Hello, Congress? The Phone's For You: Facilitating the IP Transition While Moving Toward a Layers-Based Regulatory Model

John Gasparini*

TABLE OF CONTENTS

* J.D. Candidate, The George Washington University Law School, May 2015; B.S. in Business Administration, The University of South Carolina Beaufort, December 2011. The author would like to thank Jodie Griffin and the staff of the Federal Communications Law Journal for their support and guidance throughout this process. He would also like to thank his parents, friends, and family for their love and support, without which he would not have half this much to show for all of his adventures.

I. INTRODUCTION

We tend to take technology for granted these days. We expect the power to be on by default, we expect water to come out of the faucet when we want it, and we expect to hear a dial tone when we pick up a phone. Little thought is given to the intricate systems that support these services, and that's not unreasonable—one of the chief benefits of such services is that we can focus our energies on other things, instead of having to provide water, heat, or communications services for ourselves. At times, however, these systems do require attention. Now is one of those times, as the technology which underlies our wireline communications system must be replaced. This process is referred to as the IP Transition, and it is already well underway.[1]

Technology transitions have happened before, and bring with them many benefits.[2] As noted by FCC Chairman Tom Wheeler, "[H]istory has shown that new networks catalyze innovation, investment, ideas, and ingenuity."[3] This transition will bring many such benefits— these new networks will provide increased functionality and capacity, for both wired and wireless users.[4] This transition will not be simple, however—the wired phone system has not seen change of this magnitude in decades, and the regulatory framework which governs these systems are in some cases nearly 80 years old. While many of these regulations continue to serve necessary functions, they were created in a world in which network and service were inseparable. Today's technology works differently, and it is a constant struggle for regulators and service providers to adapt these new networks to the existing regulatory models. Packet-based networks, which support Voice over Internet Protocol (VoIP) services, also support services of other types, and are not regulated in the same manner as circuit-switched systems.

In accordance with deregulatory policies intended to permit the free growth and development of new technologies and services, the FCC has largely refrained from substantially regulating VoIP providers, and has to an extent preempted state regulators from managing these services, as well. Separately, a majority of states have partially or completely prevented their Public Utility Commissions (PUCs) from regulating these services.[5] On their

1. *See* Tom Wheeler, *The IP Transition: Starting Now*, FCC BLOG (Nov. 19, 2013, 12:05 PM), http://www.fcc.gov/blog/ip-transition-starting-now.

2. *See id.*

3. *Id.*

4. *See* DAVID GABEL & STEVEN BURNS, NAT'L REGULATORY RESEARCH INST., THE TRANSITION FROM THE LEGACY PUBLIC SWITCHED TELEPHONE NETWORK TO MODERN TECHNOLOGIES 1 (2012), *available at* https://prodnet.www.neca.org/publicationsdocs/wwpdf/111212nrri.pdf.

5. *See* SHERRY LICHTENBURG, NAT'L REGULATORY RESEARCH INST., TELECOMMUNICATIONS DEREGULATION: UPDATING THE SCORECARD FOR 2013 iv (2013), *available at* http://www.nrri.org/documents/317330/0e3a5988-6f57-492d-8ce5-70926cfe68f4.

own, these deregulatory actions pose no major issues for the phone system as a whole, as the system remains built around legacy, circuit-switched infrastructure. They act as intended, giving new technologies and new businesses the freedom they need to innovate and evolve, to provide new services to consumers, and to increase competition in the marketplace. One of the major challenges presented by the IP transition will be reconciling new technology and service models (specifically, an environment in which services are divorced from the network that carries them, rather than intertwined, as has traditionally been the case) with the rigid, legacy-network-based regulatory framework currently in effect.[6] In particular, the transition presents a strong challenge to the joint jurisdiction over voice communications shared by state and federal regulators. The FCC has acted to keep its hands off VoIP in most ways,[7] while a majority of states have similarly prohibited their PUCs from regulating VoIP.[8]

Unlike past transitions, the IP transition reflects a fundamental shift in the means by which the bulk of our telecommunications services are delivered. We are moving away from packet-switched systems whose attributes shaped the Communications Act of 1934, and which continue to define the regulatory framework applied to these services. New networks treat all traffic equally, regardless of whether it is voice, data, or video traffic. Services can be defined independently from the networks consumers use to reach those services. As technology continues to evolve, criticism of the latest major update, the 1996 Telecommunications Act, continues to mount, and the time has arrived to move forward with a revision of the regulatory framework that governs telecommunications generally. The FCC, the telecommunications sector, and even Congress have come to recognize the need for reform.[9]

The IP transition will not wait, however. Technology moves faster than policy, and the transition is already well underway. The FCC has the opportunity to act with an eye toward a new regulatory model which eliminates the vertical silos which dominate the current law, and which identifies for Congress, as it has in the past, the FCC's preferred regulatory direction. Given the need for action to address the grossly outdated framework, which is being distorted to fit new technologies, the FCC should use its preemptive powers to move toward a horizontal regulatory model. Action of this type can, as it has in the past, serve as guidance for Congress

6. Frank Simone, *A Turning Point*, AT&T PUBLIC POLICY BLOG (Dec. 19, 2012, 2:17 PM), http://www.attpublicpolicy.com/broadband-policy/a-turning-point/.

7. Vonage Holdings Corp. Petition for Declaratory Ruling Concerning an Order of the Minn. Pub. Utils. Comm'n, *Memorandum Opinion and Order*, FCC 04-267, 19 FCC Rcd. 22404, para. 1 (2004) [hereinafter *Vonage Order*], *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-267A1.pdf.

8. *See* LICHTENBURG, *supra* note 5, at iv.

9. Marguerite Reardon, *Congressional Leaders Call for Communications Act Makeover*, CNET (Dec. 3, 2013, 4:00 PM), http://www.cnet.com/news/congressional-leaders-call-for-communications-act-makeover/.

to craft, in the near future, a complete overhaul of the Telecommunications Act.

In order to explain why such sweeping action is necessary, this note first examines the history of telecommunication regulation, including the technology behind the PSTN and the federalism analysis that led in part to the framework that remains in place today. It also examines the transition already underway, and identifies the need for regulatory revision that modern technology has created. It then addresses the means by which changing network technology, coupled with existing regulatory actions, will effectively deprive the states of their long-held ability to regulate voice service. After identifying the need for a regulatory overhaul due to outdated applications of federalism analysis, technological shifts, and changing state interests, the note turns to a study of preferable, horizontal regulatory models and the reasons the FCC cannot simply shift to such a model on its own. Finally, the note examines the FCC's history of telegraphing its wishes to Congress through strong regulatory action, and Congress' history of responding positively to such FCC action. The FCC should move to preempt state regulation of the services aspects of telecommunications, while removing some connectivity-related common carrier obligations, to develop a model that is as "horizontal" as possible under current law and provides a starting point for Congressional action.

II. BACKGROUND

A. Circuits to Packets: The IP Transition's Technology Change, and the Reasons It Is Needed

When a person picks up a phone, their conversation takes place over the public switched telephone network, or PSTN.[10] On the whole, the PSTN today bears little resemblance to the phone networks originally built following the 1876 invention of the telephone. Today's PSTN provides not only voice service, but also data and video services, through physical wires and over the air.[11] When a user places a call, that signal is passed first to a local switch, then to a regional switch, and then to a different regional switch, down to a local switch, and then to its recipient.[12] The network is arranged

10. The term PSTN is used here to refer to the circuit-switched voice elements of the nation's telecommunications infrastructure. While the PSTN as a whole integrates packet-switched technologies in some areas, its fundamental design is based on circuit-switching. The removal of circuit-switching is the core objective of the IP transition.

11. JOSEPH GILLAN & DAVID MALFARA, NAT'L REGULATORY RESEARCH INST., THE TRANSITION TO AN ALL-IP NETWORK: A PRIMER ON THE ARCHITECTURAL COMPONENTS OF IP INTERCONNECTION 1 (2012), *available at* https://www.dora.state.co.us/pls/efi/efi.show_document?p_dms_document_id=177500&p_session_id=.

