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# Imposing Geographical "Locateability" for Voice Over Internet Protocol

Andrea W.M. Louie
*New York Law School Class of 2006*

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ANDREA W.M. LOUIE

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ABOUT THE AUTHOR: Andrea W.M. Louie earned her J.D. from New York Law School in 2006.

## I. INTRODUCTION

In November 1993, after being abducted from a suburban shopping mall in Rochester, New York, eighteen year-old Jennifer Koon was driven to an alley, beaten, raped, and shot to death.[1] Ms. Koon was able to call 911 using her cell phone, but because she was unable to report her location while being attacked, the 911 dispatcher could only listen helplessly for the next twenty minutes. The technology was not available to locate Ms. Koon by tracking the location of her cell phone. Since the implementation of "Enhanced 911" ("E911") for cell phones in 1996, the Federal Communications Commission ("FCC") has taken steps towards solving this problem. E911 is an emergency telephone feature that allows 911 operators to immediately retrieve the physical address of the calling party by matching his telephone number.[2] Today, the Automatic Location Identification ("ALI") technology employed by E911 allows 911 dispatchers to determine a cell phone caller's geographical location without dialogue.[3]

A decade later, the FCC faces another public safety problem involving E911: Voice over Internet Protocol ("VoIP") technology, used by many people for their telephone service, also fails to provide location information. In 2005, a series of widely publicized incidents involving VoIP alerted citizens, telecommunications participants, and policymakers to some serious flaws in the current VoIP emergency services system.[4] These incidents highlight the fact that emergency services for VoIP rely heavily on the cooperation of users who voluntarily register their location information, and must re-register new location information each time they move their portable VoIP telephones. In one news report, a

1. Anne Marie Squeo, *No Signal — Cellphone Hangup: When You Dial 911, Can Help Find You?*, WALL ST. J., May 12, 2005, at A1; *Tenants, Others Were Shot in Head*, BALT. SUN, Apr. 21, 1995, at 3A.

2. *See* 911 Services, http://www.fcc.gov/911/ (last visited Oct. 13, 2006); Enhanced 911 — Wireless Services, http://www.fcc.gov/911/enhanced/ (last visited Oct. 13, 2006).

3. The advent of ALI has already allowed traditional telephone systems to automatically determine the caller's geographical location. *See* DALE N. HATFIELD, FCC, A REPORT ON TECHNICAL AND OPERATIONAL ISSUES IMPACTING THE PROVISION OF WIRELESS ENHANCED 911 SERVICES 4, http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6513296239 (last visited Nov. 13, 2006) (describing how ALI works).

4. In one incident, a woman in Florida repeatedly dialed 911 using VoIP when her infant stopped breathing. Instead of being connected to emergency service dispatchers by the VoIP service provider, she repeatedly reached a non-emergency sheriff's recording. *Woman Got Non-Emergency Police Number When She Dialed 911*, WESH.COM, May 7, 2005, http://www.wesh.com/news/4461222/detail.html; Ben Charny, *Deadly Delay on Vonage 911?*, CNET NEWS.COM, May 9, 2005, http://news.com.com/2100-1037_3-5700493.html; *VoIP and 911: Florida Baby's Death Adds to Pressure on Vonage*, TMCNET, May 10, 2005, http://www.tmcnet.com/usubmit/2005/May/1143124.htm. The woman finally contacted a 911 dispatcher using a neighbor's phone, but by the time emergency personnel arrived, her infant had already died. *VoIP and 911, supra*. A similar 911 call failure took place that same month in Houston, Texas, when a teenager unsuccessfully tried to contact 911 using VoIP after her parents were shot in their house by intruders. Ben Charny, *Texas Sues Vonage Over 911 Problem*, CNET NEWS.COM, Mar. 22, 2005, http://news.com.com/2100-7352_3-5630118.html; *see also* IP-Enabled Services: E911 Requirements for IP-Enabled Service Providers, First Report and Order and Notice of Proposed Rulemaking, 20 F.C.C.R. 10,245, 10,246 n.2 (June 3, 2005) [hereinafter E911 Requirements First R&O] (citing various incidents of 911 call failure).

senior vice president of Vonage, one of the most popular broadband VoIP service providers in the United States, directly attributed a particular 911 call failure to the customer's failure to register the phone's location.[5] Even where customers have chosen to manually enter their address and callback phone number in their VoIP service provider's database, calls may sometimes still fail to arrive at a 911 center or Public Safety Answering Point ("PSAP"), taking a circuitous route to administrative offices rather than going straight to emergency dispatchers. In both instances, critical life-saving time is lost while the customer tries to articulate his whereabouts or find alternate means of reaching emergency aid. Dispatchers also may not be able to send help if calls get disconnected before callers can inform dispatchers of their location. The situation worsens when the person needing emergency help is, for example, incapacitated and cannot speak, or lost in a blizzard with no sense of direction.[6] The scenarios in which accurate and up-to-date location information becomes indispensable are numerous.

Although the FCC has achieved a high success rate in deploying E911 for cell phones, it initially declined to impose upon VoIP the requirements traditionally demanded of common carriers that are classified as telecommunications services. However, not long after the aforementioned incidents, the FCC ordered that all VoIP service providers must reliably deliver all 911 calls to the customer's local emergency operator as a standard, rather than optional, feature of the VoIP service.[7] The FCC also announced its intention to adopt, in a future order, "an advanced E911 solution that includes a method for determining the customer's location without the customer having to self-report this information."[8] If the FCC requires VoIP service providers to support 911 emergency services that could locate 911 callers automatically, irrespective of whether users choose to register their information, this would require geographical fixedness, or "locateability." While such locateability is undoubtedly a beneficial feature when it comes to saving lives, the availability of location information may also present a great privacy risk to individuals. Because VoIP communication is a computerized technology, it would be possible for the government or private entities to

5. Sam Diaz, *Cell Phones, VoIP Service Put 911 Emergency Responders to the Test*, SAN JOSE MERCURY NEWS, May 2, 2005.

6. For example, the New York State Wireless Enhanced 911 Project estimates that twenty-five percent of calls received from cell phones (which, like VoIP telephones, are portable) are from people who are unable to describe their location to emergency dispatchers. The New York State Wireless Enhanced 911 Project: Lessons Learned, http://www.its.dot.gov/pubsafety/new_york_state_wireless_enhanced_lessons_learnd.htm (last visited Nov. 20, 2006).

7. *See* Press Release, FCC, Commission Requires Interconnected VoIP Service Providers to Provide Enhanced 911 Service: Order Ensures VoIP Consumers Have Access to Emergency Services (May 19, 2005), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-258818A1.doc [hereinafter E911 Press Release] (announcing E911 rules for VoIP); *see also* E911 Service, 47 C.F.R. § 9.5 (2005) (codifying the requirement of reliable E911 service for VoIP); E911 Requirements First R&O, *supra* note 4 (adopting rules for E911 service for VoIP).

8. E911 Press Release, *supra* note 7.

assemble data detailing the locations of private citizens at any given moment. In light of these privacy concerns, what considerations should be taken into account when deciding whether to impose locateability on a new communications technology such as VoIP?

This Note contends that despite raising privacy issues, the FCC should impose locateability on VoIP for the sake of public safety. Part II of this Note surveys the history of 911 emergency services in the United States and the technology underlying VoIP. Part III examines the history of the FCC's regulation of telecommunications services and information services. This section also discusses the problems that arise from regulating VoIP and how these problems limit the FCC's ability to impose 911 emergency services and locateability obligations on VoIP. Part IV argues that imposing locateability is necessary for meeting consumer expectations that VoIP will support 911 emergency services comparable to that of traditional telephones, as well as for serving the government's heightened interest in promoting public safety. Given the privacy concerns regarding locateability, new legislation could be enacted to protect consumer privacy rather than forgo the benefits of imposing locateability. Finally, Part V of this Note concludes that given the urgency of promoting public safety in order to protect human lives, it is imperative that the FCC impose locateability on VoIP service providers.

## II. LONGSTANDING 911 EMERGENCY SERVICES FOR TELEPHONY AND THE EMERGING NEW TECHNOLOGY OF VoIP

### *A. A Short History of 911*

Unofficially, it can be said that the first emergency phone call was made in 1876 by Alexander Graham Bell, when he spilled some battery acid on his clothes.[9] He called out, "Mr. Watson, come here, I want you!"[10] Upon hearing Bell's words over the phone set they were testing, his assistant, Thomas Watson, rushed to his aid.[11]

Officially, the first three-digit ("9-9-9") emergency telephone system was implemented in Great Britain in 1937 to support police, fire, and emergency medical services.[12] In the United States, the National Association of Fire Chiefs suggested devising a single number for reporting fires in 1957, creating the cata-

9. *See* Darren Handler, *An Island of Chaos Surrounded by a Sea of Confusion: The E911 Wireless Device Location Initiative*, 10 VA. J.L. & TECH. 1, ¶ 5 (2005); Dispatch Monthly, The History of 911, http://www.911dispatch.com/911/history/index.html (last visited Oct. 13, 2006).

10. Handler, *supra* note 9; Dispatch Monthly, *supra* note 9.

11. Handler, *supra* note 9; Dispatch Monthly, *supra* note 9.

12. Handler, *supra* note 9, at ¶ 6; Peter P. Ten Eyck, *Dial 911 and Report a Congressional Empty Promise: The Wireless Communications and Public Safety Act of 1999*, 54 FED. COMM. L.J. 53, 55 (2001); Dispatch Monthly, *supra* note 9.

lyst for a nationwide emergency telephone number.[13] The proposal received a nod from the government in early 1967, when the President's Commission on Law Enforcement and Administration of Justice recommended establishing a single number nationwide for reporting emergency situations.[14] By the end of the year, the President's Commission on Civil Disorders sought a solution from the FCC, which then began working out the details of the system with AT&T.[15] They likely chose the digits "9-1-1" as the emergency help code because it was a sequence that was brief, easily remembered, and could be quickly dialed.[16] Furthermore, it was a unique number that had never previously been issued as an area code.[17] Congress later passed legislation to codify 911 as the nationwide standard emergency number.[18] In 1968, Speaker of the Alabama House of Representatives Rankin Fite completed the first ever 911 call in Haleyville, Alabama.[19]

There are two main components to 911 emergency services. First, PSAPs with personnel and equipment must be in place to receive 911 calls.[20] Second, telecommunications carriers must provide consumers with switching and signaling equipment that recognizes the 911 code and relays calls for help to the PSAPs.[21] Originally, PSAP operators receiving 911 calls were trained dispatchers who gathered information about the nature and location of the emergency by asking the caller precise questions.[22] This conversation between operator and caller, however, wasted crucial time as dispatchers tried to ascertain the caller's location, often without any guarantee of accuracy. The need for a more efficient system was clear.

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13. *See* Dispatch Monthly, *supra* note 9; *see also* National Emergency Number Association, The Development of 9-1-1, http://www.nena.org/PR_Pubs/Devel_of_911.htm [hereinafter NENA Development] (last visited Oct. 13, 2006).

14. *See* Dispatch Monthly, *supra* note 9; NENA Development, *supra* note 13.

15. *See* Dispatch Monthly, *supra* note 9; NENA Development, *supra* note 13. Before the 1984 break-up of the Bell System, or "Ma Bell" as it was nicknamed, AT&T (the American Telephone and Telegraph Company) was the major telephone carrier. *See* The History of AT&T, http://www.att.com/history (last visited Oct. 13, 2006).

