VOIP: REGULATING THE FUTURE

I. INTRODUCTION

Voice over Internet Protocol (VoIP) is an emerging technology that allows individuals to place phone calls using the Internet.[1] Facing this new technology, the United States must determine what regulatory framework should apply to the regulation and administration of VoIP.[2]

This Note will explore the history of VoIP and discuss the regulatory issue of the classification of VoIP as either a "telecommunications service" or an "information service." Furthermore, it will suggest a framework that the Federal Communications Commission (FCC) should consider as it attempts to regulate this rapidly developing Internet technology. This Note will then describe a number of international approaches being implemented in countries such as Canada, Great Britain, India, and Japan. Additionally, this Note will discuss individual state regulatory positions and the limited body of United States case law regarding VoIP services. Finally, the Note will conduct a comparative analysis of these different frameworks, suggest the most practical approach for the United States to implement, and address recent developments in the regulatory battle over VoIP.

II. BACKGROUND OF VOICE OVER INTERNET PROTOCOL

VoIP utilizes the Internet infrastructure to make phone calls as opposed to the traditional public switched telephone network (PSTN) that has been in place for more than a century.[3] VoIP is a "dazzling development" that challenges the current regulatory frameworks and rules.[4] In the United States, as in most parts of the world, telecommunications is a highly regulated industry, but currently, the internet remains largely unregulated.[5]

---

1. See *infra* note 3 and accompanying text for a definition of Voice over Internet Protocol. See *infra* Part II, note 12, and accompanying text for a detailed description of how VoIP functions and how it differs from the traditional telephone networks used for the past century to make voice phone calls.

2. Catherine Yang, *Getting Real at the FCC*, BUSINESSWEEK, Feb. 7, 2005, at 34–35.

3. ROGER DARLINGTON, A GUIDE TO VOICE OVER INTERNET PROTOCOL 2 (2004), http://www.rogerdarlington.co.uk/VoIP.html.

4. Yang, *supra* note 2, at 34.

5. DARLINGTON, *supra* note 3, at 8. Roger Darlington is a portfolio worker in the communications field and was the first independent Chair of the Internet Watch Foundation (IWF). British Internet Service Providers established IWF to combat illegal content, especially child abuse images, on the UK internet. Darlington is also a Member of the Ofcom Consumer Panel, which

The key issue facing legislatures and government officials is whether VoIP should be regulated. The voice element suggests regulation under traditional telecommunications laws, while the Internet Protocol (IP) element suggests that, like the Internet, it should go unregulated.[6] VoIP illustrates the impact of emerging technologies that evolve ahead of laws and regulations intended to address them. Although many in the technology industry believe the Internet will thrive only in the absence of regulation, regulators face the difficult task of balancing the public interest and the continued promotion of the advancement of emerging technologies.[7]

With VoIP technology, sound is broken into small packets and then transmitted over the Internet.[8] This technology allows for the simultaneous transmission in both directions of voice data. VoIP technology also reroutes the voice data through the least busy lines for quicker delivery and reassembles the packets into sound when it reaches its final destination.[9] On the other hand, PSTN data transmission is uni-directional.[10] When one person is sending data, "the other side is 'locked up' and cannot transmit, resulting in slower data transmission."[11] Specifically, VoIP transmits data through packet switching while PSTN uses circuit switching.[12]

In the past, the sound quality of VoIP was inconsistent and unreliable.[13] Today, the technology has improved to the point where VoIP is a viable

---

provides independent advice to the regulator on broadcasting and telecommunications issues, and is active in trade unions for professional telecom workers.

6. *Id.*

7. Nicholas Thompson, *A New Technology Allows Consumers to Make Cheap, Clear Phone Calls over the Internet: Will the FCC Allow it to Flourish?*, LEGAL AFFAIRS, Mar.–Apr. 2004, at 70. This view was "built up largely in the early [1990s], as Internet use in the United States soared ahead of the rest of the world, in part because the Clinton Administration and Congress set a clear policy of minimal regulation." *Id.*

8. DARLINGTON, *supra* note 3, at 2.

9. Konrad L. Trope & Paula K. Royalty, *Current Legal Issues Surrounding the Regulation of Voice Over Internet Protocol*, 5 INTELL. PROP. & TECH. L.J. 10, 16 (2004).

10. *Id.*

11. *Id.*

12. DARLINGTON, *supra* note 3, at 2. PSTN uses circuit switching, where "for each telephone call made, circuits are switched in the intervening telephone exchanges to create a physical connection between the caller and the person being called for the duration of the call." *Id.* Alternatively, VoIP uses packet switching, where the "data [voice] is divided into small packets and given identifying information and then sent over the network by a variety of different routes, before being reassembled at the end into the format of the original [voice] message." *Id.* Packet switching uses a much simpler system of routers as opposed to the elaborate system of switches or exchanges used in circuit switching. *Id.*

13. *Id.*

alternative to traditional phone lines.[14] As compared to some conventional long distance and local telephone companies, VoIP is less expensive and is therefore promoted as competition to these traditional providers.[15] An additional advantage of VoIP is that, using a single ten digit number, a subscriber can make a call from any global location with a broadband connection.[16]

Yet, VoIP technology also has its fair share of disadvantages.[17] VoIP does not have an independent power source; thus, in the case of a power outage or a disruption in the Internet Service Provider (ISP), no VoIP calls can be made.[18] Similarly, because VoIP utilizes the public Internet to transmit phones calls, the network is subject to viruses, spam, and denial of service attacks.[19] Also, since the same VoIP telephone number can be used in virtually any location in the world, VoIP poses a challenge for the "911" emergency service because the system cannot identify the exact location of an emergency call.[20]

In the United States, the VoIP boom is just over the horizon. Major telecommunications, cable service providers, and computer hardware companies expect to offer VoIP services in the very near future.[21] As more

---

14. Robert Paolino, *Voice Over Internet Protocol: New Telephone Service Poses Regulatory Challenges*, WIS. BR. FROM THE LEGIS. REF. BUREAU (2004), http://www.legis.state.wi.us/lrb/publs/wb/04wbl5.pdf.

15. *Id. See also* Andy Reinhardt, *Net Phone Calls Free and Clear*, BUSINESSWEEK, Nov. 1, 2004 (discussing Skype Technologies, which offers free voice calls from computer to computer over the Internet). The number of new registered users of the service is 70,000 per day, up from 30,000 in May. Skype has also recently launched a service which allows subscribers to make calls to regular phones for two cents per minute. *Id*.

16. Paolino, *supra* note 14, at 1. VoIP users are no longer limited to calling other Internet voice users; they can call virtually anyone with a telephone number. For example, after the September 11th terrorist attacks, members of Lehman Brothers Holdings, Inc. were dispersed throughout the New York metropolitan area. The employees, who had started using VoIP in early 2001, simply took their telephones and plugged them in at their new location and were fully operational with the same telephone numbers. Phil Hochmuth, *Lehman Brothers*, NETWORK WORLD, June 21, 2004, *available at* http://www.networkworld.com/supp/2004/ndc4/0621lessons1.html.

17. *See supra* note 3 and accompanying text.