12. *Id.*

in tiers—a call only goes as high as it needs to.[13] A call to a neighbor, for example, will only move to the local switch before being routed to its destination, while a long-distance call will be routed through several switches, across a trunk connection, and then back down through several more switches to its destination.[14]

The need for this direct-path routing model arises because wireline phone calls are "circuit-switched"—that is, a direct physical circuit between endpoints must be established for a call to go through.[15] This circuit-switched nature, paired with the reliance on time-division multiplexing technology, combine to characterize the fundamental architecture of the PSTN. It is this architecture that the IP transition will change. The current system has its advantages, to be sure. Circuit-switched networks are centrally powered and thus largely resilient in the face of power outages, and the past century's worth of infrastructure expansion ensures that circuit switching (which primarily runs on copper loops) enjoys market penetration that cable and fiber cannot yet match.[16] Furthermore, consumers enjoy a certain degree of familiarity with the aging elements of the PSTN.

Circuit switching is not without its downsides, however. While circuit-switched networks can provide video and data services, they are primarily designed around voice services, and the provision of these services is heavily bound up in the design of the network.[17] Furthermore, the number of available circuits limits providers' ability to efficiently route traffic, manage their networks, or accommodate ever-increasing demands for video and data connectivity.[18] Packet-switched networks address this last issue particularly well, as they treat all data equally, breaking it down into packets, which can be sent over one or more routes simultaneously, only to be reassembled at the endpoint.[19] Packet switching eliminates the need for direct, persistent circuits, and allows networks to dynamically adjust service quality to meet demand.[20] Furthermore, packet-switched networks separate the physical network layer from the data being carried over the network—in other words, voice, because it is simply another service riding over a common network.[21] While copper loops can accommodate packet-switching services, the

13. HENK BRANDS & EVAN T. LEO, THE LAW AND REGULATION OF TELECOMMUNICATIONS CARRIERS 35 (1998).

14. *Id.*

15. JONATHAN E. NUECHTERLEIN & PHILIP J. WEISER, DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE 40-42 (2007).

16. *Id.* at 43.

17. *Id.*

18. *See* GILLAN & MALFARA, *supra* note 11, at 1.

19. *Id.* at iii.

20. NUECHTERLEIN & WEISER, *supra* note 15, at 42-44.

21. *Id.* at 38-39.

capacity of copper is significantly lower than that of cable or fiber, reducing the capabilities of copper-based IP networks.[22]

The improvements and broader services permitted by packet-switched networks are only one factor necessitating the transition. Another significant factor is the declining utilization of the circuit-switched elements of the PSTN by American consumers. As indicated by the FCC Local Competition Report, the number of wired, circuit-switched phone lines in the US is declining rapidly due to the growth of IP telephony and the widespread adoption of mobile phones.[23] According to data published by the Centers for Disease Control in 2012, 34% of American adults did not have a landline telephone.[24] Furthermore, stiff competition from VoIP providers (due in part to the lower costs of packet-based services, as well as differing regulatory and tax obligations) is reducing Incumbent Local Exchange Carrier (ILEC)[25] revenue even as the ILECs' costs in maintaining the copper networks rise.[26] Consumers and businesses are responding to the shift in technology, but regulatory structures have been slow to follow suit.

While ILECs have seen their revenues decrease, their costs have remained fixed, or even risen.[27] Equipment manufacturers have reduced or ceased their production of necessary components of the wireline PSTN, increasing the costs of facilities maintenance.[28] The labor pool has aged, with younger entrants to the field often focusing on newer technologies which show great potential for growth, rather than specializing in technologies which are near their peak, or have already entered decline. However, the regulatory obligations imposed on the ILECs as telecommunications providers remain in full force. ILECs are obligated to maintain their networks to facilitate public safety,[29] and to continue building the network to reach new customers in their communities, despite the rapidly decreasing

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22. *Id.*

23. INDUS. ANALYSIS & TECH. DIV., FCC, LOCAL TELEPHONE COMPETITION: STATUS AS OF DECEMBER 31, 2012 (2013) [FCC LOCAL TELEPHONE COMPETITION], *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-324413A1.pdf.

24. STEPHEN J. BLUMBERG & JULIAN V. LUKE, DIV. OF HEALTH STATISTICS, CTRS. FOR DISEASE CONTROL & PREVENTION, WIRELESS SUBSTITUTION: EARLY RELEASE OF ESTIMATES FROM THE NATIONAL HEALTH INTERVIEW SURVEY, JANUARY-JUNE 2012 at 1 (2012) [hereinafter CDC REPORT], *available at* http://gigaom2.files.wordpress.com/2012/12/wireless201212.pdf.

25. ILECs were first defined in the 1996 Act as those companies providing telephone service prior to the 1996 Act. ILECs are the now-consolidated companies which were created in the dissolution of AT&T into the Regional Bell Operating Companies. ILECs are the primary owners of the physical networks which make up the PSTN. 47 U.S.C. § 251(h) (2006).

26. GABEL & BURNS, *supra* note 4, at 3-6.

27. *Id.*

28. Ana Pesovic & Luis Alberto Martin Santiago, *The Time is Right for PSTN Migration*, ALCATEL-LUCENT TECHZINE (Oct. 8, 2013), http://www2.alcatel-lucent.com/techzine/the-time-is-right-for-pstn-migration/.

29. GABEL & BURNS, *supra* note 4, at 3-6.

potential for the companies to be able to recoup the costs of their investments.[30] Faced with increasing costs and stiff competition, the ILECs are pushing hard for the IP transition to move forward.[31] ILECs see Title II regulatory burdens as a barrier to the deployment of new technologies to take the place of the circuit-switched setups. They believe that Title II obligates them to maintain the circuit-switched PSTN until the FCC and other governmental authorities permit them to retire it, regardless of its utilization in the marketplace.[32] The IP transition will give ILECs the ability to replace that aging and expensive infrastructure, and, they hope, escape some of their obligations under Title II as a result.[33]

B. Telecommunications Regulation: A Brief History

As the telephone gained a significant place in American society throughout the first two decades of the 1900s, networks tended to develop on a state-by-state basis, and were largely governed by state law.[34] This was because the primary function of phone networks was to serve local calling needs; the overwhelming majority of traffic was therefore intrastate in nature and outside the scope of the federal government's authority under the Commerce Clause.[35] The language of the Commerce Clause echoed Alexander Hamilton's writing in Federalist No. 22, in which he wrote that "there is no object . . . that more strongly demands a Federal superintendence" than the conduct of interstate commerce.[36] The need to regulate commerce between the states, and reconcile the need for national cohesion while maintaining state sovereignty was "at once the principal concern that animated creation of the federal Union and the power that the states most unequivocally surrendered."[37]

The United States is fairly unique in its approach to regulating telecommunications services. While most countries regulate from a central authority, with states and provinces having little to no role,[38] the 1934 Act

30. *See id.*

31. *See* Petition of AT&T at 10-11, AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition, FCC WC Docket No. 12-353 (rel. Nov. 7, 2012) [hereinafter AT&T Petition], *available at* http://apps.fcc.gov/ecfs/document/view?id=7022086087.

32. *Id.*

33. *Id.* at 2-3.

34. Charles J. Cooper & Brian Stuart Koukoutchos, *Federalism and the Telephone: The Case for Preemptive Federal Deregulation in the New World of Intermodal Competition*, 6 J. TELECOMM. & HIGH TECH. L. 293, 315 (2008).

35. "The Congress shall have Power . . . To regulate Commerce . . . among the several States . . . ." U.S. CONST. art. I, § 8, cl. 3.