16. NENA Development, *supra* note 13. *But see* Dispatch Monthly, *supra* note 9 (noting "there is rampant speculation" on why those digits were chosen).

17. NENA Development, *supra* note 13.

18. *Id.*

19. Dispatch Monthly, *supra* note 9. Supposedly, Fite and U.S. Representative Tom Bevill, the recipient of Fite's call, exchanged greetings, hung up, and had coffee and doughnuts. *Id.* Photographs of this milestone in 911 history can be found at http://www.911dispatch.com/911/history/haleyville_album.html (last visited Oct. 13, 2006).

20. Ten Eyck, *supra* note 12, at 56.

21. *See id*.

22. *See id*. at 56–57.

In 1980, AT&T successfully ran its first full E911 system, complete with both Automatic Number Identification ("ANI") and Automatic Location Identification ("ALI") capabilities.[23] The advent of ANI and ALI capabilities allowed the traditional and wireless telephone systems to automatically report data about the calling party's phone number and the physical origin of the call to emergency dispatchers, in addition to delivering the conversation itself. These features of E911 reduce time spent by a 911 dispatcher trying to elicit this information through dialogue.[24] Today, E911 is employed widely by traditional and wireless carriers in compliance with the FCC regulations mandated for both types of media.[25]

Effective 911 and E911 services have long been justified by a desire to improve and further promote public safety. In a national policy statement issued in 1973, the White House's Office of Telecommunications recognized the public safety benefits of establishing a uniform emergency calling system.[26] The statement also encouraged the nationwide adoption of 911 and provided for the establishment of a Federal Information Center to assist in planning and implementing such a national 911 system.[27] It further attributed the necessity of having 911 to the "characteristics of modern society, i.e., increased incidences of crimes, accidents, and medical emergencies, inadequacy of existing emergency reporting methods, and the continued growth and mobility of the population."[28]

### *B. The Emergence of VoIP*

Put simply, VoIP is a technology that enables telephony, or voice communications. It allows users to transmit voice in real time over the Internet with a

23. *See* Dispatch Monthly, *supra* note 9.

24. *See generally* HATFIELD, *supra* note 3, at 3–4 (discussing the efficiency that ANI and ALI provide to emergency calls).

25. Phase II of the FCC's wireless 911 program was scheduled to be completed by December 31, 2005. *See* FCC Commercial Mobile Radio Services, 47 C.F.R. § 20.18(g)(1)(v) (2006). However, the FCC has granted waivers to the schedule, subject to quarterly reporting requirements. *See* Enhanced 911 — Wireless Services, *supra* note 2. Although many of the nation's wireless carriers have successfully outfitted their phones with emergency locateability capabilities, over 6000 state and locally operated PSAPs are under no legal obligation to comply with federal E911 deadlines. *See* U.S. GEN. ACCOUNTING OFFICE, UNEVEN IMPLEMENTATION OF WIRELESS ENHANCED 911 RAISES PROSPECT OF PIECEMEAL AVAILABILITY FOR YEARS TO COME 10 (2003), http://www.gao.gov/new.items/d0455.pdf [hereinafter GAO REPORT]. As of September 1, 2005, fewer than half of the PSAPs in the United States had upgraded their facilities to be E911-compatible. Verizon Wireless, Wireless Issues: Enhanced 911, http://aboutus.vzw.com/wirelessissues/enhanced911.html (last visited Sept. 22, 2006). Consequently, "there is no ultimate nationwide deadline for full implementation of wireless E911 services." GAO REPORT, *supra*, at 2. Thus, even though users of cellular phones today may be geographically located through global positioning systems ("GPS") and other methods, many PSAPs are not yet equipped to support E911 features.

26. *See* NENA Development, *supra* note 13.

27. *Id.*

28. *Id.*

broadband connection[29] and ordinary telephone handsets.[30] Because an individual may use VoIP to make voice communications that functionally resemble traditional telephone calls, from the perspective of users VoIP seems to be a medium that could effectively replace traditional telephone services.[31] Some VoIP service providers have even asserted that they can offer services with the "same functionality and reliability as circuit-switched services," which operate by dedicating a fixed quantity of bandwidth for the duration of the call while the transmission passes through a number of switches.[32]

### *1. Packet-Switching Technology: How VoIP Came Into Existence*

In its most rudimentary form, VoIP finds its roots in the second half of the twentieth century, as early as 1964.[33] Paul Baran,[34] a researcher and developer at the RAND Corporation, first conceptualized "packet-switching" or "IP networking"— the underlying technology on which VoIP is based.[35] Information

29. Although the FCC initially used the term "advanced telecommunications," more recently it has used the term "broadband." John T. Nakahata, *Broadband Regulation at the Demise of the 1934 Act: The Challenge of Muddling Through*, 12 COMMLAW CONSPECTUS 169, 170 & n.6 (2004). Today, "broadband" encompasses services such as digital subscriber line ("DSL"), cable modem, wireless Internet, and satellite, and refers to "high-speed transmission services, which allows [sic] users to access the Internet and Internet-related services at significantly higher speeds than traditional modems." FCC, Internet, http://www.fcc.gov/cgb/internet.html (last visited Mar. 12, 2007); *see also* Joseph Gratz, Recent Development, *Voice Over Internet Protocol*, 6 MINN. J.L. SCI. & TECH. 443, 443–44 (2004); Konrad L. Trope & Paula K. Royalty, *Current Legal Issue Surrounding the Regulation of Voice Over Internet Protocol*, J. PROPRIETARY RTS., May 2004, at 10.

30. Rob Frieden, *The FCC's Name Game: How Shifting Regulatory Classifications Affect Competition*, 19 BERKELEY TECH L.J. 1275, 1301 (2004).

31. *See, e.g., id.* at 1300–01 ("[C]onsumers increasingly use VoIP as a direct substitute for dial-up local and long distance telephone service"); Mark D. Schneider, Marc A. Goldman & Kathleen R. Hartnett, *The USTA Decisions and the Rise and Fall of Telephone Competition*, 22 COMM. LAW 1, 23–24 (2004) ("VoIP will shortly become a true marketplace alternative to traditional telephone service."). This article also briefly discusses some flaws which could hinder consumer usage of VoIP. *Id.* at 23; *see also* Sherille Ismail, *Parity Rules: Mapping Regulatory Treatment of Similar Services*, 56 FED. COMM. L.J. 447, 450 (2004) ("Consumers increasingly view all telecommunications services as similar services, even though carriers may use different transmission platforms and offer different rate plans.").

32. *See* Cherie R. Kiser & Angela F. Collins, *Regulation on the Horizon: Are Regulators Poised to Address the Status of IP Telephony?*, 1 COMMLAW CONSPECTUS 19, 21, 23 (2003).

33. *See* Timeline, Voice over IP (Internet Telephony), http://www.cybertelecom.org/voip/Index.htm#tim [hereinafter Timeline] (last visited Sept. 20, 2006) (citing Paul Baran, On Distributed Communications Networks, IEEE Transactions on Systems (Mar. 1964) (referred to as the "first paper on secure packetized voice")).

34. Baran pioneered work on distributed communications networks, the basic element in Internet architecture. *See generally* Internet Pioneers: Paul Baran, http://www.ibiblio.org/pioneers/baran.html (last visited Feb. 15, 2007) [hereinafter Internet Pioneers].

35. *See* Packet Switching, http://www.livinginternet.com/i/iw_packet.htm (last visited Nov. 20, 2006); *see also* IP-Enabled Services, Notice of Proposed Rulemaking, 19 F.C.C.R. 4863, 4869–70 & nn.25–26 (Feb. 12, 2004), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-28A1.pdf [hereinafter IP-Enabled Services NPRM].

of all kinds, including voice, is digitized and broken into smaller "packets" of data that are sent separately through the Internet and reassembled in their analog form when they are received at their destination.[36] These packets contain content as well as headers with identifying data, such as the Internet Protocol ("IP") addresses assigned to the computers to and from which information is sent.[37]

The Internet re-routes all packets to their destinations as quickly as possible, irrespective of direction or content.[38] Unlike circuit-switching, which uses linear, end-to-end data transmission along a wire, packet-switching is multi-directional[39] and allows packets to be sent in bursts, rather than continuously.[40] This kind of IP network enables more efficient transmission of data than the circuit-switched networks used by traditional telephones because resources (i.e., the "path" between the parties engaged in the conversation) need not be tied up for the entire duration of a call when, for example, the amount of information being transferred does not require the full bandwidth available.[41] The IP network does not establish permanent or exclusive paths between points; instead it deals with each packet individually to determine the best route for that packet and ensure fast delivery.[42]

As more sophisticated technology developed, packet-switching was eventually used to efficiently transmit various types of data, including voice. However, VoIP only became commercialized when VocalTec Communications Ltd. introduced Internet telephony software in the 1990s.[43] By 2004, VoIP was used in more than 400,000 households in the United States alone.[44] Its usage is projected to spread to 12.1 million households by 2009.[45] As VoIP increases in popularity and evolves into the twenty-first century, the industry is continuing its efforts to provide a service that matches or surpasses the quality and functionality of traditional telephony.

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36. *See* Gratz, *supra* note 29, at 444; Trope & Royalty, *supra* note 29, at 10.

37. Rich Haglund, *Applying Pen Register and Trap and Trace Devices to Internet Communications: As Technology Changes, Is Congress or the Supreme Court Best-Suited to Protect Fourth Amendment Expectations of Privacy?*, 5 VAND. J. ENT. L. & PRAC. 137, 140 (2003).

38. Gratz, *supra* note 29, at 444; IP-Enabled Services NPRM, *supra* note 35, at 4869.

39. *See* Trope & Royalty, *supra* note 29, at 10.

40. *See* Internet Pioneers, *supra* note 34.

41. *See* IP-Enabled Services NPRM, *supra* note 35, at 4869. For example, when the parties of a telephone call have a pause in the conversation, "no data is being transmitted, but the line is still in use and unavailable [because no other calls can be made on that line]. This represents a waste in capacity (bandwidth)." Internet Pioneers, *supra* note 34.

42. IP-Enabled Services NPRM, *supra* note 35, at 4869 & nn.25–26; Internet Pioneers, *supra* note 34.

43. *See* Timeline, *supra* note 33.

44. R. Alex DuFour, *Voice Over Internet Protocol: Ending Uncertainty and Promoting Innovation Through a Regulatory Framework*, 13 COMMLAW CONSPECTUS 471, 476 (2005) (citing Roger Cheng, *Battle Is On For Web-Calling Market*, WALL ST. J., Oct. 20, 2004, at C2).

45. DuFour, *supra* note 44, at 476.

### *2. Communications Over VoIP*

When a user makes a traditional long-distance telephone call, he picks up the receiver and dials a number. The call goes first to the local telephone company, or local exchange carrier, which then switches the call over to a long-distance carrier of the user's predetermined choice.[46] The long-distance carrier typically charges the user a connection fee and a per-minute charge, plus various taxes and surcharges.[47] All of these switches take place over the "public switched telephone network" ("PSTN") — the framework for traditional telephony, which is based on circuit-switched technology.

To consumers, VoIP telephony is virtually indistinguishable from traditional telephony because they can send and receive calls as they would from any other telephone. Behind the scenes, however, VoIP changes the sequence of exchanges necessary for placing a phone call.[48] This sequence varies depending on the kind of VoIP being used, which differs from provider to provider. There are three types of VoIP: "phone-to-computer," "computer-to-computer," and "phone-to-phone."[49] The FCC regulates each type according to its relationship and interactions with the existing PSTN-based structure of traditional telephony.