18. Trope & Royalty, *supra* note 9. *See also* Paolino, *supra* note 14, at 1.

19. Paolino, *supra* note 14, at 1.

20. *Id*.

21. Thompson, *supra* note 7, at 69 (discussing MCI, Cisco Systems, Time Warner, and Vongage). Vonage's services are nearly the same as traditional phone service, except that unlimited local and domestic long-distance service costs only $34.95 a month (a recent advertisement on the Vonage Website, www.vongage.com, now lowers the monthly service price to $24.95 a month) compared to traditional phone services, which average about $80 per month. For example, MCI plans to use only VoIP technology by the year 2005. Cisco Systems has started doing "brisk business in helping offices revamp their internal phone systems with VOIP." Time Warner Cable "announced that they will use the Internet to offer residential phone service in addition to cable television and straight Internet connections." New Jersey-based start-up, Vonage, "allows residential users to route their calls from their normal phones through their computer to any other phone worldwide." *Id*. at 69–70.

and more non-traditional telecommunications companies enter the traditionally regulated telecommunications industry, "the Federal Communications Commission (FCC) will . . . [eventually] have to lay down rules that will govern the American VoIP market."[22] The FCC will need to decide whether to define VoIP either as an "information service" or as a "telecommunications service."[23] The Telecommunications Act of 1996 sets forth the differences in definition and regulation of these services.[24] If the FCC chooses to define VoIP under Title One of the Telecommunications Act, it would "make VoIP essentially regulation-free, much like other Internet content."[25] But if the FCC chooses the latter and defines VoIP under Title Two, the government will regulate VoIP under the myriad of regulations that has been developed for the telephone industry over the past 100 years.[26]

III. FEDERAL REGULATION ISSUES

As noted above, the issue of federal regulation of VoIP will turn on whether the FCC classifies VoIP as a "telecommunications service" or an "information service." In *Vonage v. Minn. Pub. Util. Comm'n*,[27] the district court examined the recent history of regulations governing the telecommunications industry.[28] The court found that, by 1980, the FCC had recognized the growing challenges posed by the interaction between computers and telecommunications technology.[29] At that time, the FCC

22. Thompson, *supra* note 7, at 70. Skype Technologies, a Stockholm-based company, has downloadable software that allows users to freely call fellow downloaders. See *supra* note 7 for more a more detailed description of the services and technologies provided by Skype Techologies.

23. *Id.*

24. 47 U.S.C.A § 153 (1997). Congress defined "telecommunications" as "the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received." 47 U.S.C § 153(43). In addition, Congress defined "telecommunication service" as "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used." 47 U.S.C. § 153(46). Finally, "information service" is defined as the following:

> [T]he offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes the electric publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.

47 U.S.C. § 153(20).

25. Thompson, *supra* note 7, at 70.

26. *Id.*

27. Vonage v. Minn. Pub. Util. Comm'n, 290 F. Supp. 2d 993 (D. Minn. 2003).

28. *Id.* at 997–98.

29. *Id.* at 998.

distinguished between "basic services" and "enhanced services,"[30] noting that "basic services" would continue to be regulated by Title Two[31] while "enhanced services" would go unregulated.[32] The FCC further stated that the absence of regulation of "enhanced services" offers "the greatest potential for efficient utilization and full exploitation of the interstate telecommunications network."[33] Nearly twenty-five years ago, the FCC declared its intention to keep a distinction between basic and enhanced services. Based on this federal policy, current federal regulators continue to keep VoIP free from regulation.[34]

IV. STATE REGULATION ISSUES

States have been trying to regulate broadband services by extending their jurisdiction through creative legal theories.[35] State legislatures have created incentive programs to promote broadband investment within their states.[36] Many states view broadband network deployment as an important factor in economic development and as a way to link thinly populated areas with the rest of the state, as well as to the global economy.[37]

Furthermore, states are concerned about losing power over the regulation of broadband services to the federal government. Currently, any state power over broadband is mainly due to political pressure rather than

---

30. *Id.*

31. See *supra* note 22 for a detailed discussion of what the Telecommunications Act of 1996 defines as those services subject to regulation under Title Two.

32. *Vonage*, 290 F. Supp. 2d at 998.

33. *Id.*

> [W]e adopt a regulatory scheme that distinguishes between the common carrier offering basic transmission services and the offering of enhanced services . . . . We find that basic service is limited to the common carrier offering of transmission capacity for the movement of information, whereas enhanced service combines basic service with computer processing applications that act on the format, content, code, protocol or similar aspects of the subscribers transmitted information, or provide the subscriber additional, different, or restructured information, or involve subscriber interaction with stored information.

Id.

The FCC went even further when it discussed its "contamination theory." It stated that when "the enhanced component of [service providers] offerings contaminates the basic component . . . the entire offering is therefore considered to be enhanced." *Id.*

34. *Id. See also* Yang, *supra* note 2, at 34. (discussing Michael Powell's "unshakable belief that technological advances would sweep aside the necessity for regulation").

35. Rebecca Arbogast, *FCC's Broadband Quartet: A State-Federal Fugue or Feud?*, 2 J. TELECOMM. & HIGH TECH. L. 245 (2003).

36. *Id.* Arbogast states that California and Kentucky have developed creative legal theories to extend jurisdiction over broadband and discusses the Colorado, Washington, and Michigan legislatures.

37. *Id.* at 245–46.

any clear jurisdictional authority.[38] The FCC and Congress, with confirmation from the courts, have largely preempted substantial state jurisdiction.[39] As the FCC has largely tried to remove regulations on broadband services, state regulators continue to try and find ways to "retain or acquire policy making authority in this area."[40] The FCC must strike the right balance of regulation to continue the investment in broadband without quashing innovation.[41] The current position of the FCC encourages innovation and ubiquitous availability of broadband services to all Americans.[42]

The FCC classified broadband cable modem service as an "interstate information service, placing it under the unregulated statutory Title One category."[43] VoIP uses broadband Internet connections to offer customers the ability to place their calls, and therefore, under the FCC ruling, VoIP should remain unregulated. Incumbents in the telecom industry advocate against this federal position of little or no regulation. New providers will insist upon the Title One classification—the less regulation over VoIP, the less barriers to entry for start-ups and other new service providers.

V. STATE POSITIONS

The states' strongest argument for regulating VoIP under Title Two of the Telecommunications Act is that if VoIP "looks likes a phone, acts like a phone, and sounds like a phone, then it is a phone."[44] State regulators, who under the current law lack significant legal jurisdiction, support the Title Two classification over broadband transmission because they would retain some jurisdiction over broadband services.[45]

---

38. *Id.* at 246.