36. THE FEDERALIST NO. 22, at 135-36 (Alexander Hamilton).

37. Cooper & Koukoutchos, *supra* note 34, at 303.

38. In Canada, for example, the provinces have little to no role in the regulation of telecommunications, while the national government's regulatory body enjoys a far broader

lays out a very clear joint jurisdictional model.[39] This model was put in place due in large part to the design of the copper network itself, and the source of the federal government's power to regulate. Federal authority to regulate telecommunications stems from the Commerce Clause,[40] as communications routinely cross state lines and have a substantial impact on interstate commerce.[41]

The Communications Act of 1934 was implemented in part to counteract Interstate Commerce Commission decisions that had largely excluded the state governments from regulating telecommunications, based on the Supreme Court's holding in the *Shreveport Rate* case.[42] In that case, the Supreme Court expanded the scope of the Commerce Clause to permit federal regulation of wholly intrastate commerce under certain circumstances.[43] The Court reasoned that intrastate matters that demonstrated a "close and substantial relation to interstate traffic" must be subject to Congressional authority for the greater good, in order to avoid the intrastate nature of one aspect of an issue frustrating any federal attempt to regulate it.[44] Following the guidance of this decision, the ICC granted broad power to the federal government to regulate telephone systems, much to the chagrin of the states. The states argued, however, that not all traffic was interstate—only long distance traffic—and therefore that federal authorities could only regulate long-distance traffic.[45] This view won out, owing to the structure of the networks, which were essentially self-contained within each state, and only crossed state lines (in most cases) for purposes of long-distance traffic.[46]

When Congress drafted the Communications Act of 1934, telephone traffic was nearly ninety-eight percent intrastate in nature.[47] In outlining the federal government's role in the regulation of telecommunications (at that time largely focusing on spectrum concerns rather than wireline voice service), Congress established the FCC with a broad mandate to regulate interstate traffic.[48] Congress went further, making sure that it "nullified Shreveport and explicitly denied the FCC 'any jurisdiction with respect to .

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mandate than the FCC's. *See* IAN WALDEN, TELECOMMUNICATIONS LAW AND REGULATION 226 (3d ed. 2009).

39. *See* BRANDS & LEO, *supra* note 13, at 39-40. *See also* 47 U.S.C. § 152(a) (2006).

40. U.S. CONST. art. I, § 8, cl. 3.

41. Daniel A. Lyons, *Technology Convergence and Federalism: Who Should Decide the Future of Telecommunications Regulation?*, 43 U. MICH. J.L. REFORM 383, 388-90 (2010).

42. *See* BRANDS & LEO, *supra* note 13, at 39-40.

43. Houston E. & W. T. Ry. Co. v. United States (*Shreveport Rate*), 234 U.S. 342 (1914).

44. *Id.*

45. WALDEN, *supra* note 38, at 222.

46. Lyons, *supra* note 41, at 394-95.

47. *Id.* at 316.

48. 47 U.S.C. § 152(b) (2006).

. . intrastate communication service.'"[49] While this model adhered to the Supreme Court's view of the Commerce Clause at the time, and mirrored accurately the marketplace's structure, it also established the basis for the dual-jurisdiction model, which in many ways plagues today's telecommunications industry.[50] The states' 80-year-old position persists to this day, in the form of the joint regulatory model, which gives states the power to regulate telecommunications services within their state, alongside the FCC.[51]

Following the breakup of AT&T in 1984, the telecommunications industry's next major change came in 1989, when the New York Public Service Commission for the first time permitted competition in local exchange markets.[52] This marked a substantial departure from the natural monopoly model and echoed the policies that drove divestiture in attempting to promote competition in the industry.[53] This was a trend that grew rapidly; between 1989 and the implementation of the 1996 Act, "at least 29 states, including New York, approved measures to end telephone monopolies."[54] These state laws served substantially as the basis for the Title II CLEC policies.[55] They provided the inspiration for the idea of unbundling network elements, which represented one of the most substantial reforms present in the 1996 Act.[56]

The 1996 Act's competition provisions represented the first significant step toward what could now be described as a "layers model" for network design and regulation, in that it envisioned competition occurring at multiple points within the telecommunications industry.[57] In particular, Congress sought to introduce competition in "building facility-based networks, contracting for the use of unbundled network elements ("UNEs") from the ILECs, and providing resale."[58] Facilities-based network construction is hampered by immense capital costs and, today, decreasing potential for investment recovery, and thus has struggled to find footing to directly create

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49. Cooper & Koukoutchos, *supra* note 34, at 316.
50. *Id.* at 317.
51. *Id.*
52. Thomas W. Bonnett, *Is ISP-Bound Traffic Local or Interstate?*, 53 FED. COMM. L.J. 239, 244-45 (2001).
53. *Id.* at 246.
54. Jonathan Rabinovitz, *Competition to Begin for Local Phone Calls, Ending a Monopoly*, N.Y. TIMES, Jan. 6, 1996, http://www.nytimes.com/1996/01/06/nyregion/competition-to-begin-for-local-phone-calls-ending-a-monopoly.html?pagewanted=1.
55. Bonnett, *supra* note 52, at 246.
56. *Id.*
57. Rob Frieden, *Adjusting the Horizontal and Vertical in Telecommunications Regulation: A Comparison of the Traditional and a New Layered Approach*, 55 FED. COMM. L.J. 207, 233 (2003).
58. Bonnett, *supra* note 52, at 246.

competition with legacy technologies.[59] Policies impacting construction have been successful in new technology areas, however; build out of residential fiber and wireless networks have exploded over the past fifteen years.[60]

The second area of competition, the use of UNEs, has been more successful.[61] In conjunction with obligations to resell UNEs to competitive carriers, sections 251 and 252 of the 1996 Act require ILECs to negotiate interconnection agreements with competitive carriers on reasonable terms, and include provisions to minimize facilities-based barriers to entry for potential competitors.[62] This has spurred growth in two areas: interexchange carriers who solely provide backhaul service have found a place in the market, and CLECs have to a limited extent been able to grow and compete.[63] The third type of competition, reselling, has found substantial success, particularly in the area of long distance. Following the introduction of the 1996 Act, hundreds of competitive long distance providers have been able to purchase and resell blocks of long distance service, producing substantial competition in the marketplace.[64] All in all, however, the competition-based provisions of the 1996 Act that apply to ILECs have had mixed success. While some goals have been achieved—CLECs do exist and are competitive in providing resale services, for example—the incredible costs associated with constructing facilities-based networks and providing connectivity to end users has significantly limited the success of Congressional attempts to promote the construction of new facilities-based systems.[65]

The 1996 Act also gave broad preemptive power to the FCC, allowing it to preempt any state regulation that was deemed detrimental to a legitimate federal purpose, or to competition in the marketplace.[66] This power is limited somewhat to preserve the states' legitimate interests in public safety, universal service, and consumer protection.[67] This power can be extended further through the exercise of ancillary jurisdiction, which permits the FCC to regulate conduct outside the express language of the Act when the subject is within the Act's scope, and the regulation in question is ancillary to the FCC's ability to address its statutory responsibilities.[68]

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59. *Id.*
60. *Id.* at 219 n.35.
61. *Id.*
62. 47 U.S.C. §§ 251-252 (2006).
63. *See* Bonnett, *supra* note 52, at 246.
64. *Id.*
65. *Id.* at 247-48.
66. 47 U.S.C. § 253(a) (2006).
67. 47 U.S.C. § 253(b) (2006).
68. Am. Library Ass'n v. FCC, 460 F.3d 689, 691-92 (D.C. Cir. 2005).