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46. Laura DiBiase, *Beyond the Quill: Long Distance — Long Gone?*, AM. BANKR. INST. J., Apr. 2004, at 42, 42.

47. *Id*.

48. Gratz, *supra* note 29, at 444 ("The key difference is the way the call gets from one phone to the other.").

49. DiBiase, *supra* note 46, at 42; Kiser & Collins, *supra* note 32, at 21.

Phone-to-computer VoIP, with its unsettled legal status, will be the focus of this Note. The status of the other two types of VoIP, however, is more clearly established. In 2004, the FCC ruled that computer-to-computer VoIP, in which users place calls using VoIP telephones with software or hardware installed directly into their computers, qualified as information services and should be left unregulated. *See generally* Petition for Declaratory Ruling that pulver.com's Free World Dialup is Neither Telecommunications Nor a Telecommunications Service, Memorandum Opinion and Order, 19 F.C.C.R. 3307 (2004). Rather than be subject to the host of regulatory obligations and charges imposed on traditional telephony, they would be subject only to the FCC's general authority to supervise communications under its ancillary jurisdiction in Title I of the Telecommunications Act of 1996. For the FCC's reliance on its Title I authority, see, for example, Regulatory and Policy Problems Presented by the Interdependence of Computer and Communication Services and Facilities, Final Decision and Order, 28 F.C.C.2d 267, 268–70 (1971); Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), Final Decision, 77 F.C.C.2d 384, 430–35 (1980) (noting jurisdiction over enhanced services under the ancillary jurisdiction of Title I on the grounds that the enhanced services under consideration "constitute the electronic transmission of writing, signs, signals, pictures, etc., over the interstate telecommunications network"). *See also* California v. FCC, 905 F.2d 1217, 1240 (9th Cir. 1990) (stating that Title I jurisdiction is not an independent source of regulatory authority; it confers only power ancillary to the Commission's specific statutory responsibilities, which in the case of enhanced services means ancillary to FCC's Title II authority over common carrier services). In these peer-to-peer configuration services, such as Skype and Free World Dialup ("FWD"), the connection between the user and the call's recipient is made entirely via the Internet; the call does not interact with the PSTN at all. DiBiase, *supra* note 46, at 42.

On the other hand, in response to AT&T's petition in 2004 for a declaratory judgment that its PSTN to PSTN traffic was merely an information service not subject to regulation, the FCC ruled that phone-to-phone VoIP was a telecommunications service subject to regulation. *See* Petition for Declaratory Ruling

The FCC and the Internet telephony industry have devoted great attention to phone-to-computer (or computer-to-phone) VoIP, in which a call initiates via VoIP and the Internet, but terminates at a PSTN where the recipient uses a circuit-switched telephone (or vice versa).[50] Packetizing the analog data into digital form, the VoIP service provider sends the call through the Internet to a local telephone company in the geographical area where the user's voice data will be reassembled back into analog form and received.[51] As long as a VoIP service provider has PSTN "gateways" that connect locally to the call recipient's area, the call is considered local and the provider will not have to pay fees for long-distance exchanges.[52] These savings in interstate carrier access charges[53] are then passed on to the user, resulting in lower charges for VoIP service than for traditional telephony service.[54] Gateways are located all over the world, providing VoIP coverage within the same local area (local IP calls) or between different calling areas, states, or countries (interexchange, interstate, or international IP calls).[55] Because many calls which would be subject to long-distance charges are transformed into local calls, VoIP thus enables efficient transmission of voice data that can also be more affordable than traditional telephony.

At least for some purposes, one court has classified this type of VoIP as an "information service," exempting service providers such as Vonage from state reg-

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that AT&T's Phone-to-Phone IP Telephony Services are Exempt from Access Charges, 19 F.C.C.R. 7457, 7465 (2004), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-97A1.pdf (reasoning that because there is no net change in data form or content, and "end-user consumers do not order a different service, pay different rates, or place and receive calls any differently than they do through AT&T's traditional circuit-switched long distance service," AT&T offers a telecommunications service and is subject to access charges). In "phone-to-phone" VoIP, the user places a call by using a traditional telephone receiver and dialing a long-distance number. Although the call is initially carried by an LEC, the voice data is then digitized and sent through the Internet before reaching another LEC in the geographical area where the user's voice data is to be reassembled back into analog form and received. DiBiase, *supra* note 46, at 42; Gratz, *supra* note 29, at 444–45. This type of VoIP call goes through the PSTN at both the start and end of the call, but they avoid having to pass through a wireline long-distance carrier. *Id*. The call is considered "local" because the Internet connection allows the data to "leap" from one local PSTN to another local PSTN. *Id*.

50. DiBiase, *supra* note 46, at 42.

51. *Id*.; *see also* Gratz, *supra* note 29, at 444–45.

52. Gratz, *supra* note 29, at 444–45.

53. *See id*. ("Access charges are fees paid by long distance carriers to local exchange carriers for connecting calls to or from the local exchange carrier's consumers.") (citing 47 § C.F.R. 69 (2004) (detailing the system of access charges for long-distance service)).

54. VoIP has been especially cost-effective in business call centers. Matthew Hamblen, *Users Cite VoIP's Convenience, Cost Savings*, COMPUTERWORLD, Feb. 11, 2005, http://www.computerworld.com/networkingtopics/networking/voip/story/0,10801,99712,00.html. For example, at Delta Air Lines, Inc., the rollout of VoIP at its seventeen call centers will save the company more than ten million dollars on its previous thirty-five million dollar annual budget for operating the communications technology in its call centers. *Id*.

55. Kiser & Collins, *supra* note 32, at 21.

ulatory schemes and other charges traditionally levied on traditional telephony.[56] The FCC, however, has not yet declared whether this type of VoIP is a telecommunications or information service under the Communications Act.[57] This is the most controversial type of VoIP because the call is initiated using the Internet, but the call also traverses the PSTN, suggesting that neither the telecommunications nor information classification may be applied perfectly.[58]

Unlike traditional telephony, VoIP relies on an underlying Internet-based platform and uses packet-switching technology to transmit data. Circuit-switched telephones automatically convey location information; a call recipient's location is easily retrievable since he must physically be in the same place where his telephone is hooked up in order to receive the call. In contrast, packet-switching enables VoIP users to receive voice data in reassembled form anywhere in the world, as long as they can establish a connection to the Internet. In other words, VoIP users are not limited to using their VoIP telephones in the same place; they can relocate their units to another city, state, or country without changing subscription plans. Geographical fixedness is thus not required for sending or receiving packetized data through the Internet.

## III. VoIP: A GLITCH IN THE FCC'S PATTERN OF PIGEONHOLE REGULATION

Locateability in telecommunications services is important to the FCC because of public safety concerns. Under the Telecommunications Act of 1996 ("1996 Act"), telecommunications services providers, as common carriers,[59] must adhere to certain public interest obligations, including provision of E911 emergency services and non-discriminatory access to 911.[60] Although VoIP, like telecommunications, enables telephony, it does not fall perfectly under the 1996 Act's definition of "telecommunications services." Therefore, it is difficult to require 911 emergency services under that same rubric. Nevertheless, on May 19, 2005, the FCC adopted an order mandating compliance by VoIP service providers in implementing certain procedures to improve the existing flawed 911 system.[61] The order also stated that at some future date, the FCC would eventually require implementation of full E911 services, including ALI capabilities, independent of

56. *See* Vonage Holdings Corp. v. Minn. Pub. Utils. Comm'n, 290 F. Supp. 2d 993, 999 (D. Minn. 2003).

57. E911 Requirements First R&O, *supra* note 4, at 10,255.

58. *See infra* Part III.B (discussing how VoIP does not fit perfectly into any existing regulatory pigeonhole).

59. "The term 'common carrier' or 'carrier' means any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or in interstate or foreign radio transmission of energy. . . ." 47 U.S.C. § 153(10) (2000).

60. *Id*.; *see also* Kiser & Collins, *supra* note 32, at 40–41.

61. *See* E911 Requirements First R&O, *supra* note 4.

whether users chose to register their location information.[62] Although this step towards the full suite of emergency services available in traditional telephony is commendable, the current regulatory efforts of the FCC do not go far enough to promote public safety in providing an alternative to traditional telephony.

### *A. The Communications Act: The Current Regime*

The Communications Act of 1934 ("Communications Act"), which created the FCC and authorized its jurisdiction over telecommunications, set up a framework of "silos," or categories, for the regulation of telecommunications. Under this framework, the FCC must first determine into which silo a new service fits before imposing regulations upon it.[63] Historically, the most relevant factor in determining how a service will be regulated has been its technological mode of transmission, in "contemplat[ion of] specific applications and business models."[64] This pigeonhole-style method of regulation requires classifying services into all-or-nothing, mutually exclusive, either-or categories.[65] Thus, services regulated under the FCC's domain typically fit squarely into one of the established categories, each of which has its own set of regulations and requirements.

During the 1970s and 1980s, a series of major decisions in the FCC's "Computer Inquiry"[66] amended the Communications Act and drew a distinction be-

62. *Id.* at 10,246 ("We intend in a future order to adopt an advanced E911 solution for interconnected VoIP that must include a method for determining a user's location without assistance from the user as well as firm implementation deadlines for that solution.").

63. Nakahata, *supra* note 29, at 170–71.

64. *Id*. at 170.

> CMRS, for example, is statutorily defined as a for-profit radio service, with equipment that is capable of being moved. Common carriage requires a transmission by wire or radio. A cable system requires the one-way transmission of video programming over a system that has "closed transmission paths and associated signal generation, reception and control equipment." Broadcasting is specifically defined as the dissemination of "radio communications intended to be received by the public, directly or by the intermediary of relay stations."

*Id.* at 170–71 (footnotes omitted).

65. Frieden, *supra* note 30, at 1276 ("Before the onset of the Internet, the FCC easily categorized services into mutually exclusive regulatory classifications.").

66. *See, e.g.*, Regulatory and Policy Problems Presented by the Interdependence of Computer and Communication Services and Facilities, Tentative Decision, 28 F.C.C.2d 291, 295 (1970), Final Decision and Order, 28 F.C.C.2d 267 (1971) [hereinafter Computer I Final Decision], *aff'd in part sub nom.* GTE Serv. Corp. v. FCC, 474 F.2d 724 (2d Cir. 1973), *decision on remand*, 40 F.C.C.2d 293 (1973); Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), Final Decision, 77 F.C.C.2d 384 (1980) [hereinafter Computer II Final Decision], *recon.*, 84 F.C.C.2d 50 (1980), *further recon.*, 88 F.C.C.2d 512 (1981), *aff'd sub nom.*, Computer & Comm. Indus. Ass'n v. FCC, 693 F.2d 198 (D.C. Cir. 1982), *cert. denied*, 461 U.S. 938 (1983); Amendment of Section 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry), Phase I, Report and Order, 104 F.C.C.2d 958 (1986), *modified on recon.*, 2 F.C.C.R. 3035 (1987), *further recon.*, 3 F.C.C.R. 1135 (1988), *second further recon.*, 4 F.C.C.R. 5927 (1989), Phase II, Report and Order, 2 F.C.C.R. 3072 (1987), *further recon.*, 4 F.C.C.R. 5927 (1989), *rev'd in part sub nom.*, California v. FCC, 905 F.2d 1217 (9th Cir. 1990), *on remand*, 6 F.C.C.R. 7571 (1991), *vacated in part and remanded*, California v. FCC, 39 F.3d 919 (9th Cir. 1994); *see also* Computer III Further Remand Proceedings: Bell Operat-

tween "basic services" and "enhanced services." Generally, basic services referred to traditional telephone communications, while enhanced services referred to data processing.[67] The Communications Act was further amended when Congress passed the 1996 Act in order to encourage competition through the "rapid deployment of new telecommunication technologies."[68] A key goal of the amendment was to encourage competition for emerging Internet services such as VoIP.[69]

The 1996 Act defined the term "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."[70] In addition, it replaced the old labels of "basic" and "enhanced" with two new categories of services: "telecommunications services" and "information services."[71] Both categories are applicable to VoIP and its classification problem as discussed in Part II.B.2 of this Note.