39. *Id.*

40. *Id.* Their ability to do so will vary with the particular issue and depends in large part on the degree to which the FCC expressly preempts state efforts. However, the courts are likely to strike down state agency efforts to regulate broadband in the face of express federal agency preemption. *Id.*

41. *Id.*

42. *Id.* "[A] minimal regulatory environment that promotes investment and innovation in a competitive environment . . . [creates a] rational framework for the regulation of competing services that are provided via different technologies and network architectures." *Id.*

43. *Id.* at 260. The significance of the classification is that it removes broadband transmission and telecom and cable modem broadband internet access services, which make up ninety-seven percent of the country's broadband services, from common carrier and cable regulation. *Id.*

44. Thompson, *supra* note 7, at 70.

45. Arbogast, *supra* note 35, at 285. Under current law, if the underlying broadband transmission service remains classified under Title Two, and has both an intrastate and an interstate component, the states can craft legal theories, under either their state telecommunications statutes, state consumer protection statutes, or through their authority under the Telecommunications Act of 1996, to arbitrate

Another major concern of state regulators is that the federal government's position will transform the regulatory structure of the telecommunications industry, including the nation's networks, both facilities and services, into a private, closed, and largely unregulated environment.[46] State regulators fear that consumers and service providers who operate in an unregulated telecommunications environment will have no regulatory protections. In addition, state regulators believe that full competition will not be available to provide the protections of a fully functioning market.[47]

A number of public safety issues also concern state regulators.[48] The telephone system plays a critical role in law enforcement.[49] With traditional PSTN lines, people in trouble dial 911 on the phone, and the local police station can quickly determine their location. However, with VoIP, a user can make a call from anywhere in the world, but the call will originate from the user's home phone number.[50]

An additional public safety issue is law enforcement's difficulty in wiretapping VoIP.[51] Federal Bureau of Investigation (FBI) officials can easily tap into PSTN long distance circuits, but they have difficulty intercepting the packet circuits used in VoIP.[52] Federal law enforcement officials worry that unless VoIP service providers offer surveillance hubs on common standards, lawbreakers can evade surveillance by using VoIP providers.[53]

The FBI supports its contention that VoIP service providers must allow wiretapping under a controversial law called the Communications Assistance for Law Enforcement Act (CALEA).[54] Under CALEA,

---

interconnection agreements, to regulate broadband services, including the telecommunications services that may ride over them. *Id*.

46. *Id.* at 286.

47. *Id.*

> If the Commission's deregulatory broadband rulings are upheld . . . the two main underlying facilities into the home, cable and incumbent telephone companies, may be unavailable to companies seeking to provide competitive service. If the FCC classifies both the integrated Internet access/broadband transmission, and the telecommunications component . . . as Title One, then this places broadband services of both cable and wireline services outside the reach of both state and federal regulators . . . .

Id. at 287.

48. Paolino, *supra* note 14, at 1–2.

49. Thompson, *supra* note 7, at 70. *See generally* Trope & Royalty, *supra* note 9; Paolino, *supra* note 14.

50. Thompson, *supra* note 7, at 70.

51. Trope & Royalty, *supra* note 9, at 11.

52. Thompson, *supra* note 7, at 71.

53. Trope & Royalty, *supra* note 9, at 11.

54. 47 U.S.C. § 1003 (1994).

telecommunications services have to rewire their networks to provide police with guaranteed access for wiretaps. But currently only traditional PSTN services providers and wireless phone services have been subject to the legislation. The FBI now wants CALEA to be interpreted to give authority to wiretap broadband services, including VoIP.[55] This interpretation is dependent on VoIP being defined as a "telecommunications carrier," which would then subject it to CALEA.[56]

Another major concern for state regulators is the Universal Service Fund (USF), a federal program funded through contributions based on a percentage of revenues received from interstate and international telecommunications services.[57] The program subsidizes rural telephone service to low income individuals, and internet access for schools, libraries, and rural health care. Like other government subsidy programs,

---

> [A] telecommunications carrier shall subject to subsection (e) of this section ensure that its systems are capable of—(A) accommodating simultaneously the number of interceptions, pen registers, and trap and trace devices set forth in the notice under subsection (a)(1)(A) of this section; AND (B) expanding to the maximum capacity set forth in the notice under subsection (a)(1)(B) of this section.

Id.

55. *Id.*

56. 47 U.S.C. § 1001.

> The term "telecommunication carrier" means a person or entity engaged in the transmission or switching of wire or electronic communications as a common carrier for hire; and includes a person or entity engaged in providing commercial mobile service; a person or entity engaged in providing wire or electronic communication switching or transmission service to the extent that the Commission finds that such service is a replacement for a substantial portion of the local telephone exchange service and that it is in the public interest to deem such a person or entity to be a telecommunications carrier for purposes of this subchapter; but does not include persons or entities insofar as they are engaged in providing information; and any class or category of telecommunications carriers that the Commission exempts by rule after consultation with the Attorney General.

Id.

Critics of CALEA point to privacy issues as a major concern. "In particular, since VoIP represents the blending of data and real time voice transmissions, privacy advocates worry that VoIP wiretapping will lead to 'dataveillance,' where data such as location information will be routinely collected for surveillance without any investigatory predicate." Trope & Royalty, *supra* note 9. Also the FBI cannot ensure that this access will not expose VoIP to illegal invasion by private parties seeking privileged or confidential information. Likewise, there is the risk of over-inclusive sweeps of conversations and data transmissions that are not the target of any government probe. Trope & Royalty, *supra* note 9.

57. Arbogast, *supra* note 35, at 292. *See also* 47 U.S.C. § 254 (1998).

> [T]he states are also concerned about the impact of VoIP on universal service. The association of state regulators, National Association of Regulatory Utility Commissioners, Board of Directors adopted a resolution cautioning that "[a] decision by the FCC . . . to declare all phone-to-phone calls over IP networks to be information services by virtue of the technology could have negative effects on various telecommunications policies, including universal service, and might be inconsistent with the 1996 Act.

NARUC, Resolution Relating to Voice Over Internet Telecommunications (Feb. 26, 2003), http://www.naruc.org/displaycommon.cfm?an=1&subarticlenbr=147 (last visited on Feb. 3, 2006).

USF is running out of money due to declining long distance revenues.[58] Currently, cable companies make contributions to the USF from revenues from circuit switched telephone services provided over their cable networks, but they do not contribute revenues earned from cable modem Internet access.[59] On the contrary, telephone companies contribute to the USF based on revenues received from broadband services, including internet access and DSL services.[60] The FCC faces a key regulatory issue when classifying VoIP because, based on the current framework, a classification of VoIP as an information service would mean a continued obligation for wireline (telephone companies) to contribute to the USF while cable service providers would be free of such burden.[61]

VI. UNITED STATES CASE LAW ON VOIP

States are trying hard to maintain jurisdiction over the regulation of VoIP. In September 2003, the Wisconsin Public Service Commission notified a California based VoIP service provider that it needed certification, as would any other telephone company under Wisconsin state law, and without such certification, the company's bills for voice calls in Wisconsin would be void.[62] While later overruled, the Minnesota

---

58. Arbogast, *supra* note 35, at 292.

59. *Id.*

60. *Id.*

61. *Id.* at 293.

> [I]t will have to justify why it imposed USF obligations on some Title [One] providers and not others. This may be particularly difficult to do if we get to a point where both cable and telephone companies are providing broadband transmission services on a standalone basis . . . and only one is saddled with a USF obligation . . . . The more difficult question for the FCC will be whether to remove broadband Internet access provided over the telephone network from the contribution base for USF or whether to extend USF obligations to other broadband services, particularly cable . . . .