C. *Growing Pains: The Joint Jurisdictional Model Conflicts with Modern Network Designs, Leading To Absurdity*

One of the iconic images of earlier periods of telephone service is the image of the local operator, connecting calls and providing directory assistance. At first these operators were located in each community, and knew their customers by name, serving the overwhelmingly local use of the system.[69] Today, when we dial for an operator, or call 411, however, we are effectively routed to a single call center, regardless of our location, while powerful computers trace the call, identify our location, and then provide us with the phone number of the pizza place across town.[70] This call remains classified as intrastate for regulatory purposes, despite decades of innovation and technological development that have made it more efficient to maintain no more than a handful of call centers nationwide.[71]

Over time, the legal description and classification of new technologies has been distorted and manipulated to fit this dual-jurisdiction system. A great deal of traffic classified as intrastate for regulatory purposes is in fact inherently interstate.[72] To carry out the breakup of the Bell system, for example, 196 Local Access and Transport Areas were created and grouped together to form to service areas for each of the Regional Bell Operating Companies (RBOCs), which became what we now classify as Incumbent Local Exchange Carriers, or ILECs.[73] These Local Access and Transport areas do not follow state lines, though—they instead "were primarily drawn along the lines of the Standard Metropolitan Statistical Areas delineated by the Census Bureau . . . in economic terms."[74] This means that a single metropolitan area, such as that around New York or Washington, D.C., is contained within a single Local Access and Transport Area, regardless of state lines.[75] Calls in Washington, D.C., therefore routinely cross into Virginia and Maryland, but remain classified as intrastate calls and subject to the discrete regulation of each of those states.[76] In other words, a single local call can quite easily find itself subject to two or three regulatory regimes, including additional taxes and fees, yet remain "intrastate" under the law, and thus remain outside federal jurisdiction.[77] This classification is crucial in determining whether state or federal authorities retain the power to regulate an activity; because although the FCC has broad preemptive powers

69. *See* Bonnett, *supra* note 52, at 320-21.
70. *Id.*
71. *Id.*
72. Cooper & Koukoutchos, *supra* note 34, at 317.
73. *Id.*
74. *Id.*
75. *Id.* at 318.
76. *Id.*
77. *Id.*

under the 1996 Act, the original construction preserving state regulatory authority for intrastate traffic remains intact.

The geographic locations of modern network switches provide additional examples of the absurdity presented by applying the 1934 Act's principles to modern networks. Switches don't need to be in every town anymore; they can be more centralized as technology has advanced.[78] Verizon's switch that serves all local calls in New York City, for instance, is located in Connecticut.[79] Every single local call made in the most populous city in the country, the city that never sleeps, is inherently interstate, yet remains classified intrastate for regulatory purposes due to the dual jurisdiction established by the 1934 Act.[80] As enhanced services such as voicemail, call waiting, and call forwarding have been delivered to consumers, the regulatory model has remained unchanged.[81] This goes against the very nature of these technologies, as they permit the consolidation of facilities able to serve multiple states, making all traffic inherently interstate rather than intrastate.

D. State Regulatory Issues and Remaining Interests

While there are some striking issues raised by the IP transition at a federal regulatory level, the transition presents a very different threat to state regulation: its complete preemption. The *Vonage* order preempted state regulation of VoIP, though the actual scope of that preemption remains a subject of intense debate.[82] The FCC has, however, imposed some Title II-esque obligations on VoIP providers (911 interconnection[83] and USF contributions[84] are most notable) while refraining from imposing other obligations, such as those arising under the truth-in-billing, cramming, and slamming rules.[85] The states, for their part, have been somewhat active in addressing VoIP as well, with a majority of states either wholly or partially

78. *See* BRANDS & LEO, *supra* note 13, at 34-35.
79. Cooper & Koukoutchos, *supra* note 34, at 318.
80. *Id.* at 319-20.
81. *Id.*
82. *See Vonage Order*, *supra* note 7, at para. 1.
83. E911 Requirements for IP-Enabled Serv. Providers, *First Report and Order and Notice of Proposed Rulemaking*, FCC 05-116, 20 FCC Rcd. 10245, para. 1, 26 (2005), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-116A1.pdf.
84. Universal Serv. Contribution Methodology, *Report and Order and Notice of Proposed Rulemaking*, FCC 06-94, 21 FCC Rcd. 7518, para. 1 (2006) [hereinafter *USF Contribution Order*], *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-94A1.pdf, *vacated in part sub nom.* Vonage Holding Corp. v. FCC, 489 F.3d 1232 (D.C. Cir. 2007).
85. *See generally* Empowering Consumers to Prevent and Detect Billing for Unauthorized Charges ("Cramming"), *Report and Order and Further Notice of Proposed Rulemaking*, FCC 12-42, 27 FCC Rcd. 4436 (2012), *available at* https://apps.fcc.gov/edocs_public/attachmatch/FCC-12-42A1_Rcd.pdf.

deregulating or preempting any regulation of VoIP, according to NRRI data from 2013.[86]

While state and federal actions have reduced or eliminated the ability of states to regulate IP telephony, the states do maintain a healthy interest in the regulation of telecommunications services generally. Emergency services and 911 systems are primarily funded, managed, and regulated at the local and state level, and states have a long history of involvement in consumer protection activities.[87] Additionally, the states are responsible for granting rights of way to facilitate the construction of new infrastructure.[88] More generally, the economic and societal benefits of access to modern communications technologies, particularly the Internet, play an increasing role in driving state interest in telecommunications regulation. Throughout the IP transition, and particularly as a new regulatory framework is developed, balancing economic efficiency against these important interests, some of which are best handled at the state level, will be crucial. The bulk of these interests are explicitly protected by the 1996 Act and are immune from FCC preemption.[89]

E. The IP Transition Thus Far

The transition is well underway, as Chairman Wheeler noted in his first blog post as Chairman in November 2013.[90] Cable providers have been using IP technology for voice, video, and data services for years—the rapid growth of bundled services that are made possible by IP networks is proof of this.[91] Furthermore, wireless providers make extensive use of IP technology, and nearly 30% of home phone lines are categorized as interconnected VoIP by the FCC.[92] In January 2014, the FCC gave AT&T permission to submit a proposal to conduct transition trials in two of its wire centers.[93] In February,

86. *See generally* LICHTENBERG, *supra* note 5.

87. James E. Holloway, Elaine Seeman, & Margaret O'Hara, *State, Agency and Local Next Generation (NG) 911 Planning and Coordination to Implement State NG911 and Internet Protocol (IP) Enabled Network Policies*, 11 J. TECH. L. & POL'Y 3, 3 (2010).

88. *See* City of Arlington v. FCC, 133 S. Ct. 1863, 1866 (2013) (quoting Rancho Palos Verdes v. Abrams, 544 U.S. 113, 115 (2005)) (discussing the 1996 Act's limitations on "the traditional authority of state and local governments to regulate the location, construction, and modification of such facilities.").

89. 47 U.S.C. § 256(b)-(c) (2006).

90. Wheeler, *supra* note 1.

91. NUECHTERLEIN & WEISER, *supra* note 15, at 16. While it is of course possible, and common, to bundle circuit-switched services alongside those delivered over packet-switched networks, bundling in this manner requires the provider to maintain multiple protocols for connection to the user. An all-IP system reduces the infrastructure and upkeep costs by providing all services through one connection.

92. *See* FCC LOCAL TELEPHONE COMPETITION, *supra* note 23.

93. AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition, *Order, Report and Order, and Further Notice of Proposed Rulemaking*, FCC 14-5, 29 FCC

AT&T filed its plan to conduct those trials, which involve converting all telephony in a designated area over to IP, and then studying the deployment, adoption, and effectiveness of the systems.[94] With the FCC's approval, the trials will take place in Alabama and Florida, and represent the biggest step yet toward widespread replacement of aging elements of the PSTN with packet-switched systems.[95] The FCC will accept proposals for a full year from the date of the January order, and one competing proposal has already been submitted by Iowa Network Services, Inc..[96]

F. Government and the IP Transition

Congress has picked up on the importance of the IP transition, starting with a Senate Subcommittee hearing on the subject in June of 2013,[97] followed by a House Subcommittee hearing in October 2013.[98] Both hearings sought to examine issues that may arise during the transition, and heard testimony from industry groups, ILECs, and public interest organizations.[99] More recently, the House Energy and Commerce Committee has started publishing white papers as it begins the process of building an overhaul of the 1996 Act.[100] In announcing the commencement of this process, Chairman Fred Upton stated that "[t]oday we are launching a multi-year effort to examine our nation's communications laws and update them for the Internet era."[101] The first of these whitepapers examines the history of communications regulation, and its current state.[102] It also solicits comments from stakeholders regarding whether a new act should be structured "around particular services," as is the case today, as well as

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Rcd. 1433, para. 1 (2014), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0131/FCC-14-5A1.pdf.