First, the 1996 Act defined a "telecommunications 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."[72] Carriers offering telecommunications services include Incumbent Local Exchange Carriers ("ILECs"), Competitive Local Exchange Carriers, Interexchange Carriers, and CMRS carriers — all of which supply a conduit for circuit-switched voice communications.[73] ILECs, for example, are established local carriers that used to be part of the Bell System and are subject to significantly more regulations under the Communications Act than newer market entrants such as Competitive Local Exchange Carriers.[74] Second, the 1996 Act defined an "information service" as "the offering of a capability for generating, acquiring, storing, trans-

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ing Company Provision of Enhanced Services, Notice of Proposed Rulemaking, 10 F.C.C.R. 8360 (1995), Further Notice of Proposed Rulemaking, 13 F.C.C.R. 6040 (1998).

67. *See* Rosemary C. Harold, *Cable Open Access: Exorcising the Ghosts of "Legacy" Regulation*, 28 N. KY. L. REV. 721, 733 (2001). Basic services were defined as "the common carrier offering of transmission capacity for the movement of information" or "a pure transmission capability over a communications path that is virtually transparent in terms of its interaction with customer supplied information." Computer II Final Decision, *supra* note 66, 77 F.C.C.2d at 419–20 (noting that data processing or other computerized activity can be components of a basic service if used solely to facilitate the movement of information). Enhanced services were viewed as adding value to basic telecommunications. 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, 210–11 (2003).

68. Telecommunications Act, Pub. L. No. 104–104, 110 Stat. 56 (1996).

69. *See* 47 U.S.C. § 157 (2000).

70. 47 U.S.C. § 153 (43).

71. 47 U.S.C. § 153 (20), (43); *see also* Gratz, *supra* note 29, at 446–47.

72. 47 U.S.C. § 153 (46).

73. Ismail, *supra* note 31, at 450; *see supra* note 64 (describing CMRS).

74. ILEC is "[a] term used to refer to a Bell Operating Company." DEBORAH A. LATHEN, FCC, BROADBAND TODAY 77 (1999) (Glossary), *available at* http://www.fcc.gov/Bureaus/Cable/Reports/broadbandtoday.pdf; *see also id.* at 56 nn.106–07.

forming, processing, retrieving, utilizing, or making available information via telecommunications," not including use of such capability for the management or operation of a telecommunications system or service.[75]

In passing the 1996 Act, Congress explicitly articulated its intent "to preserve the vibrant and competitive free market that presently exists for the Internet . . . unfettered by Federal or State regulation."[76] The major difference between the two categories of services is that telecommunications services are heavily regulated, while information services are not. Notably, states are permitted to regulate telecommunications services, whereas their ability to regulate information services is limited.[77] For example, states have no power to collect or regulate the collection of access charges for voice communications that use the Internet as their conduit.[78] Furthermore, the FCC has determined that because Internet access service is predominately interstate in nature, it is therefore outside state jurisdiction.[79] Any attempt by states to regulate information services is trumped by this federal statute.[80] Thus, the FCC has maintained a "light touch"[81] on the Internet in the last several decades,[82] purposefully allowing it to prosper.[83]

But as the Internet and resulting IP-enabled services increase in popularity, should the FCC continue to adhere to this hands-off policy? If it follows the trajectory of past FCC Internet policy, IP-enabled services and competition should be allowed to flourish, but perhaps it should also consider the problems that may follow if it is left unregulated as an information service. Emergency call failures such as those reported in 2005 shout support for imposing regulations

75. 47 U.S.C. § 153(20).

76. 47 U.S.C. § 230(b)(2) (2000); *see also Vonage*, 290 F. Supp. 2d at 1001 ("By clearly separating information services from telecommunications services, the Court finds ample support for the proposition that Congress intended to keep the Internet and information services unregulated.").

77. Gratz, *supra* note 29, at 446; *see also Vonage*, 290 F. Supp. 2d at 994 ("Congress also differentiated between 'telecommunications services,' which may be regulated, and 'information services,' which like the Internet, may not.").

78. Kiser & Collins, *supra* note 32, at 27–28 (discussing how the FCC has long exempted Internet service providers and their predecessors — enhanced service providers — from the payment of interstate access charges).

79. *Id.* at 40.

80. Gratz, *supra* note 29, at 446.

81. DiBiase, *supra* note 46, at 42.

82. William E. Kennard, Chairman, FCC, Remarks Before the Federal Communications Bar, Northern California Chapter: The Unregulation of the Internet: Laying a Competitive Course For the Future (July 20, 1999), *available at* http://www.fcc.gov/Speeches/Kennard/spwek924.html ("For the past 30 years, the FCC has created a deregulatory environment in which the Internet could flourish.").

83. Congress intended to "provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition, and for other purposes." H.R. REP. NO. 104-458, at 1 (1996) (Conf. Rep.).

over VoIP in the name of public safety and reducing the frequency of similar tragedies in the future.

### *B. The Difficulty of Fitting VoIP into the Current Statutory Framework*

In a perfect world, new services would fit exactly and easily into either the telecommunications or information services category.[84] However, because the regulatory scheme created by the Communications Act pre-dates the nation's "Digital Migration,"[85] it is ill-prepared for the challenges of adapting new Internet technologies to its antiquated regime.[86] New Internet-based services challenge the static assumptions on which the existing structure is based and do not conveniently adhere to the telecommunications-information services dichotomy. Instead, packetized transmission of data provides a medium whereby the service may operate on an Internet platform like an information service while simultaneously resembling and functioning like a telecommunications service (e.g., radio or TV broadcast) once the data is received by the end user.

As a result of this dual character, Internet services have become mired in debates over how they should be classified. These "classification battles develop because . . . regulation by pigeonhole 'presumes that regulators can assign every service to a specific category.'"[87] With analog networks, classification is less complicated because "each service ha[s] discrete physical plant and outputs. For example, telephone networks carr[y] voice, while over-the-air television networks carr[y] broadcast video."[88] The existing policy does not "fully segregate content from the conduit used to deliver the content, with the result of applying different degrees of government oversight based on the method for delivering possibly the same content."[89] Consequently, it is difficult to accommodate services that may

84. *See* Rob Frieden, *Regulatory Arbitrage Strategies and Tactics in Telecommunications*, 5 N.C. J.L. & TECH. 227, 272 (2004) ("The FCC previously sought to establish a "bright line" separation between basic and enhanced services.").

85. Former FCC Chairman Michael K. Powell calls the Digital Migration "our movement from an analog world to a digital world — and the radical transformation that will come with it." Michael K. Powell, Chairman, FCC, The Age of Personal Communications: "Power to the People," Speech from The Journey to Convergence: Challenges and Opportunities: Symposium on Digital Migration, *in* 12 COMMLAW CONSPECTUS 139, 139 (2004).

86. Kevin Werbach, the founder of the Supernova Group, an independent technology analysis and consulting firm, has said that "the Internet is going to swallow telecommunications." Nakahata, *supra* note 29, at 172–73 (citing Kevin Werbach, *A Layered Model for Internet Policy*, 1 J. TELECOMM. & HIGH TECH L. 37, 45 (2002)). Earlier in his career, Werbach also served as Counsel for New Technology Policy at the FCC. *See Voice Over Internet Protocol (VOIP): Hearing Before the Senate Comm. on Com., Sci. & Tech.*, 108th Cong. (2004) (statement of Kevin Werbach), *available at* http://commerce.senate.gov/hearings/testimony.cfm?id=1065&wit_id=2993 [hereinafter *VoIP Hearing*].

87. Nakahata, *supra* note 29, at 172 (citing Werbach, *supra* note 86, at 40).

88. Nakahata, *supra* note 29, at 172–73 (citing Werbach, *supra* note 86, at 40).

89. Frieden, *supra* note 67, at 210.

straddle the lines, as services increasingly tend to do as a result of technological convergence.[90] Classification of such services under the Communications Act thus challenges the structural integrity of the existing framework.[91]

VoIP provides a perfect example of this dilemma. VoIP blurs the bright line between the "telecommunications services" and "information services" categories created by the amendments of the 1996 Act. Defining VoIP under the existing regulatory scheme is problematic because it spans across more than one of the enumerated categories.[92] On the surface, VoIP works just like traditional telephony — the user picks up a phone, dials a number, and the caller and the recipient can engage in voice communications in real time. However, because it operates on an Internet platform, VoIP necessarily breaks any data to be transmitted into packets before reassembling them for delivery. Thus, VoIP possesses content similar to traditional telephony while using an Internet conduit. This dual nature runs counter to the Communication Act's forking regulatory tracks for telecommunications services versus information services.

Under existing regulatory law, additional regulations could be imposed under one of two options: "heavy regulation vis-à-vis the existing telephone framework, or light regulation, more comparable to the Internet."[93] If VoIP were treated as a telecommunications service, like traditional telephony, then it would be subject to a host of common carrier obligations to serve the public inter-

90. Technological convergence is the digital age phenomenon of having different types of technology capable of performing the same tasks. *See generally* Kathleen Q. Abernathy, Commissioner, FCC, Overview of the Road to Convergence: New Realities Collide With Old Rules, Keynote Address at the CommLaw Conspectus, Institute of Communication Law Studies, and Federal Communication Commission Symposium on Digital Migration: The Journey to Convergence: Challenges and Opportunities, *in* 12 COMMLAW CONSPECTUS 133, 133 (2004) ("In this converged marketplace, cable operators are not only providing video services but broadband Internet access and voice over IP. Wireline telephone companies have become broadband data providers and are emerging as strong potential competitors in the video marketplace. Satellite and wireless providers are also part of this converged marketplace, and electric utilities want to participate in the broadband revolution by offering Internet access and telephony over power lines."). Here, for example, various technologies such as Internet, copper wire, and wireless may deliver voice communications.

91. Thus far the FCC has employed "sleight of hand [to subordinate] the telecommunications component . . . to the information transported over conventional copper wires." Frieden, *supra* note 84, at 272–73. This "establish[es] regulatory parity with unregulated cable modem services." Frieden, *supra* note 67, at 221. For example, digital subscriber lines ("DSL") or broadband access provided over copper telephone wires, was previously treated as a basic telecommunications service, notwithstanding the broadband upgrades. *See* Frieden, *supra* note 84, at 272–73; Frieden, *supra* note 30, at 1280. The FCC has now moved DSL into the informational services category, reasoning that it is necessary to maintain symmetrical treatment of services. *See* Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Report and Order and Notice of Proposed Rulemaking, 20 F.C.C.R. 14853 (2005), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-150A1.pdf; *see also* Frieden, *supra* note 84, at 272 (discussing proposal to classify DSL as an information service).

92. *See generally* Nakahata, *supra* note 29, at 172–73.