Id. *See also Regulatory Aspects of Voice Over Internet Protocol: Hearing Before the Subcomm. on Commercial and Administrative Law of the H. Comm. on the Judiciary*, 108th Cong. 81 (2004) (statement of Steven M. Cordi, Deputy Controller, State of Maryland) (discussing a proposed law on taxation of VoIP services).

> [It] would create an unprecedented tax preference for one form of voice communications services (VoIP), and it would place other traditional land-line and wireless voice providers at a substantial competitive disadvantage because they would still be obligated for existing state and local taxes. Such a policy creates an unlevel playing field that works against those providers not employing VoIP and will cause a misallocation of resources in the economy. Enacting such a discriminatory arrangement will undoubtedly create additional calls for federal intervention in an effort to "level the playing field."

Id. at 3.

62. Paolino, *supra* note 14, at 2–3.

> Companion bills introduced in the Wisconsin Legislature during the 2003–04 session . . . addressed possible regulation of VoIP by exempting broadband service from state and local

Department of Commerce filed a complaint with the Minnesota Public Utilities Commission stating that Vonage Holdings Corporation,[63] which was offering local and long distance services without the certificate of authority required by Minnesota statutes, failed to provide adequate 911 service or pay any of the required fees and that Vonage had not filed Commission approved rates for services.[64] In *Vonage*, the Court found no congressional intent to regulate VoIP, and until Congress clarifies this issue, states may not regulate an information service provider as if it were a telecommunications provider.[65]

In September 2003, California's Public Utilities Commission informed six VoIP service providers[66] that they needed to obtain operator business licenses to do business in California.[67] Florida attempted to use a rarely

---

> regulation. The bills, as introduced, excluded broadband service (defined to include voice conveyance) from the definition of "telecommunications service." The substitute amendments, however, defined "broadband service" as a telecommunications service, but excluded it from the telecommunications services that are subject to regulation. Both bills failed to pass.

Id. at 3.

63. *See supra* notes 21 and 27 and accompanying text.

64. Paolino, *supra* note 14, at 3. The Minnesota Public Utilities Commission ruled that Vonage offers the same services as an inclusive phone service and claims to be able to fully replace the services offered by their current telephone company. The Commission ordered Vonage to comply with Minnesota statutes and rules pertaining to telephone service including paying 911 fees.

65. Vonage v. Minn. Pub. Util. Comm'n, 290 F. Supp. 2d 993, 1003 (D. Minn. 2003). The Court noted that where federal policy is to encourage certain conduct, which in this case is to keep the Internet and information services unregulated, state law discouraging that conduct must be preempted. The Court stated that "until Congress speaks more clearly on this issue, Minnesota may not regulate an information service provider such as Vonage as if it were a telecommunications provider." *Id.*

While this holding is not binding on any other state, it is persuasive authority and the highest court ruling thus far on the matter of VoIP regulation. *See also* U.S. CONST. art. VI. Article VI empowers Congress to preempt state law. Preemption occurs when (1) Congress enacts a federal statute that expresses its clear intent to preempt state law; (2) there is a conflict between federal and state law; (3) "compliance with both federal and state law is in effect physically impossible"; (4) federal law contains an implicit barrier to state regulation; (5) comprehensive congressional legislation occupies the entire field of regulation; (6) state law is an obstacle to the "accomplishment and execution of the full objectives of Congress." *Vonage*, 290 F. Supp. 2d at 997 (citing Louisiana Pub. Serv. Comm'n v. FCC, 476 U.S. 355, 368–69 (1986)).

66. Brand X Internet Services v. FCC, 345 F.3d 1120, 1132 (9th Cir. 2003) (holding that a different cable broadband internet service was not a "cable service" but rather was part "telecommunications service" and part "information service"), *rev'd* 545 U.S. 967 (2005) (holding that the FCC's conclusion that Internet service providers do not provide "telecommunications servic[e]" is a lawful construction of the Telecommunications Act).

67. Paolino, *supra* note 14, at 3. Under the California Public Utilities Code, a telephone line is defined as "any asset used to facilitate telephone communication" and specifically defines a "telephone service." California is expected to be one of the more influential states in VoIP regulation. *Id*. California Public Utility Commissioner Carl Wood has stated that regulators have an obligation to oversee telephone services, whether they travel over traditional lines or the Internet: "The advent of [Internet phones calls] does not in and of itself exempt it from telecommunications regulation." DARLINGTON, *supra* note 3, at 9.

enforced "substitution communication" tax on VoIP, but the Florida state government failed to act in time, and now the Florida Department of Revenue must develop new rules to enforce the tax.[68]

In May 2004, the New York State Public Service Commission subjected Vonage Holdings to state regulation by classifying it as a telephone company.[69] In its interpretation of the Telecommunications Act of 1996, the New York State Public Services Commission held that Vonage was a "telephone service"[70] and that New York's regulation of Vonage's service is not preempted by federal law.[71] Because of this, the Commission found Vonage to be subject to regulation under New York state law.[72] The difference in interpretation between different jurisdictions when confronted with similar regulatory issues exemplifies the challenges the FCC faces in its future regulation of VoIP services.

---

68. Paolino, *supra* note 14, at 3–4. The 1985 Florida law taxed businesses that bypassed local telephone networks by establishing their own communications networks. The law was designed to ensure that these businesses paid the same taxes as businesses using regular telephone systems. *Id.* at 4.

69. State of New York Pub. Serv. Comm'n, *Complaint of Frontier Telephone of Rochester, Inc. Against Vonage Holdings Corporation*, *Case 03-C-1285* (May 21, 2004), http://www.dps.state.ny.us.

> The company is in the business of affording "telephonic communication for hire." Vonage's service allows subscribers to make and receive voice communications with any other telephone subscribers in the world, and its service is marketed as a substitute for "home phone service." Vonage owns and manages equipment . . . that is used to connect Vonage's customers to the customers of other telephone corporations via their public networks, as necessary. This equipment constitutes a "telephone line" under the PSL [New York Public Service Law] and is used to facilitate the provisioning by Vonage of telephonic communication to customers. Accordingly, Vonage is a "telephone corporation" under our jurisdiction.

Id. at 10.

70. *Id.*

71. *Id.* Vonage argued that state regulation was preempted because:

> (1) Vonage offers information under federal law; (2) state regulation of information services and the Internet is inconsistent with federal law; (3) the interstate and intrastate aspects of its service cannot be segregated; or (4) its service is an Internet application and Congress declared that the Internet should be free from regulation.

Id. at 10–11. In response, the New York State Public Service Commission declared that "Vonage service is not an information service . . . despite claims to the contrary." *Id.* at 11. The Commission then referred to the Telecommunications Act of 1996, which defines "telecommunications" as "the transmission, between or among points specified by the user, of information of the users choosing without change in form or content of the information as sent and received." 47 U.S.C. § 153 (43) (1998).

Based on this definition, it was deemed that a Vonage customer's voice is transmitted "without any change in form or content of the conversation" and is therefore a "telecommunications service." New York Pub. Serv. Comm'n., at 12.