94. Proposal of AT&T for Wire Center Trials at 1-2, AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition, FCC GN Docket No. 12-353, 1-2 (rel. Feb. 27, 2014), *available at* http://apps.fcc.gov/ecfs/document/view?id=7521084110.

95. *Id.* at 13.

96. Comm'n Seeks Comment on Proposal of Iowa Network Servs., Inc. for Serv.-Based Tech. Transitions Experiment, *Public Notice*, DA 14-238, GN Docket No. 12-353 (2014), *available at* https://apps.fcc.gov/edocs_public/attachmatch/DA-14-238A1.pdf.

97. *State of Wireline Communications: Hearing Before the Subcomm. on Sci., Tech., & Innovation, of the Senate Comm. on Commerce, Sci., & Transp.*, 113th Cong. (2013), *available at* http://www.gpo.gov/fdsys/pkg/CHRG-113shrg87817/pdf/CHRG-113shrg87817.pdf.

98. *The Evolution of Wired Communications Networks: Hearing Before the Subcomm. on Commc'ns & Tech of the Comm. on Energy & Commerce*, 113th Cong. (2013).

99. *See generally id.; State of Wireline Communications*, *supra* note 97.

100. Press Release, Energy & Commerce Comm., Upton and Walden Announce Plans to Update the Communications Act (Dec. 3, 2013), *available at* http://energycommerce.house.gov/press-release/upton-and-walden-announce-plans-update-communications-act.

101. *Id.*

102. *Id.*

whether "the distinction between information and telecommunications services" remains relevant and useful.[103]

On the FCC's end, they had established a Technology Transitions Policy Task Force. Recently, however, it has been disbanded.[104] The FCC's primary engagement in the transition is taking place through the proceeding opened in response to AT&T's Petition.[105]

More recently, the Commission has continued reviewing AT&T's proposal for trials, and has opened new proceedings to examine issues concerning transparency, consumer protection, and 911 reliability.[106]

At the state level, less has been done to address the transition, though some state PUCs have participated in IP-related FCC proceedings.[107] Local governments are aware of the issue, and are beginning to communicate with industry and public interest groups as well.[108] States are particularly interested in the public safety implications of the transition, and Alabama has even gone so far as to begin rolling out IP services to all its PSAPs.[109] Further state action will be required, however, as most states have backed themselves into a corner on the IP issue. As previously discussed, widespread deregulation of IP services at the state level has drastically limited the potential scope of state regulatory action as compared to the scope of action available when regulating packet-switched services.

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103. COMM. ON ENERGY & COMMERCE, MODERNIZING THE COMMUNICATIONS ACT 3-4 (Jan. 8, 2014) [hereinafter MODERNIZING THE COMMUNICATIONS ACT], *available at* https://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/analysis/CommActUpdate/20140108WhitePaper.pdf.

104. Statement of Comm'r Ajit Pai on the Conclusion of the Tech. Transitions Policy Task Force (FCC Jan. 31, 2014), http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0131/DOC-325378A1.pdf.

105. *See generally* FCC Docket No. GN 12-353.

106. *See, e.g.*, Pub. Safety & Homeland Sec. Bureau Seeks Comment in the E911 Location Accuracy Proceeding, *Public Notice*, DA 14-1680, FCC PS Docket No. 07-114, 1 (2014) *available at* https://apps.fcc.gov/edocs_public/attachmatch/DA-14-1680A1.pdf.

107. *See, e.g.*, Comments of the Indiana Util. Regulatory Comm'n at 1, Petition to Launch a Proceeding Concerning the TDM-to-IP Transition, FCC GN Docket No. 12-353 (rel. Jan. 28, 2013), *available at* http://apps.fcc.gov/ecfs/document/view?id=7022113494.

108. *See, e.g.*, Comments of the Nat'l Ass'n of Telecomms. Officers & Advisors at 2, Petition to Launch a Proceeding Concerning the TDM-to-IP Transition, FCC GN Docket No. 12-353 (rel. Jan. 28, 2013), *available at* http://apps.fcc.gov/ecfs/document/view?id=7022113577.

109. William Jackson, *Alabama Begins Rolling Out IP Network for 911 Calling*, GCN (Nov. 14, 2013), http://www.gcn.com/articles/2013/11/14/Alabama-911-IP-network.aspx.

III. ANALYSIS

A. The Old Ways are Failing: Federalism and Packet-Switched Networks

The split between state and federal jurisdiction over telecommunications stands on unstable ground these days. While this division was originally built on a combination of constitutional law and practical considerations arising from network design, the advent of IP-enabled services has shown the limitations of this model.[110] IP networks function very differently from circuit-switched networks, which primarily run on copper wire. While traditionally the service and the network were essentially inseparable, that is no longer the case. Voice is but one of many services that a fiber network can provide—a high-priority service, to be sure, but still one of many. As the Internet grows and services shift into the cloud, this separation between network and service becomes even more significant. Whereas traditionally the provision of voice services required the service provider (and network provider) to locate equipment at all junction points in the network, this is no longer the case.[111] Skype, for example, can serve every broadband-connected location in the country with only a handful of data centers where they actually locate their equipment.[112] They do not own the network they use to provide service, and conversely, the network owner no longer necessarily provides the voice service consumers seek.[113]

This shift to technology that no longer requires highly localized infrastructure calls into question one of the key bases for state jurisdiction over telecommunications service. The 1934 Act, which established the FCC, explicitly forbade the newly created agency from regulating intrastate communications.[114] This was done to eliminate the Interstate Commerce Commission's application of the *Shreveport Rate* policies to phone providers.[115] This language "embodied the tension between the fundamental unifying impulse of the Commerce Clause and the legacy of state-by-state regulation with which we still contend today."[116] Over time, this rule became increasingly convoluted, however. The creation of the Regional Bell Operating Companies (RBOCs)[117] by necessity included provisions defining "intrastate" calls as any call that did not have to pass between RBOCs.[118]

110. WALDEN, *supra* note 38, at 290-91.
111. *See* Bonnett, *supra* note 52, at 250-51.
112. *See id.* at 252.
113. *See id.* at 280.
114. Cooper & Koukoutchos, *supra* note 34, at 316 (citing 47 U.S.C. § 152(b) (2006)).
115. *Id.*
116. *Id.* at 316-17.
117. The RBOCs were created during the dissolution of AT&T, were later reclassified as ILECs, and have consolidated somewhat in the decades since.
118. Cooper & Koukoutchos, *supra* note 34, at 317-18.

This meant, for example, that a switch in New York City handled local calls from western Connecticut, and they were treated as intrastate calls despite geography plainly indicating otherwise.[119] When voicemail was introduced, things got worse. Data storage is most efficient if it's largely centralized, meaning that subscribers from multiple states would actually leave voicemails for local numbers on servers located several states away.[120] Regulators still treat voicemail traffic as intrastate in nature, however, despite a clear technological indication to the contrary.[121]

Applying this regulatory model to packet-switched networks is an exercise in absurdity. Modern network design long ago exceeded so simple a regulatory scheme. A Comcast customer in Washington, D.C., for example, who has IP telephone service in addition to his high-speed service, receives all his connectivity through datacenters in northern Virginia.[122] The simple act of calling his neighbor crosses state lines. Any person using a Charter connection in South Carolina to connect to Skype to place a call, whether local or long distance, will have that call routed through Charter's datacenter before moving to one of Skype's datacenters elsewhere in the country. A call to one's neighbor, then, likely spends more time outside the state than it does inside. While Skype does offer its service in each of those states, it has physical facilities in no more than a handful.[123] The intrastate element of IP services is, in most circumstances, confined exclusively to the provision of connectivity, not to the provision of any particular service.[124]

Connectivity, on the other hand, remains much more substantially intrastate. While the servers most users access to connect to services and the Internet as a whole are unlikely to be located in one's state, there is certainly a cable or fiber endpoint on most every street, and a cable modem termination system ("CMTS") providing data connectivity at each local headend.[125] There is certainly cable in the ground, and buildings to house all this hardware, and employees to serve customers within the borders of each state. In a very real sense, the provision of basic network connectivity is the most significantly intrastate element of modern telecommunications systems.