93. DuFour, *supra* note 44, at 473.

est, such as providing 911 emergency services.[94] Furthermore, because ILECs want to compete on even ground, they are urging the FCC to require VoIP service providers to comply with other existing common carrier obligations, particularly payment of interstate carrier access charges to the ILECs.[95] On the other hand, if the FCC classifies VoIP as an information service, then it would, by definition, be exempt from such common carrier obligations.[96] With lower costs than traditional telephony, VoIP would continue to enjoy the benefits of the "explosive growth of the young IP telephony industry,"[97] spurring further innovation and economic success.

### *C. How Should the FCC Treat VoIP and 911?*

It is unclear how, if at all, the FCC should regulate the nascent VoIP technology. Normally, the FCC fits emerging technologies into one of the Communication Act's pre-established pigeonholes, but the current framework seems imperfectly suited for tackling the regulation of VoIP.[98] Why should the FCC try so hard to make it fit into the existing regulatory scheme? The regulatory quandaries posed by this burgeoning industry have even stimulated support for completely restructuring the regulatory scheme set up by the Communications Act.[99]

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94. Other obligations imposed on common carriers include: equal access to long-distance carriers, number portability, resale and interconnection, providing access to individuals with disabilities, compliance with wiretapping requirements under the Communications Assistance for Law Enforcement Act ("CALEA") and related statutes, payment of federal and state universal service charges, payment of interstate carrier access charges to the ILECs, state entry regulation, tariffing and miscellaneous surcharges, and various consumer protection measures such as truth-in-billing compliance. *See* Kiser & Collins, *supra* note 32, at 40–41; 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, 662 (2004); *see also* Harold, *supra* note 67, at 748–49 (listing various common carrier obligations imposed on Internet access services that have been reclassified as "telecommunications services").

95. *See* Whitt, *supra* note 94, at 662. Currently, LECs and VoIP service providers are not be able to compete on a level playing field because of all the additional fees and other costly "trappings of telecommunications regulation" that LECs must pay for as regulated telecommunications services, and from which VoIP service providers, as deregulated information services, are exempt. Kiser & Collins, *supra* note 32, at 23. As a result, LECs operate at a disadvantage, with inevitably higher expenses. *See*, *e.g.*, Frieden, *supra* note 30, at 1303 ("[T]he now widespread offering of VoIP by unregulated ISPs and other ventures 'threatens to erode access revenues for LECs because it is exempt from the access charges that traditional long-distance carriers must pay.'" (citing Developing a Unified Inter Carrier Compensation Regime, 16 F.C.C.R. 9610, 9657 (Apr. 19, 2001)).

96. *See* Kiser & Collins, *supra* note 32, at 19–20.

97. *Id*. at 19. "The growth of this service has been fueled, in large part, by freedom from regulation." *Id.* at 20.

98. *See generally* Nakahata, *supra* note 29.

99. The existing statutory legal framework which governs how the FCC may regulate IP-enabled services such as VoIP could see a drastic makeover in the decades to come. As John T. Nakahata, Chief of Staff under former FCC Chairman William E. Kennard and Senior Legal Advisor under former FCC Chairman Reed Hunt, stated:

> [T]his familiar grand dame is afflicted with a terminal condition — Internet Protocol . . . Broadband — and IP-based services more generally — attack the fundamental skeleton of the Commu-

In fact, Michael Powell, former Chairman of the FCC, has called VoIP the "killer app[lication] for legal policy change."[100] As such, VoIP presents an opportunity to reevaluate why Congress, the FCC, and industry representatives advocate for and against certain regulatory decisions. In particular, this crossroads allows us to consider the appropriateness of imposing locateability as a mandatory feature of VoIP. Should VoIP be required to develop locateability in order to enable 911 emergency services that replicate the 911 services provided by traditional telephony? And, more broadly, should VoIP be regulated at all?

In the case of traditional telephones, locateability comes as a given because of the stationary nature of these devices; they are normally affixed in one location by the copper wire through which voice data is transmitted. Furthermore, legacy regulations — those that are passed down as a matter of convention — are "grounded in location and duration."[101] Calls made by traditional telephones begin and end in specified locations and are transmitted by dedicated resources for a finite amount of time.[102] Internet-based information services, however, are not inherently locateable. Since they were purposefully left unregulated, and not required to develop 911 emergency services, these services have never had any obligation to develop locating technology. Since VoIP has "no determinable location[,] . . . even if [it] is defined as a telecommunications service, none of the telecomm[unications] regulations translate to an Internet-based technology where location is irrelevant."[103]

In response to the FCC's May 2005 order,[104] some parties, including ILECs, supported the imposition of 911 requirements on VoIP, rationalizing that because VoIP resembles traditional telephony in function, it should be regu-

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> nications Act itself, eroding the framework around which the Act's regulations are built. Although legislative surgery has saved our grand dame before by adding the cable provisions of Title VI . . . and the local competition provisions of Title II . . . , the cure for broadband IP is a long way off — and may not even be effective without killing the patient and replacing her with something entirely new.

*Id.* at 169. Nakahata's diagnosis for broadband regulation holds especially true for VoIP.

In particular, there is growing support for a "horizontal" or "layers" model of telecommunications regulation, which regulates on the basis of functionally similar services, regardless of the underlying platform. *See*, *e.g.*, *id.* at 173; Frieden, *supra* note 67, at 210; Philip J. Weiser, *Toward a Next Generation Regulatory Strategy*, 35 LOY. U. CHI. L.J. 41 (2003); Whitt, *supra* note 94; *VoIP Hearing*, *supra* note 86.

100. Declan McCullagh, *FCC Chairman Calls for New Telecom Laws*, ZDNET.COM, Aug. 23, 2004, http://news.zdnet.com/2100-3513-22-5321042.html (quoting former FCC Chairman Michael K. Powell's remarks at the Progress and Freedom Foundation conference).

101. DuFour, *supra* note 44, at 480 (citing *VoIP Hearing*, *supra* note 86 ("The legacy telecom regulatory framework is based on the idea of a call that originates and terminates between subscribers at defined locations, through a circuit established by one or more carriers.")).

102. DuFour, *supra* note 44, at 480 (citing *VoIP Hearing*, *supra* note 86).

103. DuFour, *supra* note 44, at 480 (citing *VoIP Hearing*, *supra* note 86 ("None of these concepts necessarily endures in an IP world.")).

104. E911 Requirements First R&O, *supra* note 4.

lated in the same way as other telecommunications services. Thus, these parties argue, common carrier obligations such as 911 emergency services should be imposed.[105] However, because it operates on an Internet-based platform, VoIP service providers and other proponents of the freedom of the Internet advocate treating VoIP as an information service and leaving it unregulated.[106] One court has observed that these parties fear that "[s]tate regulation would effectively decimate Congress's mandate that the Internet remain unfettered by regulation"[107] and limit the speedy development of new technologies. And, once some regulations have been passed, these parties fear that the floodgates would open for even more regulations to follow. In addition to the 911 requirements already imposed on VoIP, for example, it seems CALEA law enforcement obligations will soon follow.[108]

The FCC has traditionally relied on legacy or historical classifications set up under the Communications Act to guide the regulation of different media. With the guidelines muddied by modern technological convergences, the FCC will likely need a fresh set of rules for determining when telecommunications providers should be subject to 911 emergency services obligations.

105. Arguing on this side of the debate are entities such as LECs as well as the state public utility commissions and public service commissions who regulate LECs and telephone services at the local level. Because using the Internet to carry telecommunications creates extraordinary cost savings and regulatory advantages for VoIP service providers, the goal of these parties is to scale back VoIP service providers to a level playing field. They have an interest in, for example, subjecting VoIP service providers to various access charges and ensuring that VoIP service providers contribute toward state universal service funds and provide reliable 911 emergency services for their residents. *See* Frieden, *supra* note 84, at 261–62 (discussing why and how VoIP competes with traditional telephony). *See generally* Kiser & Collins, *supra* note 32.

106. They are not recommending that, in the absence of common carrier regulations, the industry should simply be a wild jungle of VoIP Service Providers with no checks or balances. Rather, they expect that market forces will take over and that the industry will self-regulate in order to provide quality services competitive with existing telephone services. *See generally Voice Over Internet Protocol: Hearing Before the Senate Comm. on Com., Sci. & Tech.,* 108th Cong. (2004) (statement of Jeffrey Citron, CEO of Vonage), *available at* http://commerce.senate.gov/pdf/citron022404.pdf (stating that VoIP Service Providers can, and are, meeting public policy goals without classifying VoIP as a telecommunications service). For example, the Voice on the Net ("VON") Coalition is an industry organization that has made voluntary and proactive efforts to ensure the accessibility of VoIP for disabled individuals (as mandated by 47 U.S.C. § 255 (2000)). *See* The Mission of the VON Coalition, http://www.von.org/about.asp (last visited Sept. 19, 2006) ("The VON Coalition's mission is twofold: actively advocate the viewpoint that the IP Telephony industry should remain as free of governmental regulations as possible, and to educate its members on regulatory and policy issues of business importance."). Thus, although with this approach the government would not have a regulatory hand in overseeing VoIP, as it does with traditional telephony, the industry would still find a way to provide the features that are most necessary to the public.

107. *Vonage*, 290 F. Supp. 2d at 994.

108. For example, under CALEA, telecommunications carriers must ensure that their equipment, facilities, and services are capable of providing surveillance capabilities to law enforcement agencies. *See* Commc'ns Assistance for Law Enforcement Act and Broadband Access and Services, First Report and Order and Further Notice of Proposed Rulemaking, 20 F.C.C.R. 14989 (Aug. 5, 2005).

## IV. IMPOSING LOCATEABILITY ON VoIP IS NECESSARY FOR PUBLIC SAFETY

Regardless of categorical inconvenience, the FCC should impose locateability and ALI requirements on VoIP. Despite opposition from parties who urge leaving VoIP completely unregulated, the full suite of 911 emergency services should be imposed because they are justified by a government interest in preserving public safety. Unlike other types of regulations designed to promote competition in the industry, imposing locateability is necessary in order to prevent loss of life — a goal articulated by Congress throughout the years and preserved over the course of various amendments to the Communications Act.[109] Public safety regulations carry weight that makes the difference between life and death; imposing locateability on VoIP would not be merely another customary regulatory imposition. However, although public safety is a vital concern, the FCC must be careful that such regulations are not imposed merely for the sake of maintaining regulatory symmetry or following precedent. In this digital age, the factors to be considered go beyond simple regulatory classification; there are risks to privacy and Fourth Amendment rights to consider as well. Even with these concerns, however, public safety is an overriding interest whose implementation the government should oversee. Many consumers expect that VoIP will have full 911 emergency services, and even when they do not, the government's interest in promoting public safety justifies requiring VoIP to offer such emergency services. The FCC has the authority to regulate VoIP in this manner, and privacy and Fourth Amendment rights can be addressed though alternate means without sacrificing public safety. By upholding public safety as a paramount objective, imposing locateability ensures that the public welfare remains in good hands.

### *A. Consumers Expect That VoIP Will Support 911 Emergency Services Comparable to That of Traditional Telephony*

One problem with allowing VoIP to operate free of any regulation is that consumers are increasingly turning to VoIP as a lower-cost alternative for traditional telephony without the knowledge that VoIP does not necessarily provide reliable 911 service.[110] With traditional telephony, consumers generally know that when they call 911 they will reach an emergency dispatcher who can automatically locate and call back the caller. The same is not true for all VoIP service

109. Werbach argues that "[i]nstead of engaging in regulatory whack-a-mole, we must step back and examine the point of those obligations and taxes." *VoIP Hearing*, *supra* note 86. The bulk of common carrier regulations imposed on telecommunications were designed to curb the monopolist tendencies of the incumbent Baby Bells broken off from old "Ma Bell." *See* Harold, *supra* note 67, at 736 (providing general background about "how the new companies might unfairly use their control over the local exchange facilities"). Simply because the legacy regulations were used in the past does not mean that cannot be disturbed. These antiquated purposes are not applicable to the VoIP industry, where there is no incumbent with such a high degree of market power. *See VoIP Hearing*, *supra* note 86.

