

Someone To Watch Over Me: Social Policies for the Internet

by

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Over the last ten years, the United States has avoided creating rules dictating how the internet works or what devices can attach to the internet. In recent months, the Federal Communications Commission has begun aggressively to regulate internet activity by applying to broadband access providers and application providers policies that were developed for the world of telephone networks.

This Article presents a comprehensive inquiry into the “social policies” the FCC is imposing on the internet. It begins by describing the mindset of telephony companies, and why telephonists believe that someone must be in charge of any network. It then examines the mindset of internet exceptionalists, and explains why their beliefs in the unfettered future of the internet may prove shortsighted. Next, the Article explains how the FCC has construed its implementing statute to give it authority to make rules for internet applications, and examines three telephony “social policies” that are being transferred wholesale by the FCC into the internet context.

Finally, the Article offers a normative proposal for online “social policies.” This section argues that Congress should take the nature of the internet into account when adjusting the FCC’s statutory powers. First, although the social concerns addressed by the FCC’s actions (emergency service, assistance to law enforcement, funding of universal service) are substantial, there are better, more technologically sophisticated ways to implement these same policies with respect to online services. The path the FCC is taking is likely to be destructive of nascent online services and products. Second, there are other online “social policies” that are equally important to the future of U.S. citizens, including open access and consumer education. Third, the FCC’s current trajectory is inconsistent with the direction that Congress has taken thus far with respect to the internet, which has resulted in enormous innovation, creative collaboration, economic growth, and social development. The world is watching what the U.S. does, and Congress should act carefully as it takes on the regulation of the internet.

INTRODUCTION

Internet “exceptionalists” are ardent proponents of the idea that communication in cyberspace is not the same as terrestrial communication, at least not with respect to choice of law, jurisdiction, and intellectual property questions.¹ The theory of internet exceptionalism relies in part on the strong belief that the continued unfettered evolution of the internet is of great public import.² Internet exceptionalists often express deep skepticism as to the appropriateness of government regulation of the internet.³

But the necessary preconditions for internet exceptionalism often elude its proponents. By viewing cyberspace in splendid isolation from the gritty, earthbound infrastructure that allows internet users to go online, internet enthusiasts can miss real and growing threats to their

1. E.g., SIVA VAIDHYANATHAN, THE ANARCHIST IN THE LIBRARY: HOW THE CLASH BETWEEN FREEDOM AND CONTROL IS HACKING THE REAL WORLD AND CRASHING THE SYSTEM (2004) (arguing for freer approach to exchange of information and other material on the internet); David G. Post, *Against “Against Cyberanarchy,”* 17 BERKELEY TECH. L.J. 1365, 1366 (2002) (“I remain an unrepentant Exceptionalist. . . . the jurisdictional and choice-of-law dilemmas posed by cyberspace activity cannot be adequately resolved by applying the ‘settled principles’ and ‘traditional legal tools’ developed for analogous problems in realspace”); John Perry Barlow, *A Declaration of the Independence of Cyberspace*, at <http://homes.eff.org/~barlow/Declaration-Final.html> (Feb. 8, 1996) (“Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather.”). In a recent article, Peter Margulies divided internet exceptionalists into two camps, celebratory and cautionary, and put Lawrence Lessig, Vaidhyanathan, and Post in the former group and Cass Sunstein, Paul Schwartz, and Daniel Solove in the latter. Peter Margulies, *The Clear and Present Internet: Terrorism, Cyberspace, and the First Amendment*, 2004 UCLA J. L. & TECH. 4 (2004). For purposes of this Article, I am focusing on theorists Margulies would call the “celebratory” exceptionalists.

2. E.g., A. Michael Froomkin, *Habermas@Discourse.net*, 116 HARV. L. REV. 749, 782-97 (2003) (processes for internet standard-setting approximate Habermas’s “ideal speech community”); David G. Post, *What Larry Doesn’t Get: Code, Law, and Liberty in Cyberspace*, 52 STAN. L. REV. 1439 (2000) (“The emergence of the vast informational ecosystem we call cyberspace is an event of incalculable importance in the history of human liberty”).

3. E.g., DAN GILLMOR, WE THE MEDIA: GRASSROOTS JOURNALISM BY THE PEOPLE, FOR THE PEOPLE (2004) (“Governments are very uneasy about the free flow of information, and allow it only to a point. Legal clampdowns and technological measures to prevent copyright infringement could bring a day when we need permission to publish, or when publishing from the edge feels too risky.”); David R. Johnson and David G. Post, *Law and Borders—The Rise of Law in Cyberspace*, 48 STAN. L. REV. 1367, 1402 (1996) (arguing that net should be conceived of as a separate “place” for purposes of legal analysis) (“Law, defined as a thoughtful group conversation about core values, will persist [in cyberspace]. But it will not, could not, and should not be the same law as that applicable to physical, geographically-defined territories.”).

utopian visions. One underappreciated aspect of the current battles over internet policy is that the question “who is in charge of the internet” is already well on the way to being answered (in the United States, at least) by regulatory legerdemain. In America, the Federal Communications Commission (“FCC” or “Commission”) is in charge of the internet.

Internet exceptionalists have rarely darkened the door of the FCC, and it is fair to say that the FCC is unlikely to invite a panel of exceptionalists in to talk about the glories of the internet. There has been little discussion between the internet exceptionalists and the telecom traditionalists.⁴ The reason for the silence is that the two groups, using very different lexicons, have adopted completely different assumptions about the nature of internet users and the complexity of the internet itself. And, until recently, they were talking about different levels of the protocol stack.⁵ Even though the FCC is now cutting across the stack’s layers—shifting its focus from transport to applications—and is taking substantial steps towards “regulating the internet,” the two groups have largely continued to fail to communicate. Indeed, the implications of the other group’s actions are invisible to each group.