72. New York Pub. Serv. Comm'n., at 12.

VII. INTERNATIONAL REGULATORY APPROACHES TO VOIP

Just as the FCC in the United States faces regulatory questions concerning VoIP, many other countries around the world are meeting the challenge of designing regulatory frameworks for this emerging technology. In Canada, the Canadian Radio-television and Telecommunications Commission released a nonbinding decision stating that any company[73] supplying customers with 10-digit telephone numbers and allowing them to dial and receive calls on the same equipment as traditional telecommunications services are subject to the same regulations as traditional telephone companies.[74] In England, the Office of Telecommunications (Oftel) generally has a technology-neutral approach to regulation.[75] However, Oftel has a split approach to the regulation of VoIP.[76] It regulates those VoIP services that fall under the category of public voice telephony, but not all VoIP services are considered public voice telephony.[77] While the United Kingdom has taken a hybrid approach

---

73. Telecom Decision, Canadian Radio-television and Telecommunications Comm'n [CRTC] 2005-21, *available at* http://www.crtc.gc.cal/archive/ENG/Decisions/2005/dt2005-21.htm. See DARLINGTON, *supra* note 3, at 6, for a discussion on Telus of British Columbia, which spent $200 million building an IP-based next generation network, Bell Canada Enterprises, which announced its own three-year $200 million plan to build an IP-based network, Allstream, which plans to build a $135 million network, and Shaw Communications of Calgary and Roger Communications of Toronto, which also plan to enter the VoIP business soon.

74. Paolino, *supra* note 14, at 4. *See also* Press Release, Canadian Radio-television and Telecomm. Comm'n, CRTC Initiates Proceedings on VoIP Services, Issues Preliminary View (Apr. 7, 2004), http://www.crtc.gc.ca/eng/NEWS/RELEASES/2004/r040407.htm.

> In the Commission's preliminary view, voice communications services using IP that provide universal access to and/or from the Public Switched Telephone Network and utilize telephone numbers that conform to the North American Numbering Plan . . . have characteristics that are functionally the same as circuit-switched voice telecommunications services. Consistent with its principle of technological neutrality, it is the Commission's preliminary view that its existing regulatory framework should apply to VoIP services, including its determinations related to forbearance.
>
> [T]o the extent that VoIP services provide subscribers with access to and/or from the Public Switched Telephone Network, along with the ability to make and/or receive calls that originate and terminate within the geographic boundaries of a local calling area as defined in the incumbent local exchange carriers' tariffs, they should be treated for regulatory purposes as local exchange services, and be subject to the regulatory framework governing local competition.

Id.

75. DIR. GEN. OF TELECOMM., OFFICE OF TELECOMM., FREQUENTLY ASKED QUESTIONS ON THE REGULATION OF VOICE OVER INTERNET PROTOCOL SERVICES (Apr. 2, 2002), http://www.ofcom.org.uk [hereinafter OFTEL REPORT]. Technology neutral means that Oftel attempts to remain impartial and not promote or discourage any particular technology. *Id.* at 3.

76. *Id.* at 4–5.

77. *Id.* According to Oftel, VoIP services should be regulated under the public voice telephony category if any of the following criteria apply:

to the regulation of VoIP, the government of Panama has taken a more extreme position and has blocked VoIP services completely.[78]

On April 1, 2002, the Republic of India, after initially adopting a policy which did not allow VoIP services to be offered,[79] decided to open up its telecommunications market to VoIP service providers.[80] The government decided that it would allow VoIP services under the existing licensing framework, thus minimizing disturbances to the current regulatory and policy frameworks.[81] It took the view that there is a distinct difference between PSTN-based real time telephony and Internet telephony, which is based on client server technology and thus cannot be compared to conventional telephony service derived from PSTN.[82] While the Indian

---

- The service is marketed as a substitute for traditional Public Switched Telecommunication Network (PSTN) voice services; or
- the service appears to the customer to be a substitute for public voice telephony
- the service provides the customer's sole means of access to traditional circuit switched PSTN.

However, where a VoIP service is clearly being offered as an adjunct to a traditional circuit switched PSTN voice telephony service or as a secondary service, it is likely not to be considered as public voice telephony. *Id.* at 5. *See also* DARLINGTON, *supra* note 3, at 11 (discussing regulatory balance and access to emergency services with VoIP).

78. 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, 641–42 (2004).

> In an apparent attempt to stem telephone company revenue losses due to Internet telephony, the government of Panama decreed in November 2002 that twenty-four User Datagram Protocol (UDP) server ports be blocked by all Internet service providers. The ports included those that were commonly used for VoIP services, as well as other purposes, presumably with the idea that these too could be used to circumvent the national telephone network in making telephone calls.

Id.

79. TELECOM REGULATORY AUTH. OF INDIA, RECOMMENDATIONS ON OPENING UP OF INTERNET TELEPHONY (Sept. 5, 2002), http://www.trai.gov.in/trai/upload/Recommendations/60/IP_Recommendations.htm.

> In regard to Internet Telephony, the Government had taken the following decision in 1999 and the same was incorporated in the National Telecom Policy document released the same year: "The Internet Telephony shall not be permitted at this stage. However, the government will continue to monitor the technological innovations and their impact on national development and review this issue at an appropriate time."

Id.

80. Alam Nur-Ul, *VoIP Deregulation in India: Gov't Allows Internet Telephony*, REUTERS, Mar. 18, 2002, *available at* http://www.siliconindia.com/tech/tech_pgtwo.asp?newsno=14323&newscat=Technology.

> After examining the matter, the government has now decided to accept the (TRAI)'s recommendations . . . . India is set to end the monopoly enjoyed by the recently privatised Videsh Sanchar Nigam Ltd. over the international calls business on April 1 and throw it open to unlimited private competition.

Id.

81. TELECOM REGULATORY AUTH. OF INDIA, *supra* note 79.

82. *Id.*

government has said that it will not require licensing of VoIP service providers, it may assess a tariff on VoIP service providers based on the "toll quality"[83] of the VoIP network.[84] This is another possible hybrid approach to the regulation of VoIP for other countries around the world to follow.

In Europe, The Internet Telephony Consortium[85] European Task Force submitted a comment in support of the European Commission and its position not to regulate Internet telephony at this time.[86] Similar to the views of the FCC in the United States, the Internet Telephony Consortium European Task Force believes that premature regulation of Internet telephony would hinder innovation in the field.[87]

---

83. *Id.*

84. TELECOM REGULATORY AUTH. OF INDIA, *supra* note 79.

> The tariff for the VoIP based toll quality service offered by facility based operators should be same as that for equivalent PSTN based services. For VoIP based lower than toll quality service, the tariff should be lower than that for the toll quality service . . . . The Authority would initially let the market determine the tariff for lower than toll quality service. The Authority would also forbear with respect to tariff for Internet Telephony offered by ISP's over public Internet because of sufficient competition in the ISP market, where the entry barrier is practically nonexistent.

Id.

85. Internet Telephony Consortium European Regulatory Task Force, Comment to the European Commission Concerning the Status of Voice on the Internet under Directive 90/388/EEC, http://ec.europa.eu/comm/competition/liberalization/legislation/commen11_en.html#1.