110. *See* DuFour, *supra* note 44, at 475–77 (discussing the growth of VoIP usage and its consumer base).

providers, some of which are still in the experimental stages of developing full E911 capabilities.[111]

The reliability of 911 has instilled in Americans the belief that having telephone service means having 911 emergency services.[112] In the year 2000 alone, 150 million calls were made to 911 for emergency help.[113] According to FCC chairman Kevin Martin, "[a]nyone who dials 911 has a reasonable expectation that he or she will be connected to an emergency operator; this expectation exists whether a person is dialing 911 from a traditional phone, a wireless phone, or a VoIP phone."[114] Despite the technological reality that not all VoIP service providers are equipped with full E911 capabilities, consumers still expect that when they call 911 for help, they will reach an emergency operator who can do all the same things that emergency operators can do when someone calls from a traditional wireline telephone.[115] This expectation stems from the closeness with which VoIP mimics traditional telephony. With VoIP, users can make and receive calls in the same way that users of traditional telephony do, and can reach or receive calls from other VoIP subscribers as well individuals who use phones connected to the PSTN. Comments submitted to the FCC by industry entities also support the fact that consumers view VoIP as the equivalent of "regular" telephone service.[116] Because the reliability of full 911 emergency services for traditional telephony has given rise to consumer expectation of comparable 911 emergency services for all telephones, the government has an interest in ensuring

111. According to the VON Coalition's survey results of industry progress on 911 solutions for VoIP, sixty percent of broadband VoIP service providers support E911 capabilities for fixed, non-roaming users with automatic callback number and location information features. Survey Highlights Progress on 9-1-1 for VoIP, http://www.von.org/usr_files/911%20—%20Survey%2012-1-04.pdf (last visited Sept. 19, 2006) [hereinafter *Survey Highlights*]. In its second annual survey, forty-two percent of interconnected VoIP service providers estimated that all of their customers would have E911 for their primary fixed users by November 28, 2005. VoIP Providers Announce Significant Progress on E911, http://www.von.org/usr_files/911%20—%20Survey%202005%20final.pdf (last visited Sept. 19, 2006) [hereinafter *Significant Progress*]. However, other VoIP service providers, such as Net2Phone, did not originally offer any emergency services at all. By 2006, Net2Phone had remedied this gap in service, although E911 is still not available to Net2Phone customers in a power outage or when they move their VoIP phone to another location. Net2Phone FAQs, http://web.net2phone.com/consumer/voiceline/support_faq.asp#Doyouprovide911service (last visited Jan. 3, 2007).

112. *See* E911 Requirements First R&O, *supra* note 4, at 10,333 (statement of FCC Commissioner Jonathan S. Adelstein) ("'911' has become synonymous with help being just a phone call away."); *see also* NENA Development, *supra* note 13 ("At the end of the 20th century, nearly 93% of the population of the United States was covered by some type of 9-1-1 service. 95% of that coverage was Enhanced 9-1-1. Approximately 96% of the geographic U.S. is covered by some type of 9-1-1.").

113. National Emergency Number Association, Wireless 9-1-1 Overview, Wireless Statistics, http://www.nena9-1-1.org/Wireless911/Overview.htm#Wireless%20Statistics (last visited Oct. 20, 2006); *see also* E911 Requirements First R&O, *supra* note 4, at 10,333 (statement of FCC Commissioner Jonathan S. Adelstein) ("Americans make 200 million calls to 911 each year.").

114. E911 Requirements First R&O, *supra* note 4, at 10,328.

115. *Id*. at 10,256–57.

116. *Id*. at 10,256 & n.72.

that this reliability continues when telephonic communications migrate towards a digital form.

In contrast, consumers do not have this expectation for communications via devices such as Xbox video game services or instant messaging services.[117] When the draft of a recent legislative bill relating to IP and broadband services[118] proposed rules for imposing E911 and other obligations on a very broad range of Internet services with the ability to transmit voice (including VoIP), companies such as Microsoft protested and argued that requiring E911 of Internet-based services such as its product Xbox, which does not "substantially replace" telephone services, was unreasonable.[119] Indeed, those services are used primarily for context-specific purposes,[120] and consumers would not expect them to support 911.

Furthermore, the expectation that all telephones will function in the same way means that the FCC should impose uniform requirements on every VoIP telephone, regardless of the service provider. To that effect, in its June 2005 E911 Order, the FCC "preclude[d] interconnected VoIP providers from requiring subscribers to 'opt-in' or allowing subscribers to 'opt-out' of 911 services."[121] By prohibiting opting in or out, the FCC has taken into account the possibility that users other than the subscriber, who may have chosen to forgo emergency services in favor of privacy, may have access to VoIP telephones and may need to access emergency assistance. Third parties who need help should not have to bear the potentially harmful consequences stemming from the judgment of an individual who opts out of 911. To maintain a meaningful commitment to public safety, the FCC should ensure that all of the phones that the public reasonably expects to be phones will support the same 911 services. By requiring that all, not just some, VoIP service providers support 911, the FCC can maintain the same degree of

117. *Id*. at 10,256 (stating that the FCC has previously determined that consumers today lack any expectation that 911 will function for non-voice data services).

118. Discussion draft of legislation to create a statutory framework for Internet Protocol and Broadband Services, Committee on Energy and Commerce, Subcommittee on Telecommunications and the Internet, 109th Cong. (2005), *available at* http://energycommerce.house.gov/108/News/09152005_staff_disc.pdf.

119. *See* Anne Broache, *Tech Firms Assail Proposed Broadband Rules*, ZDNET.COM, Nov. 9, 2005, http://news.zdnet.com/2100-1035_22-5942508.html; *see also* E911 Requirements First R&O, *supra* note 4, at 10,256–57 n.72 (citing Alcatel Comments, stating that "consumers have a reasonable expectation that 911/E911 services will be available for most VoIP services, and noting that voice functions provided as part of an Xbox video game service [do not give rise to a similar reasonable expectation] because a video game service is not a replacement for PSTN service").

120. For example, the Internet-based service LiveMeeting is used for collaborative work programs. *See* Broache, *supra* note 119.

121. E911 Requirements First R&O, *supra* note 4, at 10,271. Some VoIP consumers may dislike this provision because it potentially forces them to be accountable. That is, they may suspect that their privacy will be compromised if by law they must subject themselves to locateability. However, in pursuing its objective to promote public safety, the FCC cannot assume that the person who opted out of access to emergency services will be the same person needing to call 911 for help.

reliability on all phones. That is, it can still ensure that "help [is] just a phone call away"[122] no matter which phone a caller uses.

VoIP therefore stands out from other Internet-based communications as a medium that is functionally the same as traditional telephone service and that users expect will support full 911. Consumers may assume that the 911 emergency services available for both traditional telephony and VoIP telephony are in fact the same. This is a dangerous assumption that can lead to loss of human life,[123] as existing VoIP emergency services are not yet up to the standard that emergency services for traditional telephony have set.[124] If the expectation of users is that VoIP matches or exceeds the features provided by traditional telephony, including efficient ALI capabilities, then the FCC should regulate up to that point of expectation in order to close the gap between consumer expectation and reality. Only then would the FCC be duly fulfilling its responsibilities to promote public safety, as mandated by Congress in the Communications Act. To the extent that VoIP users expect this service to replace telephone service, the FCC should regulate these crucial features for the public interest under its ancillary jurisdiction in Title I of the Communications Act.[125] Locateability, as made possible through E911 and ALI technology, must be imposed to match the emergency services available in VoIP with the expectations of consumers who subscribe to VoIP services.

### *B. The Government's Heightened Interest in Promoting Public Safety Justifies Imposing the Full Suite of 911 Emergency Services on VoIP, Even When Consumers Do Not Have Such an Expectation*

Even where VoIP service providers have provided notice to users of their flawed 911 emergency services, as required by the FCC's E911 Order,[126] it is still necessary to develop a reliable 911 system. Notice of current defects may reduce or eliminate consumers' expectations that VoIP can provide full emergency services, perhaps persuading users to maintain a wireline telephone or cell phone

122. *Id.* at 10,333 (statement of FCC Commissioner Jonathan S. Adelstein) ("'911' has become synonymous with help being just a phone call away.").

123. *See, e.g., Woman Got Non-Emergency Police Number When She Dialed 911*, *supra* note 4; Charny, *supra* note 4; *VoIP and 911*, *supra* note 4.

124. The success of different VoIP service providers in developing 911 emergency services varies greatly, depending on whether users are fixed or nomadic, and due to the range of 911 assistance offered, from merely being able to route a 911 call to the correct PSAP to enabling full ANI and ALI capabilities. *See generally Survey Highlights*, *supra* note 111; *Significant Progress*, *supra* note 111.

125. 47 U.S.C. § 154(i) (2000); *see also infra* Part IV.C.

126. E911 Requirements First R&O, *supra* note 4. For example, the Order requires VoIP service providers to inform new and existing subscribers of the limitations of its own 911 service, request that customers return to the provider acknowledgement of receipt of such warnings, and distribute to customers warning labels to be placed on the VoIP equipment. *Id.* at 10,271–73.

alternative. However, in an increasing number of households and businesses, VoIP has become the only telephonic means of communication available to users.[127] Thus, consumers, including those that do not expect full 911 service through VoIP, may be left without any means to call for help. For example, people in need of emergency help may not be able to run to neighbors who own traditional telephones in order to make a reliable 911 call; the caller may be incapacitated or neighbors in rural areas may live too far away. Even if the caller reaches a neighbor's telephone, precious moments that could adversely impact the life or health of those needing aid have already been wasted.

Although imposing additional regulations may arguably hamper innovation or the entry of new VoIP service providers into the market, the need for imposing locateability is justified by special reason. Because the government has a heightened interest in protecting the lives of the public, ensuring that VoIP service providers support full 911 emergency services, including locateability, is vitally important. One of the chief purposes behind the Communications Act was to "promot[e] safety of life and property through the use of wire and radio communication."[128] Accordingly, the FCC has advanced the development of emergency services nationwide towards meeting this objective, including deployment of basic and enhanced 911.[129] Congress subsequently enacted the 1996 Act in order to encourage growth of emerging technologies, but the provision for public safety remained intact in the amended version of the statute.[130] Furthermore, although originally intended for wire and radio usage, this goal has clearly been expanded to include other media, such as wireless telephony, as the scope of the congressional mandate is updated to the modern era of communications.[131]

The FCC's regulation over traditional telephony and the availability of effective 911 emergency services is literally a matter of life or death. Over the years, the FCC as well as state and local governments have encouraged the public to depend on 911 emergency services — from the beginnings of the federal emergency program in the 1960s, through the breakup of Ma Bell and the birth of the

127. An estimated twelve to fifteen million households will be using a VoIP service as either a primary or secondary line by the end of 2008. National Emergency Number Association, 9-1-1 Fast Facts, http://www.nena.org/911_facts/911fastfacts.htm (last visited Sept. 19, 2006). As of October 2004, three percent of broadband consumers in the United States report they used VoIP at least once in the past six months as a primary phone line. *See* Sean Michael Kerner, *VoIP to Hit 12.1 Million U.S. Households by 2009*, CLICKZ, Oct. 7, 2004, http://www.clickz.com/stats/sectors/broadband/article.php/3418651. Another study by a company that designs, develops, implements, and supports E911 systems says that 43% of all U.S. broadband households will use VoIP as a primary line service by 2008. HBF GROUP, SYSTEM-9® ZOO Markets 11, http://www.hbfgroup.com/Markets.pdf (last visited Oct. 20, 2006).