This failure to communicate, combined with the incremental nature of FCC’s policymaking, means that “internet policy” is developing in

4. There are exceptions. For example, Mark Lemley and Larry Lessig’s article, *The End of End-toEnd: Preserving the Architecture of the Internet in the Broadband Era*, was based on a declaration filed by Lemley and Lessig in the AT&T/MediaOne merger proceeding, Written Ex Parte of Professor Mark A. Lemley and Professor Lawrence Lessig, CS Docket No. 99- 251, 38-39, *Application for Consent to the Transfer of Control of Licenses MediaOne Group, Inc. to AT&T*, available at <http://cyber.law.harvard.edu/works/lessig/MB.html>, and Tim Wu and Larry Lessig filed comments with the FCC arguing for regulations ensuring application-level network neutrality in 2003. Letter from Tim Wu, Professor, University of Virginia Law School, and Lawrence Lessig, Professor, Stanford Law School, to Marlene Dortch, FCC, *Ex Parte Submission in CS Docket No. 02-52* (Aug. 22, 2003), available at http://faculty.virginia.edu/timwu/wu_lessig_fcc.pdf. But Lessig and Wu are both well known for their calls for increased government involvement in the internet (*see* LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE (1999) (control over code needs to be subject to political, collective decision-making)); [TIM WU & JACK GOLDSMITH [FORTHCOMING BOOK] (forthcoming 2006)] and should not, perhaps, be classed as internet exceptionalists.

5. The internet is most usefully described as an agreement to allow bits to flow among machines using a particular language, or protocol. It is often thought of in terms of its layers -- from bottom to top, (1) physical/infrastructure layer (cable, satellite, DSL, WiFi), (2) logical layer (TCP/IP, HTTP), (3) applications layer (browsers, email, VoIP), and (4) content layer (speech, text, music). The first two layers separate transport (sending electronic impulses down a connection) from the protocol, such as TCP/IP, that chunks these impulses into packets and allows them to be reassembled at the other end. The third and fourth layers are not global layers. Instead, they are layers deployed by individuals and enterprises to make use of the lower layers. The Commission has been focused until recently on the physical layer of the internet, and is now becoming interested in the application and content layers.

darkness. This Article is aimed not only at the members of the telecom traditionalist and internet exceptionalist groups but also at the rest of us. Ordinary consumers already know that the internet is exceptional. It has caused a revolution in their lives. But the regulators of “communications” in this country, who are very familiar with the characteristics of telephony and not as familiar with the culture of the internet, are now taking rules created for proprietary telephone networks and moving them to the internet, without perhaps taking adequate account of the internet’s characteristics. Internet exceptionalists have been blind to the creeping incrementalism of the FCC’s approach to the internet. The mainstream press and the public have not noticed this very gradual trend. And there is no sustained discussion of the implications of the FCC’s assertions of telephony-like power for our shared online future. If exceptionalists and traditionalists could talk to one another, the traditionalists might come to understand that the many key differences between the internet and telephone networks suggest that very few, if any, “social policies” taken unchanged from the world of telephony should be applied online.

My goals in this Article are threefold: I want to encourage the exceptionalists to engage with the FCC on both technical and policy grounds as the Commission plunges into further ad hoc creation of “social policies” for the internet; I want to encourage the FCC to appreciate the opportunities and risks associated with its current practice of applying unchanged policies created for telephony to the internet; and I want to propose that there is a middle ground between the two groups that may provide pragmatic solutions to the regulators’ problems while taking into account the realities of online life. Meanwhile, Congress is beginning to stir, as legislation is introduced that will reshape the FCC and restructure its powers. There is a great deal at stake in this debate, and it is important that we collectively confront the hard issues now facing the FCC and Congress. (Just what, exactly, is a “phone call” these days?)

The first two Parts describe the presumptions that frame the telephony mindset, on the one hand, and the internet exceptionalist mindset, on the other, and make predictions about the sorts of regulatory structures one would expect would develop based on both of these mindsets. Someone steeped in telephony comes to the table with the following assumptions: the public is largely passive; the availability of emergency service is central to the appeal of the medium; network operators have a close relationship with law enforcement authorities, and are used to designing their networks so as to be easily tappable; new

services are installed when a telephone company decides the investment is worthwhile; network managers are authoritative; telephony networks compete with other proprietary networks, like those for telegraphy (early on) and cable (now); and telephony companies have to create vertically-integrated network uses so as to sell more services. Someone who is steeped in online life (a “nethead,” or a “netizen”) comes to the table with very different assumptions: no one needs permission to use or attach to the network, as long as he or she (or it) uses the right protocol; no one layer should discriminate against another (which includes discrimination against any device or application that complies with the protocol); there are no central switches and there never should be; there are no central roadblocks and there never should be; filtering comes after publishing, rather than before; there is no central authority; intelligence resides at the edges of the network (in the users who are directing their own attention, and in the devices they use); terrestrial laws generally apply to the internet, but special-purpose internet filtering (except filtering by end-users) and technical mandates are inappropriate; and collaboration is the most exciting use of the network.

The third Part examines FCC actions with respect to “social policies” for the internet.⁶ Recently, the Commission has launched a major initiative that requires vendors of certain online voice applications to provide enhanced emergency 911 services,⁷ has announced that it intends to extend the reach of the Communications Assistance for Law Enforcement Act (CALEA)⁸ to online voice

6. *In the Matter of IP-Enabled Services*, WC Docket No. 04-36, Notice of Proposed Rulemaking, FCC No. 04-28 (rel. Mar. 10, 2004) [hereinafter “IP NPRM”]. The IP NPRM focuses on questions relating to emergency services, access by individuals with disabilities, consumer protection, and universal service. The FCC uses the term “social policies” as shorthand for this list of issues plus the issues raised in *In the Matter of Communications Assistance For Law Enforcement*, ET Docket No. 04-295, Notice of Proposed Rulemaking, FCC No. 04-187 (rel. Aug. 9, 2004) [hereinafter “CALEA NPRM”]. See IP NPRM at 25. See also Statement by Commr. Abernathy accompanying the IP NPRM: “Notwithstanding my interest in maintaining a light touch, I am committed to ensuring that our regulatory approach [to IP-enabled services] meets certain critical social policy objectives. As most policymakers at the federal and state level have recognized, we will need to find solutions to guarantee access to 911 services, the ability of law enforcement agencies to conduct surveillance, the preservation of universal service, and access by persons with disabilities. Some of these goals may well be achieved without heavy-handed regulation, but I am willing to support targeted governmental mandates where necessary.”

7. *In the Matters of IP-Enabled Services and E911 Requirements for IP-Enabled Service Providers*, WC Docket Nos. 04-36, 05-196, First Report and Order and Notice of Proposed Rulemaking, FCC No. 05-116 (rel. Jun. 3, 2005) [hereinafter “E911 Order”].