In effect, the Commerce Clause was applied to the network structure of the PSTN to divide up jurisdiction between federal and state authorities.[126] The legal principles applied at the time remain sound, but the result of that

119. *Id.* at 318.
120. *Id.* at 319-20.
121. *Id.* at 318.
122. *Id.* at 318.
123. *See* Salman A. Baset & Henning Schulzrinne, *An Analysis of the Skype Peer-to-Peer Internet Telephony Protocol* 11 (Columbia Univ., 2004), *available at* http://arxiv.org/ftp/cs/papers/0412/0412017.pdf.
124. NUECHTERLEIN & WEISER, *supra* note 15, at 43-44.
125. *Id.* at 134-35.
126. Lyons, *supra* note 41, at 434.

analysis no longer matches reality. Despite revisions in the 1996 Act, notably the addition of federal preemptive power regardless of intrastate concerns, the current structure is ill-equipped to address the technology of today and tomorrow.[127] As the IP Transition moves forward, the inadequacy of this jurisdictional divide will be illustrated quite clearly as Title II-governed PSTN elements begin to be phased out.[128] While Title II was written to be technology-agnostic, its language was based on a set of presumptions about the underlying network architecture, which have partially been outstripped by innovation. In a very real sense, the federalism analysis applied to telecommunications services in the early part of the 1900s would, if revisited today, lead to a vastly different conclusion. The shift away from strictly tree-style copper networks undermines the geographic distinctions that supported the original implementation of the joint jurisdictional model.

Modern network design supports instead a conclusion similar to that reached by the FCC in examining ISP traffic. In that situation, the FCC found that such traffic was inherently interstate, and thus within the jurisdiction of the federal government under the Commerce Clause.[129] As communications increasingly resemble ISP traffic, and even become a significant portion of ISP traffic, it will be increasingly hard to justify treating voice service traffic differently.[130] An analysis of modern networks through the lens of federalism will likely no longer yield the same results which led to the dual-jurisdiction model.

B. Change Is Needed, but What Should It Look Like?

It is evident over the course of the past decade that the fundamental divisions drawn by the 1934 and 1996 Acts must be replaced to address changes in technology. It took nearly a decade after the divestiture of AT&T before the 1996 Act had a meaningful impact on telephone competition. The IP transition is moving forward rapidly, and may not be able to wait a decade. Such a timeframe may even be optimistic, considering the deeply divided political environment of the United States. One third of homes in the country no longer have a wired telephone at all, relying entirely on wireless services that utilize IP technology.[131] Of those homes which do have wired phones, nearly thirty percent connect using VoIP technology instead of traditional

127. *See id.* at 395.

128. While no plans yet exist to phase out the legacy elements of the PSTN, it will become an economic necessity as soon as 2018 by some estimates, and can therefore be presumed as something that will happen sooner rather than later. *See* GABEL & BURNS, *supra* note 4, at 3. It is difficult to envision a situation in which copper wire and 1930s regulatory models will remain the standard in 20 years.

129. Intercarrier Compensation for ISP-Bound Traffic, *Order on Remand and Report and Order*, FCC 01-131, 16 FCC Rcd. 9151, para. 1 (2001), *available at* https://apps.fcc.gov/edocs_public/attachmatch/FCC-01-131A1.pdf.

130. *See* Lyons, *supra* note 41, at 395.

131. *See* CDC REPORT, *supra* note 24.

wireline services.[132] AT&T is planning to move forward with IP trials, working with the FCC to examine and understand how a full transition will play out.[133] These efforts, driven largely by industry and consumer demand, are already well on their way to transforming the telecommunications industry, yet meaningful progress remains hindered by archaic law. Given that the constitutional principles which governed the creation of the 1934 Act may yield a different or less useful result today, it may be preferable to look to the networks themselves for guidance in developing a new framework.

While commenters generally agree that an overhaul is necessary, they differ as to the means of achieving reform. Cooper and Koukoutchos suggest, for example, that that widespread, preemptive deregulation of voice providers is a necessary and prudent first step toward meaningful reform.[134] Citing the Commerce Clause and applying federalism analysis to developing technologies, they reach the conclusion that, rather than attempting to implement a regulatory model that is tailored to existing technology, broad deregulation represents a more appropriate approach.[135] This strategy will permit industry to redefine services and communications technology as the market dictates, a process that would not be nearly so open-ended if restricted by substantial regulation.[136] They further argue that intermodal competition— that is, competition between different types of wired and wireless services—necessitates such a change, as no single set of regulations can equitably apply to all market participants without artificially distorting the impact of market forces.[137] The concern with this approach is that the regulations in place today are the result of decades of work to mold and shape an industry that grew out of a consumer-unfriendly monopoly. Broad-sweeping deregulation would reset the score, so to speak, and runs the risk of forcing consumers and regulators to re-learn painful lessons from decades past.

Other commenters favor the construction of a new model from the ground up. Richard Whitt,[138] for example, supports the creation of a regulatory framework, which is based on the "layers model" that describes the design of modern networks.[139] He explains that existing and past regulation can be described as vertical, in that it regulates a service from top to bottom, including not only the service that consumers receive, but also the

132. *See* FCC LOCAL TELEPHONE COMPETITION, *supra* note 23.
133. *See generally* AT&T Petition, *supra* note 31.
134. Cooper & Koukoutchos, *supra* note 34, at 344-45.
135. *Id.*
136. *Id.*
137. *Id.* at 347.
138. Richard S. Whitt is head of Public Policy and Government Relations for Motorola Mobility, and was formerly Google's Senior Policy Director, as well as an employee of MCI for 12 years. LINKEDIN, http://www.linkedin.com/pub/richard-whitt/1/337/760.
139. Richard S. Whitt, *A Horizontal Leap Forward: Formulating a New Communications Public Policy Framework Based on the Network Layers Model*, 56 FED. COMM. L.J. 587, 590 (2004).

underlying infrastructure and connectivity that supports it.[140] As technology has evolved, however, network design has become more horizontal, as different providers serve different connectivity roles, combining their "layers" in the modern network stack. Networks can be described as "horizontal," in that a service rides across a modern network alongside other services—horizontally, or side by side, in other words. Older networks required separate networks for separate services, or could only be utilized for one service at a time. Dial-up internet required use of a phone line, for example. Modern IP networks permit voice, data, and video services to ride side-by-side over a single copper or fiber line. One provider may connect multiple last-mile carriers, who in turn each carry third-party services to their customers.[141] The services consumers utilize ride on top of network connectivity provided by companies that also directly interface with consumers, while those companies in turn are connected through backbone companies that provide underlying connectivity.[142] Attempting to force a vertical model subjects multiple businesses to regulations that could be tailored to the layer of the network each provider serves, rather than to the end service that the consumer receives.[143]

A layers-based regulatory approach would seek to address this by dividing the industry into regulatory groups based on the function their company serves, rather than the particular consumer service their service supports.[144] Backbone providers' connectivity-related activities could be regulated without saddling them with consumer-directed regulations, and all voice services could be regulated as a whole, regardless of the technology the service provider chooses to use.[145] While a layers model approach may seem desirable, it does have its flaws. It is subject to market power abuse when one or more companies are dominant in a particular layer, for example.[146] It also struggles to reconcile its strict division of layers with legitimate state interests in communications regulation, such as consumer protection and public safety, and is ill-equipped to address matters that must, by their nature, remain local, such as rights-of-way.[147]

Similarly, Rob Frieden[148] advocates for the application of a more horizontal model, writing that current policies "do not fully segregate content from the conduit used to deliver the content, with the result of applying

140. *Id.*
141. *Id.*
142. *Id.* at 591-92.
143. *Id.* at 625.
144. *Id.*
145. *Id.* at 636-37.
146. *Id.* at 632.
147. *Id.* at 649-50.
148. Rob Frieden is a Professor of Telecommunications and Law at Pennsylvania State University. His industry experience includes time spent with Motorola Satellite Communications, Private Trans-Atlantic Telecommunications Systems, and the National Telecommunications and Information Administration.

different degrees of government oversight based on the method for delivering possibly the same content."[149] While he supports an application of layers principles, he is less revolutionary in his proposal, suggesting instead that the layers model be used as a starting point, with exceptions carved out where common sense or policy objectives indicate it would be wise to do so.[150] He notes that the FCC is already moving in this direction, as "the FCC believes the identical designation for services transmitted via different technological architectures represents a functional approach that supports ubiquitous deployment of advanced services, harmonized regulation of multiple technical platforms, minimum necessary regulation, and a consistent analytical framework."[151] Frieden's proposal serves as a solid middle ground, balancing the need for reform with the realities of industries that are already developed and flourishing under a very different model.