128. 47 U.S.C. § 151 (2000).

129. *See, e.g.,* 47 C.F.R. § 11.1 (2005) (codifying regulations for using telecommunications to implement a national emergency alert system). *See generally supra* Part II.A.

130. 47 U.S.C § 157 (2000).

131. *See* Press Release, FCC, FCC Adopts Rules to Implement Enhanced 911 for Wireless Services (June 12, 1996), *available at* http://www.fcc.gov/Bureaus/Wireless/News_Releases/1996/nrwl6026.txt.

Baby Bells, to the extension of E911 requirements for wireless communications.[132] Without these federally mandated services, people whose lives are in danger would have a far worse chance of survival. Accordingly, the government has an interest in furthering the development of E911 when the lack of such features in new communications services such as VoIP jeopardize the public's safety and welfare.

Despite the high priority status the FCC accords public safety, it recently abandoned its November 28, 2005 initial deadline for compliance with the E911 rules adopted earlier in the year. This means that VoIP service providers do not have to terminate the service of existing customers if compliance is incomplete.[133] Rather, according to the November 7, 2005 Notice, VoIP service providers that cannot meet the deadline for implementing E911 (to the extent possible with a user's registered and updated location information) must discontinue marketing VoIP and recruiting new customers in all areas where they cannot properly route 911 calls to the appropriate PSAP as required by FCC rules.[134] VoIP service providers must also send to current subscribers notice of the limitations of the existing 911 emergency services available, and will also presumably continue efforts to deliver full service in the future. Although it is possible that consumers on notice of VoIP's flaws might simply switch to another provider that supports 911, the FCC cannot assume that all consumers are sophisticated enough to know what 911-compliant options exist. Nor can it assume that consumers will supplement their VoIP service with alternate telephone options that virtually guarantee access to emergency help, such as traditional telephone service. Making these assumptions would leave stranded any consumers that happen to subscribe to a VoIP service provider with an imperfect 911 emergency system. To ensure that all VoIP users are adequately protected, then, the FCC should impose full 911 emergency services obligations on VoIP, including locateability, in order to meet its public safety mandate.

With the November 7, 2005 Notice, the FCC relaxes its stance on immediate compliance with the June 2005 E911 Order, limiting the existence of non-compliant VoIP service providers rather than decreeing their demise. However, FCC should instead speed up this process, and soon afterwards require full compliance with locateability and ALI obligations. Although some leaders in the

132. *See*, *e.g.*, GAO REPORT, *supra* note 25, at 31 ("[I]n August 2003, FCC announced a wireless E911 public awareness campaign emphasizing coordination, outreach, and education."); Press Release, New York City Office of the Mayor, Mayor Michael R. Bloomberg Announces Use of Digital 911 Technology to Combat Domestic Violence, Citywide Advertising Campaign Also Unveiled (Oct. 22, 2002).

133. Public Notice, FCC, Enforcement Bureau Outlines Requirements of Nov. 28, 2005, Interconnected Voice Over Internet Protocol 911 Compliance Letters 5 (Nov. 7, 2005), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-2945A1.pdf [hereinafter Public Notice Compliance Letters]; *see also* Anne Broache, *FCC Abandons E911 Deadline*, CNET NEWS.COM, Nov. 8, 2005, http://news.com.com/FCC+abandons+E911+deadline/2100-7352_3-5939325.html?tag=guts_lh_7352.

134. Public Notice Compliance Letters, *supra* note 133, at 5.

VoIP industry have urged the FCC to delay or refrain from imposing regulations in order to allow the industry time to grow and develop its own 911 solutions,[135] FCC Commissioner Michael J. Copps captures the urgency with which emergency services regulations need be implemented:

> For far too many years now, the Commission has engaged in all sorts of term-parsing and linguistic exegesis as if just finding the right descriptor for new technologies would magically create a policy framework for them. . . . The sad fact is that we have spent so much time splitting hairs about what is a telecommunications service and what is an information service that we have endangered public safety. At some point the semantic debates must end and reality must assert itself — when customers sign up for a telephone they expect it to deliver like a telephone. When an intruder is in the house and the homeowner goes to the phone to call the police, that's a call that just has to go through.[136]

Although VoIP may not fit perfectly into the Communication Act's current regulatory framework, carrying out Congress's intent to promote public safety warrants particular consideration of 911 regulations for VoIP. This means requiring timely implementation of not only basic 911 services, but the full suite of emergency services available in traditional telephony, including locateability.

### *C. The FCC Has the Authority to Impose Locateability on VoIP*

Currently, VoIP is classified according to its Internet underpinnings rather than by its traditional telephone-like exterior. However, some entities advocate imposing full 911 emergency services on VoIP as part of the legacy regulations currently required of telecommunications services, touting the mantra, "If it looks like a duck and it quacks like a duck, then it must be a duck!"[137] Although parity — treatment of VoIP in congruence with treatment of traditional telephony — is laudable in concept, it leaves too many inconsistencies in the regulatory scheme to

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135. *See*, *e.g.*, Reply Comments of the Voice on the Net Coalition, Sept. 12, 2005, at 3–6, *available at* http://www.von.org/usr_files/911%20—%20NPRM%20Reply%20Comments%209-12-05.pdf [hereinafter VON Reply Comments]. These comments were submitted to the FCC as a reply to the E911 Requirements First R&O, *supra* note 4.

136. E911 Requirements First R&O, *supra* note 4, at 10,331.

137. *See Vonage*, 290 F. Supp. 2d at 1001 (characterizing [the Minnesota Public Utilities Commission's] reasoning as a "simplistic 'quacks like a duck' argument, essentially holding that because Vonage's consumers make phone calls, Vonage's services must be telecommunications services"). By analogy, regulators compare new services to old services, find similarities, and decide that the similar services should be treated in similar ways. In telecommunications law, parity means that services deemed to have similar characteristics are accordingly classified together under the same definitions. Sherille Ismail adds that "[r]egulatory parity arguments are hard to ignore because they are grounded in notions of fairness and equality that are fundamental values in our society." Ismail, *supra* note 31, at 448. Parity is supported by the idea that if all members of a group are treated evenhandedly, no one will be unhappy that he has less than others.

impose locateability on this basis. Requiring VoIP to provide locateability and 911 as part of a palette of other obligations would burden VoIP more than is necessary or useful. After all, VoIP remains at its core a growing Internet service, and the FCC should not burden its development with legacy obligations in contravention of the 1996 Act's mandate to stimulate the emergence of new technologies.

A more appropriate tactic would be to impose 911 and locateability on a piecemeal, as-needed basis under the FCC's ancillary jurisdiction in Title I of the Communications Act. Ancillary jurisdiction authorizes the FCC to "perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with [the Communications] Act as may be necessary in the execution of its functions."[138] This catch-all provision enables the FCC to regulate communications that fall outside its direct mandate, as reflected in the other titles of the Communications Act. Such authority allows the FCC to develop rules to serve the overall goals of the 1996 Act, as long as they are "reasonably ancillary" to the FCC's specific duties[139] and are not inconsistent with any explicit statutory provisions.[140] To pursue this type of ancillary jurisdiction regulation, the FCC should leave new Internet-based technologies classified as information services and build any regulations from the bottom upwards.[141] In this manner, the FCC could maintain its "light touch" over information services and still pursue the most essential regulations. Thus, the FCC could regulate VoIP under its ancillary jurisdiction even in the absence of express authority to regulate it as a telecommunications service under Title II of the Communications Act.

In light of Congress's intent to deregulate Internet-based "information services" under the 1996 Act,[142] it is unlikely that VoIP would ever have to bear the entire set of regulatory obligations currently imposed on traditional telephony.[143] By establishing a policy of lowering barriers, the 1996 Act encouraged new technologies such as VoIP to enter the telecommunications market. Thus, in exercising its ancillary jurisdiction, "the [FCC's] challenge is to achieve our essential social policy goals at the least cost to innovation, investment, and competition."[144] To do so, the FCC should select and impose only those obligations it decides are

138. 47 U.S.C. § 154(i) (2000).

139. Weiser, *supra* note 99, at 51 (citing United States v. Southwestern Cable Co., 392 U.S. 157, 172 (1968)).

140. Weiser, *supra* note 99, at 50 (citing AT&T Corp. v. Iowa Util. Bd., 525 U.S. 366, 381 (1999)).

141. Weiser, *supra* note 99, at 55–57 (describing Title I versus Title II regulation by the FCC as bottom-up or top-down).

142. *See generally supra* Part III.A.

143. *See*, *e.g.*, Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Report and Order and Notice of Proposed Rulemaking, 20 F.C.C.R. 14,853 (Aug. 5, 2005) (providing an example of how the FCC may be inclined to defer to a technology's Internet status in order to encourage development of advanced telecommunications).

144. *VoIP Hearing*, *supra* note 86.

necessary, and otherwise allow the VoIP industry to determine for itself what other features are necessary to comply with social policy goals. Unless the current regulatory framework is substantially altered to account for technological convergence (which is unlikely to occur), this ad hoc approach would best serve the goals shared by industry and government, leaving VoIP free to grow while also preserving the public's best interests.

In particular, the foremost requirement that should be imposed on VoIP is locateability, because it is a feature of traditional telephony that consumers have generally come to expect of all telephonic communications. Although imposing locateability increases responsibilities for VoIP service providers, the FCC has authority under its ancillary jurisdiction to determine that locateability is a necessary element of public safety because of the role it plays in the provision of emergency services.[145] As the congressionally designated expert in the realm of communications regulation, the FCC is also entitled deference in assessing the government's strong interest in protecting both users that expect full 911 services from VoIP services as well as those that do not.[146] Thus, as an ancillary function of its congressional mandate to promote public safety, imposing locateability is perfectly within the realm of the FCC's powers.

### *D. The FCC Should Not Sacrifice Public Safety For the Sake of Privacy*

While the ability to physically locate individuals is vital for public safety, some parties protest that their privacy may be compromised.[147] One primary concern about imposing 911 locateability on VoIP is that by making it "locateable," it becomes possible for the government or other interested parties, such as private investigators or individuals with intent for self gain, to determine where an individual is at any given moment.[148] Because VoIP telephones are portable

145. The FCC may impose emergency service requirements over VoIP by enacting rules that are reasonably ancillary to its explicit task of promoting safety of life and property. *See supra* Part IV.B.

146. Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837, 843–45 (1984) (discussing the deference to which administrative agencies are entitled).

147. *See*, *e.g.*, Comments of the American Civil Liberties Union, Communications Assistance for Law Enforcement Act and Broadband Access and Services (Nov. 8, 2004), *available at* http://www.cdt.org/digi_tele/20041108aclu.pdf; Comments of the Electronic Frontier Foundation, Communications Assistance for Law Enforcement Act and Broadband Access and Services (Jan. 13, 2005), *available at* http://www.eff.org/patriot/FOIA_Request.pdf; VON Reply Comments, *supra* note 135.

