wireless-to-wireless interconnection space, recent events, albeit not in the context of a 251-2 mediated arbitration, suggest that a regulatory backstop for arm's-length negotiation might be appropriate. The FCC has already found, based on record evidence, that many wireless carriers were having difficulty obtaining reasonable data roaming agreements.

T-Mobile's May 2014 petition,⁴⁹ at 1, asks the FCC to issue prospective guidance and predictable enforcement criteria for determining whether the terms of

⁴⁷ Declaratory Ruling and Report and Order, *Developing a Unified Inter-carrier Compensation Regime, T-Mobile et al. Petition for Declaratory Ruling Regarding Incumbent LEC Wireless Termination Tariffs*, CC Docket No. 01-92, FCC 05-42 (2005) ("T-Mobile Decision").

⁴⁸ Michigan Public Service Commission, *In the matter of the petition of SPRINT SPECTRUM L.P. for arbitration pursuant to Section 252(b) of the Telecommunications Act of 1996 to establish interconnection agreements with MICHIGAN BELL TELEPHONE COMPANY, d/b/a AT&T MICHIGAN*, Case Nos. U-17349, U-17569. Issued April 15, 2014. http://www.dleg.state.mi.us/mpsc/orders/comm/2014/u-17569_4-15-2014.pdf.

⁴⁹ *Petition for Expedited Declaratory Ruling of T-Mobile USA, Inc.* filed May 27, 2014, WT No. 05-265, at: <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCYQFjAB&url=http%3A%2F%2Fapps.fcc.gov%2Fecfs%2Fdocument%2Fview%3Fid%3D7521151798&ei=L0ngU9y7KMyyyAS524DoDQ&usg=AFQjCNGfIVod8rmfE0Sn200jFYshaHSx8g&bvm=bv.72197243,d.aWw&cad=rja>.

a data roaming agreement meet the “commercially reasonable” standard adopted by the FCC in the *Roaming Order*⁵⁰ specifically arguing that wireless carriers need such guidance “to reach agreements.” Sprint commented on the T-Mobile request, arguing that

if an agreement was signed at a time when a marked disparity in bargaining power existed between the parties or prior to the Commission’s adoption of the automatic data roaming requirement, the agreement terms may have been commercially unreasonable from the start.⁵¹

This petition and comments from the third (Sprint) and fourth (T-Mobile) largest wireless providers in the United States – as well as the FCC’s record-based decision in the *Roaming Order*, suggest even in the wireless-to-wireless space, a need for some regulatory oversight/backstop authority remains.

NARUC has not taken a specific position on so-called Internet Peering⁵² or Transit⁵³ interconnection agreements. To the extent that voluntary negotiations have been successful, the regulatory backstop aspect of the 1996 Act remains unimplicated.

However, even a cursory search of the literature locates examples of traffic disruptions related to “peering agreements” that affect end-users. Certainly any policy maker might want to consider the possible outcomes if “voluntary” disruptions are permissible – particularly if those “voluntary” disruptions might affect emergency communications.

After all, such disruptions will be less tolerable in the extremely unlikely event that any type of “over the top” IP voice service is able to supplant a

⁵⁰ 47 C.F.R. § 20.12(e); Second Report and Order, *In the Matter of Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, Second Report and Order, 26 FCC Rcd.5411, ¶¶ 40-41 (2011) (“*Roaming Order*”), *aff’d sub nom. Cellco Partnership v.FCC*, 700 F.3d 534 (D.C. Cir. 2012).

⁵¹ Comments of Sprint Corporation *In the Matter of Petition for Expedited Declaratory Ruling of T-Mobile USA, Inc.* filed May 27, 2014 in WT Docket No. 05-265, p. 5, available at: <http://apps.fcc.gov/ecfs/document/view?id=7521374859>.