8. 47 U.S.C. § 1001 (2002).

applications that use the telephone namespace,⁹ and has begun work on extending the obligation to pay universal service fees to providers of online access.¹⁰ These proceedings provide useful examples of the FCC's approach to hard social problems. In all three contexts, the Commission is (at least for the moment) applying telephony-based understandings and rules to internet applications and devices without changing these rules to account for the ways in which the internet differs from telephone networks. Taken together, these examples neatly illustrate the incumbent craftiness, exceptionalist absence, jointly-created misunderstandings, technical tone-deafness, and incrementalism that characterize the development of internet policy today in the US.

The fourth Part explores the many problems that have led to the current state of affairs (including mindset limitations, concerns over the continued funding of the “universal service” program, the Commission’s worries about its relevance in the internet age, and capture of the agency by both existing telephony/cable broadband internet access providers and law enforcement authorities) and concludes that “netheads” should respond by acknowledging the social policy concerns articulated by the Commission and working on appropriate implementation of these policies in the online context. It is far too late for exceptionalists to say that the internet cannot be regulated by any government authority. The better approach is to persuade the Commission (and Congress) that there are better ways to carry out the policies on which the Commission has set its regulatory heart.

I. MINDSETS

This is a story of mindsets and worldviews. Why do telecom traditionalists think about networks in general and their network in

9. Press Release, Federal Communications Commission, FCC Requires Certain Broadband and VoIP Providers to Accommodate Wiretaps (Aug. 5, 2005).

10. *In the Matter of Comprehensive Review of Universal Service Fund Management, Administration, and Oversight; Federal-State Joint Board on Universal Service; Schools and Libraries Universal Service Support Mechanism; Rural Health Care Support Mechanism; Lifeline and Link-Up; Changes to the Board of Directors for the National Exchange Carrier Association, Inc.*, WC Docket No. 05-195, CC Docket No. 96-45, CC Docket No. 02-6, WC Docket No. 02-60, WC Docket No. 03-109, CC Docket No. 97-21, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, FCC No. 05-124 (rel. Jun. 14, 2005) [hereinafter “USF NPRM”]; Press Release, Federal Communications Commission, FCC Eliminates Mandated Sharing Requirement on Incumbents’ Wireline Broadband Internet Access Service (Aug. 5, 2005).

particular the way they do? What has given rise to the utopianism of internet exceptionalists? This Part provides brief and speculative answers to these questions.

A. *Telephony Mindset*

Each new technology is seen through the lense of older technologies, and the telephone was no exception. The prominence of the telegraph in American life led phone developers to see the telephone as a variety of telegraph—and a poor substitute at that. After all, telephones did not create written records for transactions.¹¹ The telephone industry descended directly from the telegraph industry in significant ways, with the same people involved. (Indeed, Alexander Graham Bell was working on enhancing telegraphy when he accidentally invented the telephone in March of 1876.) People in the early days called telephone calls “messages,” and saw the telephone as something to be used only for business orders, alarms, and calls for services.¹² Although Bell himself predicted that social chatter would be a popular use of his invention, early telephone men sought to discourage the use of the telephone for sociability up until the 1920s.¹³ Claude Fischer, in his book *America Calling: A Social History of the Telephone to 1940*, has argued that this resistance to “visiting” on the part of industry men came from their background in the telegraphy industry rather than any particular economic motivation.¹⁴ Chatter abused or trivialized the

11. ROBERT W. GARNET, THE TELEPHONE ENTERPRISE: THE EVOLUTION OF THE BELL SYSTEM'S HORIZONTAL STRUCTURE, 1876-1909 11 (1985), *quoted in* Claude S. Fischer, *Touch Someone: the Telephone Industry Discovers Sociability*, 29 TECH. & CULTURE 32-61 (1988) [hereinafter Fischer, *Touch Someone*].

12. Fischer *Touch Someone*, *supra* note ___, at 57.

13. CLAUDE FISCHER, *AMERICA CALLING: A SOCIAL HISTORY OF THE TELEPHONE TO 1940* (1982) [hereinafter FISCHER, *AMERICA CALLING*]. Fischer writes that the President of Bell Canada in 1890 complained that he couldn't stop trivial conversations, and that a manager in Seattle in 1909 wanted to limit the use of the telephone for “purely idle gossip.” *Id.* at 48-49. This attitude led a Bell marketing executive to exclaim in despair in 1928 that “This is about as commercial as if the automobile people should advertise, ‘Please do not take out this car unless you are going on a serious errand. . . ‘ We are faced, I think, with a state of public consciousness that the telephone is a necessity and not to be trifled with, certainly in the home.” *Id.* at 49.

14. *Id.* at 55 (“Although concern that long social calls occupied lines and operators – with financial losses to the companies—no doubt contributed to the industry's resistance to sociability, it is not a sufficient explanation of those attitudes or, especially, of the timing of their change.”) What accounted for it was the cultural mind-set of the telephone men. Fischer cites a 1904 sales instruction booklet for Bell sales representatives in which only one paragraph

important service these men were providing, and it took an entire generation to of experience with actual consumer usage patterns to convince the telephone men that consumers wanted sociability.¹⁵

Bell's business case was initially litigation-based.¹⁶ He obtained a patent (describing his invention to the Patent Office as an "improvement for telegraphy") when he was 29 that allowed him to prevail in more than 600 lawsuits over eleven years concerning would-be competing telephony providers. According to Susan Cheever, "In fact, Bell's real contribution may not have been the telephone but the telephone patent, because he wrote such a good patent that nobody could challenge it."¹⁷ As a 1910 Bell-sponsored telephony history put it: "No subject was ever so thoroughly investigated as the invention of the speaking telephone. No patent has ever been submitted to such determined assault from every direction as Bell's; and no inventor has ever been more completely vindicated."¹⁸

Neither early telephone men nor the consuming public were convinced that anyone actually needed telephones.¹⁹ The Bell people

addresses residential service. "That paragraph describes ways that the telephone saves time and labor, makes the household run smoothly, and rescues users in emergencies, but the only barely social use it notes is that the telephone 'invites one's friends, asks them to stay away, asks them to hurry and enables them to invite in return.' Conversation – telephone 'visiting' – per se is not mentioned." *Touch Someone, supra note ___, at 44.*