148. *See* Johnny Gilman, *Carnivore: The Uneasy Relationship Between the Fourth Amendment and Electronic Surveillance of Internet Communications*, 9 COMMLAW CONSPECTUS 111, 122 (2001) ("Each data packet consists of two components. One component is the address information, which appears in the packet's header and, like an envelope address, ensures that the communication arrives at the proper location and is reassembled in the correct sequence. The second component is the body, or payload of the communication, which contains the communication's content."). Thus, precautions must be taken to ensure that "[c]ollection [is] limited to the information in the header" when responding to requests for location data. Haglund, *supra* note 37, at 140.

and some users transport their phones between various locations (i.e., "nomadic" VoIP users), imposing locateability means that a user's physical movements may become traceable. VoIP suffers from an additional privacy problem because it is digitized: it is more difficult to isolate non-content information (e.g., ALI data) from the content (i.e., the voice conversation), creating the risk that when reporting location data for public safety purposes, protected content data may be inadvertently divulged as well.[149] In traditional telephony, the conversation is transmitted separately from other data (such as the numbers of the telephones to and from which calls are made), making it easy to hand over only non-content information.[150] However, with VoIP, the process is more complicated because conversations take place through the transmission of data packets which contain both content data and headers.[151] Precautions must therefore be taken to ensure that "[c]ollection [is] limited to the information in the header" when responding to requests for location data.[152] Furthermore, like data from mobile cell phones, VoIP data is also extremely convenient to generate because it is computerized, making it even easier to be tracked.[153] Some critics of locateability worry that this feature will make it possible to assemble location data as part of "virtual dossiers" on individuals,[154] allowing the government to gather too much infor-

149. *See* Gilman, *supra* note 148, at 122.

150. *Id*.

151. *Id*.

152. Haglund, *supra* note 37, at 140.

153. Matthew Mickle Werdegar, *Lost? The Government Knows Where You Are: Cellular Telephone Call Location Technology and the Expectation of Privacy*, 10 STAN. L. & POL'Y REV. 103, 106 (1998):

> Tracking via cellular telephone can theoretically be done automatically by computer, thus making it possible for police to monitor the movement of many more people for much longer periods of time. Moreover, cellular location technology provides police with a capability that has never before been available — to accurately trace the past movements of individuals simply by searching through cellular telephone company computer logs.

154. *See generally* Jerry Kang, *Information Privacy in Cyberspace Transactions*, 50 STAN. L. REV. 1193 (1998). Kang says:

> It is a common mistake to think that the danger cyberspace poses to privacy is captured in any single bit of personal information. In fact, any such morsel of data is likely to be inconsequential. Instead, the true privacy threat arises from the systematic, detailed aggregation of otherwise trivial data that allows the construction of a telling personal profile. What seems nonsensitive in isolation becomes sensitive in aggregation.

*Id.* at 1288 n.370. Kang cites the Supreme Court in *United States Dep't. of Justice v. Reporters Comm. for Freedom of the Press*, in the context of criminal records:

> [T]he compilation of otherwise hard-to-obtain information alters the privacy interest implicated by disclosure of that information. Plainly there is a vast difference between the public records that might be found after a diligent search of courthouse files, county archives, and local police stations throughout the country and a computerized summary located in a single clearinghouse of information.

*Id.* at 1241 n.211 (citing U.S. Dep't of Justice v. Reporters Comm. for Freedom of the Press, 489 U.S. 749, 764 (1989)).

mation and violating individuals' reasonable expectations of privacy under the Fourth Amendment.[155]

During the past several decades, the emergence of new technologies has challenged the role of the Fourth Amendment in protecting the privacy rights of individuals. The Fourth Amendment guarantees that "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated . . . ."[156] Although the Supreme Court's decision in *Katz v. United States*[157] indicates that the Fourth Amendment protects the content of telephone calls, the issue of whether location data gathered by ALI capabilities would also be covered has not yet been addressed.[158] However, cases dealing with data collected by other types of technology suggest that such information is likely not protected by the Fourth Amendment.

In *Smith v. Maryland*,[159] the Supreme Court held that the police's use of a pen register to record the telephone numbers dialed by the defendant and link him to a crime was not an unconstitutional search in violation of the Fourth Amendment. The Court stated that people do not have any actual expectation of privacy when they dial a phone number,[160] and even if they do have such an expectation, it is not "one that society is prepared to recognize as 'reasonable.'"[161] Essentially, information is not protected when it is voluntarily turned over to third parties such as the telephone company that assembled the pen register in *Smith*. *Smith* also implies that the expectation of privacy the public may reasonably hold in a telephone call is limited to the oral conversation of the call.

In a later case dealing with the tracking of an individual via an electronic beeper, the Supreme Court determined that the collection of information from the beeper did not violate any reasonable expectation of privacy. Because the police used the technology to augment their own visual observations, there was no vio-

155. *See generally* Werdegar, *supra* note 153 (arguing that requiring location technology [for cell phones] poses risks to individual privacy because it gives law enforcement officials an extraordinarily powerful tool for monitoring the movement of individuals).

156. U.S. CONST. amend. IV.

157. 389 U.S. 347 (1967).

158. *See generally* Werdegar, *supra* note 153, at 107–09 (suggesting that location information gathered by cell phones would not be protected under the Fourth Amendment).

159. 442 U.S. 735 (1979).

160. *Id*. at 743:

> Telephone users, in sum, typically know that they must convey numerical information to the phone company . . . and that the phone company does in fact record this information for a variety of legitimate business purposes. Although subjective expectations cannot be scientifically gauged, it is too much to believe that telephone subscribers, under these circumstances, harbor any general expectation that the numbers they dial will remain secret.

161. *Smith*, 442 U.S. at 743–44 (quoting Katz v. United States, 389 U.S. 347 (1967)). The *Smith* Court added that an individual "has no legitimate expectation of privacy in information he voluntarily turns over to third parties." 442 U.S. at 743–44.

lation of the Fourth Amendment.[162] Additionally, lower courts have held that people do not have a reasonable expectation of privacy in e-mail IP addresses from their computers.[163] Taken together, these holdings, which deal with the non-content aspect of communications, suggest that location data, as non-content information, is similarly vulnerable to searches by the government or encroachment by private entities (e.g., private investigators seeking information about individuals).

Although courts seem to be unsympathetic towards personal privacy in the electronic age, people still expect that their movements will not be monitored. Concerns that subjecting VoIP to CALEA requirements would unduly leave private individuals open to constant surveillance and violate the protections of the Fourth Amendment fall outside the scope of this Note.[164] However, it is important to note that people are entitled to a general right to be left alone. Justice Brandeis once wrote that the true purpose of the Fourth Amendment was to protect the "right to be left alone."[165] Furthermore, he described it as "the most comprehensive of rights and the most valued by civilized men."[166] If the capabilities of technology are exploited, whether for law enforcement surveillance or illicit purposes, this right would be severely compromised. In effect, the government would "strip us of our secrets and our anonymity."[167]

While the content of a conversation over VoIP itself clearly merits Fourth Amendment protection under the holding in *Katz v. United States*,[168] it is unlikely that the attached headers of ALI data would merit such protection. Without favorable judicial precedent, imposing locateability could potentially open the door for abuse of information generated for legitimate public safety purposes. The solution for these privacy concerns, however, is not to deprive the public of the crucial and significant public safety benefits that arise from imposing locateability on VoIP. Rather, these concerns can be appropriately resolved through legislative treatment.[169]

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162. United States v. Knotts, 460 U.S. 276 (1983).

163. *See* United States v. Hambrick, No. 99-4793, 2000 U.S. App. LEXIS 18665, at *11–12 (4th Cir. Aug. 3, 2000).

164. *See generally supra* note 108 (discussing CALEA).

165. Olmstead v. United States, 277 U.S. 438, 478 (1928) (Brandeis, J., dissenting).

166. *Id*.

167. Werdegar, *supra* note 153, at 111.

168. 389 U.S. 347, 359 (1967).

169. *See* Mark Elmore, *Big Brother Where Art Thou, Electronic Surveillance and The Internet: Carving Away Fourth Amendment Privacy Protections*, 32 TEX. TECH. L. REV. 1053, 1083 (2001) ("Until changes occur which modify the current statutory protections or bring about a broader interpretation of the Katz privacy doctrine, courts will continue to address challenges involving Internet communications with judicial precedent and statutes not necessarily written to conform with modern technology. Courts will be forced to determine the impact of technology like DCS1000 on privacy rights by applying the current statutory framework to advancing technology. To better protect the privacy rights of individuals in the

Some academics have suggested amending statutory law to better protect non-content data generated by new technology. Most notably, they suggest such changes to protect the privacy of individuals who use cell phones, which, like VoIP, are portable.[170] The privacy issues presented by imposing locateability for VoIP closely mirror the problems faced in the cell phone industry; in both scenarios, location technology is beneficial for public safety, but it also presents great potential for abuse in tracking and surveillance. Similar amendments to statutory law could be very helpful for protecting the privacy of location data generated by VoIP usage and locateability. Of paramount interest is protection over not only privacy in the content of VoIP conversations, but also over privacy of the locations where users may carry their VoIP.

## V. CONCLUSION

Given Congress's mandate in the Communications Act of 1934 to promote public safety, it is imperative that the FCC require the VoIP industry to provide 911 locateability. Because of its life-preserving importance, public safety is an interest that holds great social policy weight in the regulation of communications. In the VoIP context, the safety concern is based on the public's expectation that all modern telephones will be able to perform the same emergency functions that people have always relied on in life or death situations — namely, that a 911 operator will be reached who can quickly and accurately dispatch emergency services to those who need help. If the expectation of users is that new technologies match or exceed the capabilities of longstanding communications services, the government should close the gap between public expectation and reality in order to fulfill its duties to promote public safety. Even in the absence of that expectation, the government still has a heightened interest in safeguarding the lives of citizens by ensuring that the communications industry promotes public safety to its utmost ability. Imposing locateability may burden the privacy of individuals,

21st century, Congress must amend existing legislation to properly address Internet communications rather than relying on the judiciary to divine Congress's intent from statutes that were drafted before the widespread use of Internet communications.").

170. For example, Werdegar suggests that Congress modify the Omnibus Crime Control and Safe Streets Act, 18 U.S.C. §§ 2510–2522, to protect cell phone users from involuntarily disclosing their ALI information. Werdegar, *supra* note 153, at 111. Congress passed the Omnibus Crime Control and Safe Streets Act in 1968 in response to the Supreme Court's decision in *Katz v. United States* in order to balance the privacy rights of citizens with the needs of law enforcement. *Id*. at 109. This Act codifies the Supreme Court's Fourth Amendment jurisprudence and is the primary federal law governing privacy over wire communications, amended to include protections for electronic media. *Id*. at 109–10. Werdegar advocates adding a provision "declaring that every citizen of the United States has a reasonable and legitimate expectation of privacy in his or her public movements." *Id*. He also suggests expanding the definition of "electronic communications," in § 2110(12) to include cell phone location information, amending subsection (C) of § 2510(12) to ensure that "any communication from a tracking device" does not preclude protection of cell phone location information, and adding a provision explicitly protecting cellular call location information, with the requirements necessary for the government to satisfy in order to gain access to the information with a search warrant. *Id*.

but individual privacy should not be preserved at the expense of public safety. Public safety cannot be compromised, given the fatal consequences that can result from failure to make available full emergency services. The FCC should impose locateability for VoIP, despite strains on privacy, in order to prevent loss of human life and harm to public welfare. Without it, VoIP remains at best a technology that cuts costs and corners, but that falls short of making a real difference in the lives of users.