Common amongst all commenters, however, is the sentiment that the current legislation that governs the FCC and dictates the powers it holds does not permit it to conduct so widespread a redesign of our nation's communications regulations.[152] As the FCC is an administrative agency governed by the mandates of Congress, it cannot act outside its granted authority—we must wait, in other words, for Congress to provide us with some solution to these myriad issues. With the transition well underway and Congress only just starting to get engaged, perhaps there are options that policymakers can pursue in the interim while they wait for a major overhaul. These actions might indicate to Congress the direction the FCC wishes to go, based on its expert analysis of markets and technology, while also serving to provide substantive improvements for businesses and consumers in the interim. The question, then, is what sort of end result is desirable.

C. What Should the Next Act Look Like?

With the need for regulatory overhaul firmly established, the next challenge comes in determining the final situation that is most desirable to serve as an objective. A new model is needed, resting as others have suggested on a more contemporary evaluation of both the legal principles that underlie federal authority in this field, as well as the practicalities of modern technology. This model will need to account for increased public interest in communications issues including privacy and consumer protection, and address fundamental shifts in technology, while preserving the role of the states in regulating those aspects of communications where their participation is necessary and desirable.

149. Frieden, *supra* note 57, at 210.
150. *Id.* at 248-49.
151. *Id.* at 230.
152. *See id.* at 229-30.

One of the fundamental bases for this new model should be, as suggested by Frieden, a separation between a particular type of service or content, and the connection which delivers it.[153] Dividing services up in this manner adheres also to the layers model proposed by Whitt, in that it would permit services to be regulated based on the customer they serve and the type of service they are, rather than the means by which that service is delivered.[154] Companies that provide voice services to end users, for example, should be regulated equally regardless of the means they choose to provide this service. Companies that provide trunk bandwidth and network backhaul should be regulated the same, regardless of the services for which they provide backhaul. Video service providers should bear equal regulatory obligations, regardless of the means they choose to use in delivering video to consumers. This would go against the current Act's structure, in which Title II is built to regulate telecommunications providers as common carriers and considers the service to be integrated with the network that provides it, regulating the two elements as one. As Frieden notes, actions of this type have already been taken pursuant to the 1996 Act, as "the FCC largely eliminated the vertical link between a service definition and the applicable regulatory model."[155] This would also satisfy a refreshed federalism analysis, echoing the FCC's findings regarding ISP traffic—namely that traffic over IP networks, due to the design of such networks and the centralization of routing facilities, is inherently interstate and thus subject exclusively to federal jurisdiction.[156]

Another important priority must be preservation of remaining state interests in communications regulation. While the state interest has significantly diminished over time, or has been removed as was the case with tariff requirements, there remain aspects of the communications system which directly require a state role. 911 services, for example, are primarily overseen at the local and state level, rather than federally.[157] While the precise governance of public safety answering points ("PSAPs") varies from state to state, they are generally closely tied to the first responder services maintained by the states. It would make little sense, and arguably usurp states' police powers, to preempt these functions and regulate them federally. Even if such preemption were permissible, the FCC is ill-equipped to address issues arising on so localized a scale, and it would serve little purpose to reshuffle responsibility in this area.[158] States also have obligations and

153. *Id.* at 231.
154. *See* Whitt, *supra* note 139, at 590.
155. Frieden, *supra* note 57, at 223.
156. Bonnett, *supra* note 52, at 280-81.
157. Holloway, Seeman, & O'Hara, *supra* note 87, at 4.
158. Victoria A. Ramundo, *The Convergence of Telecommunications Technology and Providers: The Evolving State Role in Telecommunications Regulation*, 6 ALB. L.J. SCI. & TECH. 35, 57-59 (1996).

interests in rights-of-way determinations.[159] Furthermore, there remain aspects of telecommunications service regulation, particularly as pertains to consumer protection and service quality, which the states may be better-equipped to address.[160] It would make little sense, for example, for consumer complaints about local service quality to require review at the federal level, or for states to be unable to act to protect their consumers from unfair business practices.[161] If services were separated from the connectivity on which they rely, network reliability would "become of increasing concern," as responsibility for public safety connectivity would rest with two parties—a service provider and a connectivity provider—rather than one, as is usually the case today.[162] Complaints by consumers about issues affecting "service quality, price, installation, consumer fraud, and billing practices" would continue to deserve attention, and may best be handled at the state level.[163] Such issues are at least partially local in scope, and in many ways could be more adequately addressed locally; the states have an interest in protecting their citizens, and a new regulatory model should preserve a place for the states at the table.[164]

D. Congress Is on the Job, but Can We Afford to Wait?

Congress has at last recognized the need for an update to the 1996 Act, potentially at a fundamental level. In its first whitepaper on the topic, released in January of 2014, the House Energy and Commerce Committee staff noted that "while there were historic reasons for separating the Act into service-based titles, the Act and subsequent changes to it did not envision the intermodal competition that exists today."[165] They are correct to note that these historical reasons, as previously discussed, do not necessarily hold true today. Congress has been faced with the challenge of updating the Act to address new technologies in the past, however, so this situation is by no means unique. In the 1970s, cable systems developed at a rapid pace and the FCC did its best to regulate them, but was stymied by court decisions that reversed its efforts citing a lack of statutory authority.[166] It took Congress five years to develop the Cable Communications Act of 1984, which finally granted the FCC the authority to regulate cable systems and video providers.[167]

Congress today stands more divided than ever before, and a complete redesign of our country's regulatory framework is a substantially

159. *Id.* at 57.
160. *Id.*
161. *Id.*
162. *Id.* at 61.
163. *Id.*
164. *Id.* at 61-62.
165. MODERNIZING THE COMMUNICATIONS ACT, *supra* note 103, at 3.
166. FCC v. Midwest Video Corp., 440 U.S. 689, 708-09 (1979).
167. 47 U.S.C. § 521 (2006).

larger task, with many more stakeholders, than the task of determining the best way to add a new technology to an existing framework. It is rare for Congress to be able to even pass a budget, let alone a major bipartisan regulatory rewrite. Furthermore, any potential legislative solution will likely need to wait at least until the 2016 elections, as Congress now sits in Republican hands. A rewrite of the Act would need to address a number of deeply divisive issues, including tax policy, privacy, consumer protection, antitrust concerns, and net neutrality. Without a strong Democratic presence in Congress, it is unlikely President Obama will be presented with a telecom act rewrite he would feel comfortable signing during the remainder of his presidency.

Given the scale of this challenge, the political realities of the next two years, and the pace at which the IP transition is already moving, it is doubtful that industries, consumers, or regulators will have either the desire or the ability to push "Pause" and wait for Congress to provide an updated regulatory framework in which the IP transition can take place. The FCC may not need to sit still for so long, however, as it has a sizeable toolbox even under the current Act.

E. The FCC Can Lead the Way

With basic objectives established to inform future choices, the FCC has the opportunity to act in a way that will drive the regulatory environment toward those goals while remaining within the scope of current law. The separation of services from the networks that provide them would be one strong step forward. The current structure of the Act leads naturally to the "'siloed' sector-based nature of the law and resulting regulation."[168] If we could move away from siloed or vertical regulatory models, and toward horizontal regulation now, without waiting for new legislation, the benefits would be immense.