15. Fischser, *Touch Someone, supra note ___, at 44.* Early telephone companies were also interested in charging for additional services. This occasionally led to public relations problems. "In Britain in 1889, postal officials reprimanded a Leicester subscriber for using his phone to notify the fire brigade of a nearby conflagration. The fire was not on his premises, and his contract directed him to confine his telephone "to his own business and private affairs." The Leicester Town Council, Chamber of Commerce, and Trade Protection Society all appealed to the postmaster-general, who ruled that the use of the telephone to convey intelligence of fires and riots would be permitted thenceforth." CAROLYN MARVIN, WHEN OLD TECHNOLOGIES WERE NEW: THINKING ABOUT ELECTRONIC COMMUNICATIONS IN THE LATE NINETEENTH CENTURY 102 (Oxford Univ. Press: 1990).

16. As was, ironically and much later, the business plan of the first real competitor that Ma Bell faced, MCI.

17. *The American Experience: The Telephone* (PBS television broadcast, 1997) (transcript available at <http://www.pbs.org/wgbh/amex/telephone/filmmore/transcript/index.html>) [hereinafter *The American Experience*].

18. HERBERT M. CASSON, THE HISTORY OF THE TELEPHONE 93 (1910) (quoting George Maynard, founder of the Washington, D.C. telephone system), available at <http://etext.lib.virginia.edu/toc/modeng/public/CassTele.html> [hereinafter CASSON, HISTORY OF THE TELEPHONE].

19. FISCHER, AMERICA CALLING, *supra note ___, at 63.* From a web page entitled "Using the Telephone" comes this purported quotation: "My department is in possession of full knowledge of the details of the invention, and the possible use of the telephone is limited. (Engineer-in-Chief, The [British] Post Office, 1877)." *Using the Telephone*, available at <http://www.aber.ac.uk/media/Documents/short/phone.html>.

believed that they invented the telephone's uses, creating "the need of the telephone and then suppl[ying] it."²⁰ Banks were afraid of doing business using telephones because of privacy and recordkeeping concerns.²¹ Voice quality was poor because of inadequate amplification and telephones were initially mostly in public places, which made people have to shout in public. And people were suspicious of telephones.²²

Once switchboards were installed, thus expanding the number of subscribers that could be reached by any one node in the network, adoption was rapid. According to the Bureau of the Census, "By 1899 telephony. . . not only had surpassed telegraphy in physical and financial magnitude, but by its very growth had seriously restricted the expansion of telegraphy."²³ Indeed, diffusion of the telephone was something that was not widely discussed once the "technical marvel" stage was over.²⁴ It took only 40 years to move from one telephone in Boston to eleven million nationwide.²⁵

Early residential telephones were almost uniformly on party lines, which meant that everyone's phone rang when a call came in (specific ringing patterns were used to indicate each household) and eavesdroppers were omnipresent.²⁶ Subscribers could talk for only five minutes or so before someone else needed to make a call, and they had to be careful not to say anything that they wanted kept secret.²⁷ Single line service did not become widely prevalent until the 1970s.²⁸

Until the 1920s, the role of the operator was central; operators

20. Fischer, *Touch Someone*, *supra* note ___, at 37 n.9.

21. *The American Experience*, *supra* note ____.

22. Marshall McLuhan suggested that people initially were unsure that the person they were talking to was authentic or the conversation they were having was real—and passed along the idea that the word "phoney" "implies that a thing so qualified has no more substance than a telephone talk with a supposititious friend." *New York Evening Telegraph*, 1904, quoted in MARSHALL MCLUHAN, UNDERSTANDING MEDIA 233 (1964).

23. DEPARTMENT OF COMMERCE AND LABOR, TELEPHONES AND TELEGRAPHS: 1902 3 (1902).

24. FISCHER, AMERICA CALLING, *supra* note ___, at 143.

25. *The American Experience*, *supra* note ___. "[T]here was little serious controversy about the telephone, unlike the automobile, toward which many people were initially fundamentally hostile. Moreover, the telephone left little lasting impression on the consciousness of Americans compared to, say, the automobile." AMERICA CALLING, *supra* note ___, at 264.

26. As late as 1930, 40-50% of all US telephones in major cities were on party lines. Use of single lines did not become prevalent until after World War II. *Touch Someone*, *supra* note ___, at 55. The war prompted an enormous growth in phone use: 62% residential coverage in 1950, 80% by 1962, 90% by 1970. AMERICA CALLING, *supra* note ___, at 47-48

27. See *PrivateLine.com's Telephone History Party Lines*, available at <http://www.privateline.com>.

28. *Id.*

connected calls and provided an authoritative presence. Indeed, Bell companies seemed actively against removing the presence of operators, who could cut off subscribers who used profanity or were rude.²⁹ By 1910, New York Telephone alone had over 6,000 women running its switchboards. "Through notices, direct chastisement of customers by employees, and occasional legal action, the [Bell telephone] companies sought to improve telephone courtesy."³⁰ AT&T tried at first to suppress "hello" as a vulgarity, because the word was used as an expression of flirtatious surprise.³¹ A Bell advertisement from the early 1900s focused on "Courtesy Between Telephone Users."³²

A major emphasis of early Bell advertising was the usefulness of the telephone in times of emergency. An ad from 1905 reads: "The modern woman finds emergencies robbed of their terror by the telephone. She knows she can summon her physician, or if need be, call the police or fire department in less time than it ordinarily takes to ring for a servant."³³ The 1910 Bell-funded telephone tract put the matter this way:

But it is in a dangerous crisis, when safety seems to hang upon a second, that the telephone is at its best. It is the instrument of emergencies, a sort of ubiquitous watchman. When the girl operator in the exchange hears a cry for help -- "Quick! The hospital!" "The fire department!" "The police!" she seldom waits to hear the number. She knows it. She is trained to save half-seconds. And it is at such moments, if ever, that the users of a telephone can appreciate its insurance value. No doubt, if a King Richard III were worsted on a modern battlefield, his instinctive cry would be, "My Kingdom for a telephone!" . . . When a small child is lost, or a convict has escaped from prison, or the forest

29. "Since [1896], there have come some switchboards that are wholly automatic. Few of these have been put into use, for the reason that a switchboard, like a human body, must be semi-automatic only. To give the most efficient service, there will always need to be an expert to stand between it and the public." HISTORY OF THE TELEPHONE, *supra* note ___, at 149.