> The Internet Telephony Consortium (ITC) is a group that examines the technical, economic, strategic, and policy issues that arise from the convergence of telecommunications and the Internet. The ITC is comprised of Member Companies and academic researchers who represent the various interests associated with the Internet, Internet Telephony and the telecommunications industries. . . . The long term growth of the ITC is to enable the growth of new forms of mediated, integrated multimedia communication spanning the Internet and the telecommunications infrastructures. . . . The Internet Telephony Consortium European Regulatory Task Force is a group formed specifically to respond to the Notice by the Commission concerning the status of voice . . . . The views expressed in this comment represent the views of the members of the Task Force and should not be construed as representing the position of the ITC, member companies or individuals not participating on the Task Force or the Massachusetts Institute of Technology. Member companies . . . include Hewlett Packard, Mediatrix Peripherals, Inc., Natural Microsystems, Netspeak Corp., Nokia, Telecom Italia and Telia.

Id.

86. *Id.*

87. *Id.*

> To regulate Internet telephony at this time, would harm its development . . . . If in the future, the Union does choose to regulate Internet telephony, it must keep in mind that the Internet is a dynamic field and that traditional regulatory models based on voice telephony are likely to be inappropriate.

Id.

Japan is facing mounting pressure to address the regulatory implications of VoIP.[88] The current regulatory structure that was intended to "handicap the country's dominant telecom company so that rivals could grow"[89] is no longer necessary because many other competitors have penetrated the market.[90] Norio Wada, the president of Nippon Telegraph & Telephone Corp., recently said, "[W]e would like to ask for an urgent review of competition policy . . . . [W]e need to have the regulatory environment reviewed."[91]

VIII. ANALYSIS OF REGULATORY FRAMEWORKS

Currently, legislation regarding the regulation of VoIP is being debated in the United States Congress. In April 2004, Senator John Sununu[92] introduced a bill in the Senate regarding the regulation of VoIP.[93] Among other things, the stated purpose of the bill is to provide a clear structure for the jurisdictional and regulatory treatment of VoIP applications.[94]

In July 2004, the Senate Sub-Committee approved Senator Sununu's bill, but added amendments which allow states to collect certain access charges and collect universal service fund charges on VoIP service providers.[95] The bill is still undergoing revisions to satisfy state and local

---

88. Michiyo Nakamoto, *NTT Urges Review of Japanese Regulations: Former Monopoly Says Restrictions 'No Longer Fair,'* FIN. TIMES, Nov. 11, 2004, at 1.

89. Phred Dvorak, *NTT [Nippon Telegraph & Telephone Corp.] Can't Afford to Ignore Web Telephony*, WALL ST. J., July 15, 2004, at B4.

90. *Id.*

> The company (Nippon Telegraph & Telephone Corp.(NTT)) is only allowed to provide phone services within a single prefecture, or state, in Japan. . . . In order to offer its new service, NTT had to contract another company to handle the network links between prefectures in Japan and get government permission to do it. Obstacles like that have NTT executives arguing that Japan's telecom environment is now changing so fast that old rules of competition should no longer apply since the industry giants no longer have the market to themselves. "The old restrictions are a real drag on us."

Id.

91. Nakamoto, *supra* note 88. The former telecom monopoly [NTT] reported a six percent decline in revenues for the fixed line unit in the first half and said it was suffering because of changing technology and incursions into its core markets by rivals. *Id.*

92. Senator John Sununu is a Republican from New Hampshire and was elected to the Senate in 2002. U.S. Senator John E. Sununu of New Hampshire, http://www.sununu.senate.gov/biography.html (last visited Feb. 23, 2006).

93. VoIP Regulatory Freedom Act of 2004, S. 2281, 108th Cong. (2004) (proposing to exempt VoIP from most regulations applicable to other telephone companies). The original bill gave sole regulatory authority to the federal government, but amendments to the bill would give states the authority in certain areas, including 911 services, universal service programs, and intrastate access charges. *See also* Paolino, *supra* note 14, at 4.

94. VoIP Regulatory Freedom Act of 2004, S. 2281, 108th Cong. (2004).

95. Paolino, *supra* note 14, at 4.

governments, while continuing to meet the congressional mandate to leave the Internet free from regulation.[96]

As congressional leaders continue to debate the most practical approach to VoIP regulation, they can look to other countries' approaches to VoIP regulation for guidance. Obviously, the Panamanian approach of banning Internet telephony altogether is neither a viable nor practical approach for the United States to adopt.[97] Likewise, as technological and legal issues have begun to overlap, it is increasingly apparent that the "hands off"[98] regulatory approach currently favored by the FCC towards Internet technologies is unable to both address state concerns of regulation and tax revenues and maintain a market-based, pro-competition, and pro-emerging technology environment.[99] The United States should either adopt a regulatory framework that falls between the Panamanian approach and completely unregulated VoIP services or adopt a completely new regulatory structure with Internet applications at its center.

Although Canada has adopted a black-line rule that customers with ten digit telephone numbers are subject to the same regulations as traditional telephone companies, this is arguably not the best approach for the United States.[100] Such a rule would imply that VoIP services are

---

96. VoIP Regulatory Freedom Act of 2004, S. 2281, 108th Cong. (2004). *See also* Advanced Internet Communications Services Act of 2004, H.R. 4757, 108th Cong. (2004). The bill, which has not received approval from the House Subcommittee on Telecommunications and the Internet, was introduced by Representative Cliff Stearns (R-Florida). It would give the FCC exclusive regulatory authority, but neither the FCC nor the states would be able to regulate the rates or terms of service. *See also* Paolino, *supra* note 14, at 4.

97. Whitt, *supra* note 78, at 641–42.

98. Vonage v. Minn. Pub. Util. Comm'n, 290 F. Supp. 2d 993, 998-1000 (D. Minn. 2003) (discussing the legislative and political history behind the FCC's regulatory approach to Internet services); *see also* Thompson, *supra* note 7, at 70.

99. Howard Gleckman & Catherine Yang, *Telecom Taxes: Is A Breakthrough Near?*, BUS. WEEK, Dec. 13, 2004, at 51.

> While Congress agreed to temporarily restore a ban on state taxes on monthly Internet access charges, anti-tax lawmakers failed to bar state levies on Internet phone calls . . . . [T]wo new initiatives may set the stage for dramatic changes in the way all telecom services are taxed . . . . [I]t may mean that VoIP, now tax-free in most locales, will be hit by the same taxes as traditional phone services. At stake: $20 billion a year in taxes . . . . The goal: Simplify levies while taxing all phone services equally-no matter what technology delivers them . . . . Local officials in Virginia are close to a deal that could be a model for a national solution . . . . The Virginia agreement would [put] a flat 5% tax on all telecom services-including VoIP . . . . Even if Virginia provides a blueprint, a national agreement will be a stretch. . . . "The Baby Bells are stuck under regulatory and tax rules that VoIP outfits don't deal with. And they want a level playing field . . . ." [Congressional] tax cutters will try again to ban state and local VoIP taxes next year . . . and may soon push a broad rewrite of U.S. telecommunications law [and] toss the tax dispute into a massive political whirlwind . . . .