Under current law, a service which provides voice communications can be classified either as an information service, and thus exempt from most types of regulation including universal service obligations, or classified as a telecommunications service under Title II, and subject to common carrier regulations pursuant to the 1996 Act.[169] In the interests of promoting competition in the marketplace and allowing new business models to develop, the FCC has made a point of avoiding the classification of new voice services into either category.[170] It has classified some types of VoIP as information services to avoid common carrier obligations, while most types remain entirely unclassified.[171] It has imposed some common carrier obligations on VoIP providers, however, particularly universal service and

168. *See* MODERNIZING THE COMMUNICATIONS ACT, *supra* note 103, at 3.
169. 47 U.S.C. § 153(24), (53) (2006).
170. *See Vonage Order*, *supra* note 7, at para. 1.
171. *Id.*

911 interconnection requirements.[172] The ability of the FCC to selectively adopt regulations in this manner, however, has been significantly curtailed by the recent decision regarding the Open Internet Order. The DC Circuit held that the FCC could not apply broad common carrier rules to a service without actually classifying that service as a common carrier.[173] To do one without the other would subvert Congress' intent expressed in the structure of the act.[174]

The Commission appears stuck, then, with this forced choice between two less-than-ideal classifications. Fortunately, the FCC has some tools at its disposal that might allow it to improve the situation while awaiting Congressional guidance regarding the Hill's desired path for the future of communications regulation. First and foremost among these tools is the FCC's preemption power. The FCC enjoys broad preemptive powers under section 253 of the 1996 Act.[175] The FCC may preempt any state regulation which it reasonably believes may have a negative impact on the promotion of competition in the telecommunications industry.[176] It could, if it desired, functionally eliminate the role of the states in the regulation of telecommunications services by exercising its authority under this section, as it did with the *Vonage Order's* preemption of the regulation of VoIP.[177] The FCC could argue that the states' differing treatment of services that are, in the modern age, inherently interstate, negatively impacts the ability of companies with a physical presence in more than one state to compete in the national marketplace.

Another of the powers the FCC enjoys that might be of use here is its ability to release Title II providers from certain provisions of the Act,[178] "if enforcement is unnecessary to ensure that rates and practices are just, reasonable, and not unreasonably discriminatory; enforcement is unnecessary to protect consumers; and forbearance is consistent with the public interest, in that it 'will promote competitive market conditions' and 'enhance competition among providers of telecommunications services.'"[179] The FCC has used this power to release providers from various Title II obligations before, notably when it eliminated the longstanding requirement that voice service providers file tariffs.[180] However, the FCC has also gotten

172. *USF Contribution Order*, *supra* note 84, at paras. 1, 15.
173. *See* Verizon v. FCC, 740 F.3d 623, 628 (D.C. Cir. 2014).
174. *See Id*.
175. *See* 47 U.S.C. § 253 (2006).
176. *See Id*.
177. *See Vonage Order*, *supra* note 7, at para. 1.
178. *See* Telecommunications Act of 1996 § 401(a), Pub. L. No. 104-104, 110 Stat. 56, 128-129 (codified at 47 U.S.C. § 160(a) (2006)).
179. Ad Hoc Telecom. Users Comm. v. FCC, 572 F.3d 903, 907 (D.C. Cir. 2009) (quoting Telecommunications Act § 401).
180. *See* Frieden, *supra* note 57, at 242 & n.106.

in trouble with its forbearance power.[181] A significant portion of the reason why new regulation is necessary is because broad forbearance from Title II has already been granted by the Commission for providers of fiber Ethernet services, which form the backbone of most IP networks. The FCC's forbearance authority is limited, however, and a section 401 decision is subject to judicial review to ensure it is not "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law."[182] This power may be helpful to an extent to permit pursuit of a layers model by removing regulations that distinguish between services on the basis of their means of provision, as is currently the case with the vertical model.

One tool the FCC unfortunately does not possess is the ability to delegate its authority in any manner it sees fit. While it has the power to delegate within itself, the D.C. Circuit held in 2004 that, absent an express legislative mandate, the FCC cannot delegate its authority to a state public utility commission.[183] The FCC does have the authority to delegate in some areas, such as numbering administration, but the court found that the FCC failed to recognize "an important distinction between subdelegation to a *subordinate* and subdelegation to an *outside party*."[184] Existing law only permits administrative authorities, by presumption, to delegate their authority to direct subordinates within their agencies, and "there is no such presumption covering subdelegations to outside parties. Indeed, if anything, the case law strongly suggests that subdelegations to outside parties are assumed to be improper absent an affirmative showing of congressional authorization."[185] The Court reasoned that delegation to outside authorities would create the potential for parties to act in a manner inconsistent with Congress' stated purpose or intent.[186]

Were the FCC to possess this power, it would be a relatively straightforward task to apply its preemption power to redefine what areas are regulated by states or by the FCC, by preempting areas in which the states should not have a role, and delegating back areas in which they should. This could be justified by citing the aforementioned competition concerns, while leaving intact those elements of regulation in which the states have an interest. The FCC could further appease the states by delegating portions of its Title II authority pertaining to connectivity back to the states, to enable them to pursue their interests in consumer protection, public safety, and improved access to communications services.

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181. Christopher S. Yoo, Wickard *for the Internet? Network Neutrality After* Verizon v. FCC, 66 FED. COMM. L.J. 415, 445 (2014) ("In practice, however, the agency's experience with forbearance has not been a happy one.").

182. Ad Hoc Telecomm. Users Comm., 572 F.3d at 908 (quoting 5 U.S.C. § 706(2)(A)).

183. *See* U.S. Telecomm. Ass'n v FCC, 359 F.3d 554, 566 (D.C. Cir. 2004).

184. *Id.*

185. *Id.* at 565.

186. *Id.*

In the absence of such broad authority, however, the FCC should move the ball forward as far as it can. An exercise of the FCC's preemptive authority under section 253 of the Act, coupled with, where appropriate, elimination of some Title II common carrier obligations pertaining exclusively to the service aspect of telecommunications, may start things down the path toward separating services from the networks that carry them. This would only be a first step, showing the FCC's intent to pursue a form of layers model regulation in the future, and support efforts to improve and expand the scope and efficacy of federal telecommunications regulation going forward. This path would mirror the FCC's actions in the 1970s regarding cable services, and its work in the late 1980s to promote competition in the telephone markets.

IV. CONCLUSION

Telecommunications regulation has come far in the 80 years since the creation of the FCC and the first major regulation of the PSTN. The regulatory models we employ, however, have struggled mightily to cope with the rapid pace of technological innovation. We find ourselves today able to hold a phone in our hand which can connect us wirelessly to anyone else, anywhere in the world, in seconds, and has orders of magnitude more processing power than the computers we used to send men to the moon, and bring them safely home. Our regulations, however, are based on a model that originated at a time when most cars were started by hand-crank. While old does not necessarily mean bad, older regulations are not always equipped to deal with things beyond the imaginations of their creators. It will be important to keep key policy objectives in mind while designing a new framework.

While the states retain some legitimate interests in regulating telecommunications, the continued adherence to the vertical and joint-jurisdictional regulatory model is hampering further innovation. Change is coming, as Congress has begun to move toward a redesign of the regulatory model which governs telecommunications. Congressional action takes time, however, and the IP transition waits for no one.

While stakeholders wait for a new Act to address these concerns, the FCC can and should act with its preemption and forbearance powers to move as much as it can toward a layers-inspired, more horizontal regulatory model. The FCC can separate the provision of a service from the provision of connectivity, and work to minimize regulatory overhead while continuing to promote competition and the public good through the health of the next generation of the PSTN. By acting in this way, it can also show Congress the direction it believes should be taken in a new Act, and begin to address the challenges it may face if given the ability to move in that direction. By carrying out such actions, the FCC can serve as a guiding force for the redesign of our regulatory framework, rather than continuing to struggle

under an outdated framework until a new one is presented for it to apply instead.