30. FISCHER, AMERICA CALLING, *supra* note ___, at 71. In the 1920s, Bell operating companies began installing direct-dial phones and operator service was gradually phased out.

31. Thomas Edison was all for "Hello." Bell preferred "Hoy, hoy." *Id.* at 70.

32. 1900s Bell advertisement. "There is a most agreeable mode of beginning a telephone conversation which many people are now adopting, because it saves useless time and is, at the same time, courteous and direct. It runs thus . . ." (on file with author).

33. FISCHER, AMERICA CALLING, *supra* note ___, at 140.

is on fire, or some menace from the weather is at hand, the telephone bells clang out the news, just as the nerves jangle the bells of pain when the body is in danger. In one tragic case, the operator in Folsom, New Mexico, refused to quit her post until she had warned her people of a flood that had broken loose in the hills above the village. Because of her courage, nearly all were saved, though she herself was drowned at the switchboard. Her name -- Mrs. S. J. Rooke -- deserves to be remembered.³⁴

A Bell ad from the 1910s features a drawing of a maiden in a nightdress clutching her throat and looking anxiously out the window. The ad copy reads: "When You Need a Neighbor -- or a doctor or assistance of any sort at any time, a reliable telephone is a friend in need. It is a time-saver when time is most valuable; often a life-saver in illness -- a property-saver in fire or theft..But you cannot get the full service, value and benefit of a telephone unless you have a reliable telephone -- buy and use only Standard "Bell" Apparatus and Equipment."³⁵ An ad from the 1920s reads: "my heart stood still . . . I heard stealthy voices . . . someone tinkering with a lock . . . a muffled footstep . . . saw a shadow flit by my window . . . I reached over to the stand by the bedside and seized -- no, not a revolver -- a telephone."³⁶

An ad from the 1930s shows a picture of a little blond girl, arms innocently flung out in sleep. The ad reads: "Sleep Soundly, Little Lady..."Mother and Daddy are near and the telephone is always close by. It doesn't go to sleep. All through the night it stands guard over you and millions of other little girls and boys."³⁷ Two other 1930s ads have the same theme. One features a little boy in bed looking apprehensively at his mother, and reads: "Your Cheapest Servant Protects Your Dearest Possessions. Sickness. . . . it is economy to have a means to reach your doctor quickly. Fire? . . . a few minutes delay will cause great damage. Accident or thieves? . . . nothing will bring you help as quickly as the telephone! Really, how much value can you place on something that makes life easier and safer?"³⁸ The other is directed to farmers, and shows a young girl at the phone while a prowler lurks outside her window: "Your Home Deserves Protection. A telephone on

34. CASSON, HISTORY OF THE TELEPHONE, *supra* note ___, at 211-213. Of course, that was not really her name. That was (mostly) her husband's name. But I digress.

35. Advertisement on file with author.

36. FISCHER, AMERICA CALLING, *supra* note ___, at 68.

37. Advertisement on file with author.

38. FISCHER, AMERICA CALLING, *supra* note ___, at 118.

a farm is the greatest obstacle to rural thieves..."³⁹ An ad from the 1940s says that telephone service is a bargain because it is "Advantageous to you because it saves time, steps, and trouble. Stands guard over the security of your home."⁴⁰

In the 1950s, an advertisement provided an entire narrative about the help of a night operator in responding to a call about a heart attack by arranging for a doctor, the state police, and an ambulance to go to the subscriber's home. The ad copy reads:

Out of the Night Came a Call for Help. Quick action of alert telephone operator helps save man with heart attack. It was about two o'clock of an August morning when the call flashed on the switchboard [rest of the story recounted]....Ever Ready...Ever Helpful. Day or night, rain or shine, the telephone stands ready to help you – in the everyday affairs of life as well as emergencies. This swift, willing worker will run your errands, guard your home, save countless steps and valuable time, and keep you in touch with relatives and friends.⁴¹

Early Bell salespeople based their pitches on the emergency uses of the telephone.⁴² This was "an appeal especially telling to parents of young children."⁴³ Fear sold telephones.

Today, of course, most residential calls are made to friends and family for sociable purposes. And the telephone industry now of course encourages social use of the telephone. But it is worth contemplating whether the original image of the telephone service provider—a beneficent central authority, providing too important a safety-oriented service to leave to amateurs or the vagaries of the marketplace—has lived on in the minds of the telephone companies and those of their familiar regulators.

The fundamentals of telephony have not changed since its introduction. Early on, a pair of wires made up a circuit from the user to the operator and the operator would then complete the circuit

39. FISCHER, AMERICA CALLING, *supra* note ___, at 119.

40. Advertisement on file with author.

41. Advertisement on file with author.

42. A 1935 sales manual put practicality and emergency uses first as sales arguments. Fischser, *Touch Someone*, *supra* note ___, at 43-45.

43. *Id.* at 43.

between two users based on a caller's request. Later, the female operator was replaced by automatic switching systems and the analog circuits were replaced by digital channels. But the overall operation and concept of the telephone network (the PSTN, or "public switched telephone network") remains the same. When a user requests it, a digital circuit is opened between users for the duration of their call. This circuit carries the bits of information they want to send, and, whether or not the any user is saying anything, the circuit stays open until the call ends. Use of circuit switching therefore relies on intelligence—routing and processing decisions being made—residing at the center of the network. Indeed, a fundamental goal of telephony switches is to maintain control over circuits. Every time a new service (like call waiting) is introduced, a tremendous amount of re-engineering of the network is required. For this reason, the scope of telephony services has not changed very much over the last fifty years. The idea of "someone in authority" standing between the user and the network, so prevalent in the early days of telephony, still exists.

B. *Internet Mindset*

The history of the development of the internet mindset is still being written. It is possible to tell this story along innumerable vectors (technology development, protocol release, internet access penetration), but America Online's (now AOL's) story is in an important sense the story of the development of the internet mindset.