Id. at 51.

100. Paolino, *supra* note 14. Canadian Radio-television Comm'n, *supra* note 74 (discussing the

"telecommunications services" and subject to regulation under Title Two of the Telecommunications Act of 1996.[101] This kind of rule would be contrary to the FCC's regulatory policy regarding the Internet and its applications.[102]

Legislators and regulators find themselves challenged to (1) make Internet technologies adapt to the already defined brick and mortar services and technologies environment that exists under the Telecommunications Act of 1996 and other statutes, and (2) classify and define VoIP within these current legacy regulations.[103] Great Britain and India have both adopted this approach. These two countries decided to take a hybrid approach to regulating VoIP services under their current telecommunications regulatory frameworks.[104] Similarly, the United States has been trying a hybrid approach of classifying and defining VoIP within current legacy regulations. Unfortunately, this approach does not adequately address the needs of states, local governments,[105] telecommunications companies, or the congressional policy of leaving the Internet free from regulation.[106]

As an alternative, the United States could create a completely new framework for regulating the Internet and those technologies that utilize the Internet to support their applications. Richard S. Whitt[107] believes that attempting to impose the current, outmoded legal system on the Internet and other IP applications is "flawed, damaging, and ultimately [a] doomed approach."[108] He believes that a "Horizontal Networks (Layers)" approach is better than the "Vertical Rules (Silos)" approach that is currently in

---

CRTC's view of regulating voice communications services using Internet Protocol).

101. Telecommunications Act of 1996, 47 U.S.C. § 153(46) (1997) (defining "telecommunications," "telecommunications services," and "information services").

102. Vonage v. Minn. Pub. Util. Comm'n, 290 F. Supp. 2d 993, 998 (D. Minn. 2003) (discussing the FCC's adoption of a regulatory scheme that distinguishes between a common carrier that offers basic transmission services and a common carrier that offers enhanced services). *See also* Thompson, *supra* note 7, at 70 (discussing the policy of minimal regulation under the Clinton Administration and Congress).

103. Whitt, *supra* note 78, at 589.

104. OFTEL REPORT, *supra* note 75, at 5 (discussing which VoIP services should be regulated by Oftel (Great Britain) under the public voice telephony category).

105. Gleckman & Yang, *supra* note 99, at 51. "In most states, telephone taxes are set by local governments. And they are wary of letting states collect the levy, even if governors promise to return the revenue." *Id.*

106. *See id.*

107. Mr. Whitt is Senior Director for Global Policy and Planning at MCI, Inc., where he has spent the past ten years formulating and advocating the Company's public policy positions regarding federal communications regulation and Internet law. Mr. Whitt represented nascent online companies such as CompuServe and Prodigy prior to the advent of the commercial Internet. Whitt, *supra* note 78, at 587.

108. *Id*. at 590.

place.[109] Currently, regulators in the United States and around the world are attempting to classify VoIP under their existing telecommunications paradigm.[110] Some experts insist that the nation's communications policies need to be reformulated with the Internet at the center because communications policy will inevitably become a mere subset of Internet policy.[111] During his tenure, former FCC Chairman Michael K. Powell[112] expressed his desire to embrace "Internet-premised, Internet-based IP type communications" and tailor a set of regulatory clothing uniquely for it.[113]

---

109. *Id*.

> [Horizontal Networks (Layers)] For decades, packet-switched data communications networks have been constructed around several fundamental organizing principles, including the "protocol layering" concept (networks employ different functional rules, or protocols, arranged in layered stacks) and the "end-to-end network" concept (dumb networks support intelligent applications). Together protocol layering and end-to-end principles have become the building blocks of the Internet. In the resulting layered protocol stack, the IP resides in the "middle" logical layers, with the physical network facilities at layers below and user applications and content at layers above. As technology has evolved, existing networks and markets have begun converging to common IP platforms. Key inherent aspects of this IP-centric New World Order include blurred distinctions between services, lack of relevant geographic boundaries, and a mesh of virtual interconnected networks. Moreover this network architecture tends to shape and drive business fundamentals.
>
> [Vertical Rules Silos] The Communications Act and implementing rules divide up the landscape based on traditional service, technology, and industry labels, such as wireline telephony service, wireless telephony service, cable television service, broadcast television and radio service, and satellite broadcast service. These divisions assume clear, unwavering distinctions, with different categories defined by the assumed static characteristics of discrete services or networks. The result is an inflexible approach of isolated "buckets" or "silos" governed by black-and-white, all or nothing thinking.
>
> The resulting clash between data networks constructed of horizontal protocol layers, and the legal and regulatory artifice of vertical silos, inevitably leads to uncertainty, confusion, and gridlock . . . . [L]aws and regulations fail to reflect the reality of the converging markets and networks. Policymakers attempting to impose current legal standards on the Internet quickly run afoul of its governing dynamic, which shatters all the past service, definitional, technological, and geographic limitations . . . [and] forcing legacy regulations on IP services and networks stifles the creativity and innovation that is the essence of the Internet. Outmoded regulations tend to impose unnecessary legal restrictions in some cases, as well as overlook significant market concentration issues in other cases.

Id. at 591.

110. *See supra* notes 24, 43, 73–87 and accompanying text.

111. Whitt, *supra* note 78, at 591–92. *See also* Kevin Werbach, *A Layered Model for Internet Policy*, 1 J. ON TELECOMM. & HIGH TECH. L. 37, 39–40 (2002) (discussing traditional communications policy).

112. Whitt, *supra* note 78, at 620 n.99. *See also* FCC IP-Enabled Services Rules, WC Docket No. 04-36 (proposed Feb. 12, 2004), at 2, *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-28A1.pdf [hereinafter FCC Rules]. "[W]e simply cannot contort the character of the Internet to suit our familiar notions of regulation. We will not dumb down the genius of the [w]eb to match the limited vision of a regulator." *Id*.

113. Whitt, *supra* note 78, at 620–21 (citing other regulators and public officials who are advocates of the "layered model" of regulation).

Several "layers models" have been proposed by a number of commentators, with many seeing a logical grouping of four different protocol layers.[114] The goal of a layers model is to "create a framework that logically divides a network (and services provided over that network) so that policy can then be applied in a more consistent manner."[115] The philosophy behind the layers design is to have decentralized control, autonomy, and efficiency.[116] The Internet has the built in characteristic of layered architecture, which means that it is transparent to the applications that run on it (i.e., does not associate data with application file types).[117] In support of this layers concept, Professor Solum describes two corollaries and two theses, which state that regulations should be based on the individual layer which is being regulated and that there should be minimal layer crossing regulation.[118] Additionally, the architecturally transparent

---

> [Robert Pepper, Chief of Policy Development at the FCC] We're seeing a significant shift in the telecom industry's underlying technology as we move from circuits to packets and from a traditional architecture to one where all forms of traffic ultimately ride over IP . . . . Now, there are people in Washington who don't understand a great deal about the technology or even the concept of the layered approach communications networks and services . . . . It's a completely different way of thinking about our networks. In many respects it really comes down to an issue of educating people.

Id.