⁵² “Internet Peering is typically settlement-free, meaning that neither party pays the other for access to each other’s customers, reflective of the underlying notion that peering is a relationship of approximately equal value to each party. Since both parties benefit about the same from the relationship, there is no need to bother with the overhead of measurement and settlement.” DrPeering International, online at: <http://drpeering.net/core/ch4-Internet-Peering.html> (last accessed August 11, 2014),

⁵³ “Backbone providers of unequal market share usually create agreements called transit agreements, and usually contain some type of monetary agreement.” Wikipedia, available online at: http://en.wikipedia.org/wiki/Internet_backbone (last accessed August 8, 2014).

significant percentage of IP-voice customers currently subscribed to “managed” VoIP services. Currently the overwhelming majority of IP voice customers are subscribed to such managed VoIP products provided by carriers like Verizon and AT&T.

See, for example, an *Infoworld* article from 2005, noting:

A financial dispute between two major Internet backbones has led to dropped traffic between their networks, a high-stakes game of chicken ***that's angering customers affected by the network disruptions.*** Early Wednesday morning Level 3 Communications Inc. terminated its "peering" agreement with Cogent Communications Inc., a step Level 3 says it took ***after months of fruitless negotiations.*** Peering is a service agreement common among ISPs (Internet service providers), which directly connect their networks and exchange traffic without charge. On Internet traffic monitor Keynote Systems Inc.'s "Internet Health Report" chart of traffic speeds between Tier One backbones, the link between Level 3 and Cogent has been colored bright red for the past day, ***showing no packets exchanged between the two ISPs.***⁵⁴

Fortunately, as legislators considering interconnection policy, you are undoubtedly well aware already about how well outages of the Internet and sports networks are received by your constituents.

So with that knowledge firmly in mind, imagine this improbable situation: the majority of your constituents actually do migrate from the current managed-VoIP services (provided by AT&T, Verizon, and cable companies) to “best efforts” services provided “over the top” of the Internet.

Now there is another financial dispute between two major Internet backbones. That dispute leads to another “high-stakes game of chicken.”

⁵⁴ Cowley, Stacy, *Infoworld*, ISP spat blacks out Net Connections – Level 3, Cogent have financial dispute, available online at: <http://www.infoworld.com/t/networking/isp-spat-blacks-out-net-connections-492>. Cf. Ricknas, Mikael, IDG News Service, PC WORLD: *Sprint-Cogent Dispute Puts Small Rip in Fabric of Internet* (Oct 31, 2008) http://www.pcworld.com/article/153123/sprint_cogent_dispute.html (“In the short term, Sprint and Cogent costumers are stuck in middle, but in the end Lindqvist thinks they will be forced to work out their differences. "It's usually a question of who chickens out first," he said.”)

The difference this time is your constituents are relying on the public Internet as the main vehicle for originating the majority of their voice communications – including 911/E911 calls.

In such circumstances, is even the possibility of a “game of chicken” acceptable? Now, consider, what happens if during this “game of chicken”, a tornado, or flood, or hurricane, or earthquake, or other natural disaster strikes.

Fortunately, at this point, it seems unlikely that any of the most vital IP-based voice communications will ever be run over a best efforts network.⁵⁵ Certainly it seems unlikely that hospitals, emergency and police services, and many businesses will change to use “best efforts” OTT VoIP voice service. A further examination of the somewhat idealistic picture of peering arrangements proffered by some advocates seems prudent.

8. *Is contract law sufficient to manage interconnection agreements between networks? Is there a less onerous regulatory backstop or regime that could achieve the goals of section 251?*

No. Contract law does not insure an agreement will be reached. NARUC, based on extensive experience with interconnections in all sectors, both before and after 1996, has specifically endorsed the process Congress specified in Sections 251 and 252. As noted in the response to question 1, the current relative impasse on IP-to-IP interconnection agreements makes it pretty clear that, when voluntary negotiations fail, the regulatory backstop provisions are still needed.

⁵⁵ See discussion in footnote 28, *supra*.