As of August 1995, AOL's proprietary online service had three million subscribers.⁴⁴ According to a September 1995 Wired article, "The secret of AOL's success? Dead-stupid simple: figure out what people want most - and give it to them. 'It's easy to use, it's affordable, and it's got all the content you could want.'"⁴⁵ AOL's goal was not to provide open-ended information. "You want 'information'? Fine, check out CompuServe. But if you want to swap opinions on Medicare cuts or hang out with Courtney Love online, AOL's the place to go."⁴⁶

AOL initially forged partnerships with key companies to provide brand name content (like The New York Times and NBC) on the AOL

44. AOL, *Who We Are*, available at <http://www.corp.aol.com/whoweare/history.shtml>.

45. Mark Nollinger, *America, Online!*, WIRED, Sept. 1995 (quoting media analyst Paul Sweeney), available at <http://www.wired.com/wired/archive/3.09/aol.html>.

46. *Id.*

online service. This worked well when average users perceived themselves to have very few choices about where to go online, and AOL could successfully sell access bundled to its proprietary content (\$9.95 a month for five hours of access plus \$2.95 for each additional hour in 1995).⁴⁷

And in 1995 AOL was convinced that proprietary online services feeding content to users would be the future of the internet. Steve Case, the then-CEO of AOL, strongly believed that letting users “roll their own” content online was “going to be too much of a hassle for Mr. and Mrs. Average Online Consumer.”⁴⁸ Case told Wired that his long experience with the consumer mind-set told him that “the key 93 percent of [then-] unconnected households” wasn’t going to be interested in going online to have an unmediated experience.⁴⁹ Case said, “I think a subset of the 7 percent wants that. The people I talk to who don’t yet use online services don’t use them because they are still a little scared of them. Making it more complicated for people to connect and use the service, giving them a bewildering array of options to pick from - it’s hard to imagine that’s going to help.”⁵⁰ In other words, going online should be like picking up a telephone or bringing in the morning paper.

AOL didn’t ignore the internet’s content, of course. The company integrated its web browser into the AOL interface. Wired liked this approach, describing it as a “slick move”: “Since members can access the Web from inside AOL content areas, home pages seem as much a part of the service as any of its proprietary offerings. The message to users: America Online and the Web are one and the same.”⁵¹

But the idea in 1995 was that the web was really a subset of America Online. The company’s key strategy was to provide “‘personalized’ information, backed up by snazzier sound, graphics, and video” to their subscribers.⁵² And to advertise to those subscribers in a thousand different ways.⁵³ AOL planned to build “communities” inside their online service that would draw subscribers in and keep them there.⁵⁴ Ted Leonsis, an AOL executive, in 1995 triumphantly

47. *Id.*

48. *Id.*

49. *Id.*

50. *Id.*

51. *Id.*

52. *Id.*

53. *Id.*

54. *Id.*

compared AOL to the Carnival Cruise company – a provider of a safe, comfortable trip to familiar places, with the breath of exotic adventure in the air, but without any real interaction with the exotic locations once you got there.⁵⁵ AOL's advertising campaigns focused on the company's ability to make it easy and convenient for ordinary consumers to go online.⁵⁶

As of January 1996, AOL remained confident that it had chosen the right path. Ted Leonsis again: "I believe that today the Web is an anti-market. No one is paying for direct-dial access."⁵⁷ The Leonsis view was that people would pay money to access chat rooms and information branded and packaged by AOL. "Value will be defined via a kind of integrated approach, as opposed to just launching people onto the Internet."⁵⁸ As Simson Garfinkel noted, "AOL . . . is modeling its future on today's big media corporations. With high production values and brand awareness, the company believes that it can become as successful as a major television network."⁵⁹

Meanwhile, AOL was having trouble hanging on to its subscribers. In the last quarter of 1995 AOL added 1.8 million new members, but lost 950,000, leaving a net gain of 880,000. Because it was revealed that AOL was spending an enormous amount to acquire customers but then amortizing these expenditures as capital expenses, AOL's stock lost more than 27% of its value in the month of May 1996. In July the company was forced to change its prices (to \$20 per month for twenty hours of access), and in December 1996 it was forced to change again (to \$19.95 for unlimited access).⁶⁰ By January 1997 AOL was under siege, embattled by customer complaints and state attorney general investigations, both for its failure to provide adequate connectivity and for its creative accounting practices.⁶¹

But AOL improved its connectivity for subscribers, and soon began to gain a million new subscribers a month, many of whom had been

55. *Id.*

56. Leslie Walker, *Rivals Cede Throne to AOL*, THE WASHINGTON POST, E1 (Apr. 8, 1999)..

57. Simson Garfinkel, *Are Online Services Dead?*, Jan. 1996, available at <http://underground-online.troybrophy.com/iu/archive/issue2/aoldead/>.

58. *Id.* "Researchers also grossly underestimated the size of the electronic commerce marketplace. In 1995, Jupiter Communications projected \$3.1 billion in annual business-to-consumer revenue for e-commerce by 1998. Forrester predicted \$2.3 billion. The real number turned out to be more than \$13 billion." Evan Schwartz, *OOPS! The Five Worst Predictions of the Internet Age*, available at <http://www.digitaldarwinism.com/5worst.html>.

59. Simson Garfinkel, *Are Online Services Dead?*, *supra* note ____.

60. See <http://www.aolwatch.org/seidsays.htm>.

61. See <http://www.aolwatch.org/list/0035.html>.

attracted by AOL's flat-rate "all you can eat" pricing. By 1999, AOL "was worth twice as much as Berkshire Hathaway, and more than McDonald's, Philip Morris and PepsiCo combined."⁶² By 2000 AOL had 20 million subscribers,⁶³ and announced it would buy Time Warner Inc. for \$106 billion.⁶⁴ Four years and three months after the announcement of the acquisition, and after a loss of \$225 million of shareholder value, Time Warner dropped AOL from its name.