> [Brett Perlman, former Commissioner of the Public Utility Commission of Texas] [T]he FCC could meet its goals of encouraging broadband competition and network investment "if it were to apply a 'layered model' to broadband infrastructure . . ." [and] that the layered model "has been discussed in several recent legal and technical articles and is consistent with the underlying protocols governing the Internet."

Id. at 621.

114. *Id.*

> [I]t might suffice to distinguish four layers: content, applications, network and data link. Content describes the actual information transmitted (e.g., voice conversation, e-commerce transactions, video streams). Applications denotes the nature of the service provided (e.g. voice, video). Data links, also called interconnection points, are used for routing protocols and packet structure, fiber, copper, and coaxial cable.

Id. at 621–22.

115. *Id. See also* Douglas C. Sicker, Further Defining a Layered Model for Telecommunications Policy 12 (2002), http://tprc.org/papers/2002/95/LayeredTelecomPolicy.pdf.

116. Sicker, *supra* note 115.

117. LAWRENCE LESSIG, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 34–37 (Random House 2001) (2001). For example, the TCP/IP protocol is independent from the underlying computer hardware or operating system. Whitt, *supra* note 78, at 625–26.

118. Whitt, *supra* note 78, at 625–26.

> Corollary One: The Principle of Layers Separation
>
> Regulation should not violate or compromise the separation between layers designed into the basic infrastructure of the Internet, so that one layer of the Internet would differentiate the handling of data on the basis of information available only at another layer, absent a compelling regulatory interest.

design of the Internet is such that the higher layers avoid replicating the lower layers, which are designed to serve all the higher layers.[119] In Professor Solum's view, regulation can only be as effective as permitted by the design of the Internet. The nature and limitations of legal regulations will be determined by the code being implemented as opposed to the particular type of technology.[120]

As with any theory or analytical tool, the layers theory has some drawbacks. Some of its unanswered questions include translating the theory into effective policy rules, devising empirically based tests, establishing tough enforcement mechanisms, implementing a new framework, and determining how to grant regulators and policymakers the authority to implement these changes.[121] While these drawbacks deserve attention and resolution, most academics agree that these are not insurmountable concerns.[122]

> Corollary Two: The Principle of Minimizing Layer Crossing
>
> If compelling regulatory interests require a layer crossing regulation, "that regulation should [minimize] the distance between the layer at which the law aims to produce an effect and the layer directly targeted by legal regulation."
>
> The Transparency Thesis: "The fact that layer violating regulations inherently damage the transparency of the Internet, combined with the fact that Internet transparency lowers the barriers to innovation, provides compelling support for the principle of layer separation."
>
> . . . .
>
> The Fit Thesis: "The fact that layer crossing regulations result in an inherent mismatch between the ends such regulations seek to promote and the means employed implies that layer crossing regulations suffer from problems of over breadth and under inclusion . . . ." To avoid these problems, Internet regulators are required to abide by the principle of minimizing layer crossing regulations.

Id.

119. *Id*. at 626.

> The lower layer, by design, cannot or is not supposed to discriminate the payload from the upper layer based on its content, or modify the content . . . . The lower layer is transparent with respect to the upper layer. Transparency means that the Internet is a neutral platform; anyone can develop network applications with or on top of the TCP/IP protocol, with no permission necessary.

Id. See also Lawrence B. Solum & Minn Chung, *The Layers Principle: Internet Architecture and the Law* (Univ. of San Diego Sch. of Law Publ. Law & Legal Theory Research Paper No. 55, June 2003), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=416263#PaperDownload.

120. Whitt, *supra* note 78, at 627.

121. *Id.* at 618–19.

> (1) developing the optimal way to translate valuable insights into concrete and effective policy rules, (2) devising empirically based tests for market power and monopoly issues, (3) establishing tough enforcement mechanisms to minimize delays and "gaming of the process", (4) defining and implementing a realistic transition strategy to a comprehensive new framework, and (5) determining how to grant policymakers broad authority to make the necessary comprehensive statutory and regulatory changes.

Id.

122. *Id.* at 619.

IX. CONCLUSION

Nearly twenty-five years ago the FCC first set out a strategy that led to the separation of basic telecommunications services that should not have been done.[123] It has become increasingly apparent that the distinction between "telecommunication services" and "information services" may no longer be a viable paradigm. The regulatory needs of VoIP challenge this dichotomy. The United States has the opportunity to lead the world in the regulation of VoIP services. While not necessarily the perfect solution, the layers approach offers a viable alternative to the current regulatory structure. Whereas Canada has decided to work within its current regulatory framework, the United States could overhaul its current telecommunications policy so that it is more in line with the rapidly developing technologies of the Internet.

Whether the FCC decides to continue its "hands off" regulatory approach[124] or to redesign the regulatory framework for telecommunications, it will not be done under Chairman Powell, who left the position in March of 2005.[125] The new chairman will have to balance safeguarding basic communications services with promoting the entrance of new service providers to enhance competition.[126]

On March 18, 2005, Kevin J. Martin was designated Chairman of the FCC by President Bush.[127] While Martin and Powell clashed on local phone rules, Martin has shown that he understands the need for regulation when market place competition has not fully flourished.[128] One of the

---

123. *Id.* at 652.

124. See *supra* notes 7, 27–34, 42 and accompanying text for a discussion on the FCC's preference for a deregulatory environment in the telecommunications arena.

125. Yang, *supra* note 2, at 34 (discussing Michael K. Powell's regulatory approach, which he believed would boost competition among providers to bring Web, phone, and TV services to homes).

126. *Id.*

127. FCC Chairman Kevin J. Martin, http://www.fcc.gov/commissioners/martin/.

> Chairman Martin was nominated by President George W. Bush to a Republican seat on the Commission, and was sworn in on July 3, 2001. . . . Before joining the FCC, Martin was a Special Assistant to the President for Economic Policy. He served on the Bush-Cheney Transition Team and was Deputy General Counsel for the Bush campaign. Prior to joining the campaign, Martin was an advisor to FCC Commissioner Harold Furchtgott-Roth. He has also served in the Office of the Independent Counsel and worked as an associate at the Washington, DC law firm of Wiley, Rein & Fielding. Before joining Wiley, Rein & Fielding, Martin was a judicial clerk for U.S. District Court Judge William M. Hoeveler, Miami, FL. Martin received a B.A. from the University of North Carolina at Chapel Hill, a Masters in Public Policy from Duke University, and a J.D. from Harvard Law School. He is a member of the District of Columbia Bar and the Federal Communications Bar Association.

Id.

128. Yang, *supra* note 2, at 34.

biggest challenges facing the FCC is to ensure that cable services providers do not discriminate against third-party VoIP providers like Vonage.[129] Hopefully, there will be a sufficient amount of competition among new technologies in the future so that the FCC will be able to step aside.[130] Until that day comes, some form of regulation is needed to ensure a smooth transition to that future paradigm.[131]

Mustafa Haque[*]

---

129. *Id.* at 35.
130. *Id.*
131. *Id.*

* J.D. (2006), Washington University School of Law. The author was the Managing Editor of the Global Studies Law Review in 2005–2006 and is now a corporate associate at Katten Muchin Rosenman LLP in New York City.