In the meantime, Yahoo!, Google, eBay, and other online companies had grown enormously, and consumer internet adoption had become widespread. Where in 1997 only a quarter of computer users in the U.S. (27 percent) had used the internet, by March 2000 81 percent of computer users had been online.⁶⁵ As of December 1999, one out of five people said the internet had decreased their newspaper-reading time, and half said they were watching television less.⁶⁶

Now the numbers are even more impressive. Sixty-seven percent of all American adults are now online, and the numbers for men and women are very similar.⁶⁷ As of the end of 2004, at least 70 million US adults used the internet in innumerable ways—to send email, read the news, look for travel deals, gamble, and many other things. That's a 37 percent increase in the number of online US adults over 2000.⁶⁸ What had happened? The internet had become mainstream, just as Steve Case and Ted Leonsis had promised it never would. As just one example of this mainstream trend, the number of weblogs has grown explosively. Indeed, blog readership grew by 58% in 2004, and 7% of American internet users say they have created a blog.⁶⁹ A third of Americans (or 50 million people) have visited blogs.⁷⁰

62. Nina Munk, *Steve Case's New Act*, THE NEW YORK TIMES, Jun. 19, 2005.

63. AOL, *Who We Are*, available at <http://corp.aol.com/whoweare/history.shtml#2000..>

64. Chris Gaither, *AOL Opening Up to Reconnect to Web Masses*, LOS ANGELES TIMES, Apr. 3, 2005.

65. Alicia Shepard, *Get Big or Get Out*, AMERICAN JOURNALISM REVIEW, Mar. 2000, available at <http://www.ajr.org/Article.asp?id=528>.

66. *Id.*

67. Pew Internet & American Life Project, *Demographics of Internet Users*, May 18, 2005, available at http://www.pewinternet.org/trends/User_Demo_05.18.05.htm.

68. Pew Internet & American Life Project, *Internet Evolution*, Jan. 25, 2005, available at http://www.pewinternet.org/PIP/r/148/report_display.asp

69. Pew Internet & American Life Project, *"The State of Blogging*, Jan. 2005, available at http://www.pewinternet.org/pdfs/PIP_blogging_data.pdf.

70. Antone Gonsalves, *Nearly a Third of Online Americans Have Visited Blogs*, INFORMATIONWEEK, Aug. 8, 2005, available at <http://www.informationweek.com/story/showArticle.jhtml?articleID=168600007> ("Blogspot.com's 19 million unique visitors amounted to more visitors than the NYTimes.com, USA Today.com and WashingtonPost.com.")

Bringing the story back to AOL, it has become clear that the business case for a proprietary online service is weak. Steve Case's 1995 predictions have not turned out to be true. U.S. web users do not use their online connections to receive "content" as in a proprietary network. What they do is interact—communicate—and build content and communities of their own. A March 2004 Pew Internet & American Life report found that 44 percent of adult American internet users have contributed material to the internet, which translates to roughly 53 million individuals. Of those that published something online, 21 percent have uploaded photographs; 10 percent have posted to newsgroups; and 13 percent maintain their own web sites.⁷¹ Millions of Americans are in fact interested in "rolling their own"; finding content they care about, posting their own material, and communicating with groups that are not necessarily subscribers to the AOL service. Every day, five million Americans put up their own material online. Four million use a P2P application of some kind. It's more normal to be online than offline.⁷² Yahoo! has unleashed "social search" services that filter searches through users' communities of friends, adopting an idea first implemented by Joshua Schacter's deli.cio.us.⁷³ So the internet not only packetizes chunks of data but also fragments "content" sources—thus substantially disintermediating the role traditionally played by proprietary media.

Howard Rheingold in 1992 predicted the rise of virtual communities:

The age of the online pioneers will end soon, and the cyberspace settlers will come en-masse. Telecommuters who might have thought they were just working from home and avoiding one day of gridlock on the freeway will find themselves drawn into a whole new society. Students and scientists are already there, artists have made significant inroads, librarians and educators have their own pioneers as well, and political activists of all stripes have just begun to discover the power of plugging a computer into a telephone. . . . We'll be able to transfer the Library of Congress from any point on the

71. Pew Internet & American Life Project, *Content Creation Online*, Mar. 2004, available at http://www.pewinternet.org/pdfs/PIP_Content_Creation_Report.pdf.

72. *Id.* see also Pew Internet & American Life Project, *Internet Status*, 2005, available at http://www.pewinternet.org/pdfs/Internet_Status_2005.pdf.

73. IDG News Service, *Yahoo Introduces 'Social' Search Engine*, Jun. 29, 2005, available at http://news.yahoo.com/news?tmpl=story&u=/pewworld/20050629/tc_pcworld/121651. See <http://deli.cio.us.com>.

globe to any another point in seconds, upload and download full-motion digital video at will. But is that really what people are likely to do with all that bandwidth and computing power? . . . One possibility is that people are going to do what people always do with a new communication technology: use it in ways never intended or foreseen by its inventors, to turn old social codes inside out and make new kinds of communities possible.⁷⁴

Users are indeed finding all kinds of “virtual communities” online, from online dating sites (whose popularity is now waning, but similar applications that combine cell phones with maps and locations and friends-of-friends buddy lists are hugely popular)⁷⁵ to social networking areas, to virtual worlds. The use of wikis is growing and shared spaces of all varieties are booming, including, most recently, well-trafficked spaces for photos and video.⁷⁶ The idea of collaborating online is taking hold with enormous force. Indeed, Wikipedia is a key example of online collaboration that has proved to be hugely popular. As of May 2005, it boasted 500,000 articles in English, 200,000 in German, 100,000 in Japanese, and more than 1.5 million articles overall (in 200 languages).⁷⁷ It is more popular than the New York Times web site, and is based completely on peer review and creation. Every entry is editable by anyone. Wikipedia may not be completely accurate, but it is a sign of things to come. Tags used to mark blog posts, web pages, and other online resources will allow the creation of many varied kinds of metainformation to be shared with communities and friends. As Clay Shirky explains, “Tags are simply labels for URLs, selected to help the user in later retrieval of those URLs. Tags have the additional effect of grouping related URLs together. There is no fixed set of categories or officially approved choices. . . . The addition of a few simple labels hardly seems so momentous, but the surprise here, as so often with the Web, is the surprise of simplicity. . . . By forgoing formal classification, tags enable a huge amount of user-produced organizational value, at vanishingly small cost.”⁷⁸ Individuals are creating value for themselves

74. Howard Rheingold, *A Slice of Life in My Digital Community*, 1992, available at http://www.eff.org/Net_culture/Net_info/EFF_Net_Guide/EEGTTI_HTML/eeg_260.html#FOOT6.

75. See www.dodgeball.com.

76. See www.flickr.com.

77. Wikipedia, *Wikistats: Wikipedia Charts All Languages*, May 18, 2005, available at <http://en.wikipedia.org/wikistats/EN/ChartsWikipediaZZ.htm>.

78. Clay Shirky, *Ontology is Overrated: Categories, Links, and Tags*, May 2005, available at http://shirky.com/writings/ontology_overrated.html.

and others. In ten years, we will not need or use the now-popular term “social software,” because the value that is created through millions of decentralized human interactions online will simply be built into the applications and tools that we use.⁷⁹

Online users are learning how to help themselves. Growing numbers (close to 70%) of internet users have found applications that help them block pop-up ads, spyware, and spam, and almost 80% of “heavy” internet users use such programs.⁸⁰ More than half of those online have looked for “how-to” or “do it yourself” information online.⁸¹ And a much higher percentage of online Americans who have high-speed connections are looking for “do it yourself” information online – 69%.⁸²

In response to all of this, AOL has substantially changed its business model. Now that consumers are becoming uninterested in relatively expensive dial-up access to a proprietary “walled garden” service, AOL has begun to cut the costs of the infrastructure it needed for that access.⁸³ And the company is making much more money on online advertising, thanks in part to Time Warner’s recent acquisition of Advertising.com Inc.⁸⁴ But the most important shift AOL has made is to cease its dependence on its walled garden format.⁸⁵ Indeed, AOL’s grand strategy for boosting its 2005 revenue is to look more like Yahoo!.⁸⁶ AOL.com has been relaunched as a “portal” to online content that is now available to non-subscribers for free.⁸⁷ This new portal offers instant messaging and email services as well as content (including the enormously popular stream of July 2005’s Live8

79. Clay Shirky, *More on Social Software As a Term*, Jan. 2005, available at http://www.corante.com/many/archives/2005/01/22/more_on_social_software_as_a_term.php.

80. Arbitron/Edison Media Research, *Internet and Multimedia 2005: The On-Demand Media Consumer*, 2005, 17, available at <http://www.edisonresearch.com/home/archives/Internet%202005%20Presentation%20Final.pdf>.

81. Pew Internet & American Life Project, *Do-It Yourself Information Online*, Jun. 2005, available at http://www.pewinternet.org/pdfs/PIP_DIY_June2005.pdf.

82. *Id.* (“More internet users seek do-it-yourself information online than participate in chat rooms (17% say they have done that) or online auctions (24% say they have done that). However, seeking do-it-yourself information online is a less common activity than getting news (72% of online Americans have done that) and doing research on products and services (78% have done that.”)).

83. *America Online Gets Clicking*, BUSINESSWEEK, Jul. 12, 2004.

84. *Id.*

85. Chris Gaither, *AOL Opening Up to Reconnect with Masses*, LOS ANGELES TIMES, Apr. 3, 2005.

86. Stephanie Mehta, *The New AOL Looks Like the Old Yahoo*, FORTUNE, Dec. 27, 2004.

87. Juan Perez, *AOL Readies Amped-Up Web Portal*, PCWORLD, Jun. 17, 2005, available at <http://www.pcworld.com/news/article/0,aid,121432,00.asp>.

concert).⁸⁸

AOL helped millions of people find their way online in the U.S., but many of those millions have now found that both the open web and the other people using that web have a great deal to offer. Access to mediated content is no longer (by itself, at least) driving AOL's business plans. But AOL may still be missing what is actually happening online: the creation of editorial value by users themselves.

At any rate, it is clear that consumers are getting much better at making their own choices than the AOL of 1995 predicted they would be. Today more than 60% of Americans are online, and they want access and interactivity. Not Carnival Cruises. Steve Case was wrong to view the internet as a telephone.

The internet is not a telephony network in part because it is “packet switched” rather than “circuit switched.” This distinction is important, because it means that the network itself is providing no guarantees of service. The Internet Protocol (or IP)⁸⁹ can be understood as a language that allows the division of all communications into small packets that are then individually routed, one hop at a time, to their destination—without any router knowing more than where the next hop is. In comparison to telephony, IP traffic is extremely efficient. Because internet traffic has been packetized, there is no need for it to occupy a line for the full duration of an exchange. Instead, you can use the line just for the milliseconds needed to transmit the packet. And because each packet has a unique source and destination address embedded in its header, simultaneous conversations can coexist on the same line without interfering with one another. On the same underutilized piece of copper that is carrying a single phone call, hundreds of email exchanges can occur.

Unlike in a telephony network, in which transport and applications are inextricably intertwined, the non-discrimination principle of the internet dictates that all forms of physical/infrastructure layers can or will permit logical layers to run across them.⁹⁰ Thus, fiber-optic

88. David Bauder, AP, *Best Live 8 Viewing To Be Found Online*, Jul. 2, 2005 (“Television seemed shockingly old-fashioned in how it followed Saturday’s worldwide concert for poverty relief. AOL’s coverage was so superior, it may one day be seen as a historical marker in drawing people to computers instead of TV screens for big events.”)

89. IP is “the protocol used to route a data packet from its source to its destination via the Internet.” Red Hat Documentation, Red Hat Glossary, at <http://www.redhat.com/docs/glossary/>.

90. See Lawrence B. Solum & Minn Chung, *The Layers Principle: Internet Architecture and the Law*, 79 NOTRE DAME L. REV. 815, 822 (2004) (noting that layers are key architectural element of the internet and drive normative conclusions about internet regulation).

infrastructure or wireless connections will permit TCP/IP to work. In turn, the logical layer, which contains the protocols that divide up packets and reconstruct them into messages or web pages, is not (in principle) supposed to discriminate against particular applications that use that logical layer. And applications are not (in principle) supposed to discriminate against particular forms of content.⁹¹

Implementation of the layers principle (e.g., not allowing the transport layer to discriminate against any of the three levels above) permits the end-to-end principle first articulated in an important paper by Jerome Saltzer, David Reed, and David Clark in 1984 to flourish.⁹² The end-to-end principle suggests that communications -- information -- ideally should not be filtered or changed or operated on by the network itself, but only by the edges, at the level of client applications that individuals set up and manipulate.⁹³ This end-to-end principle, like the layers principle, keeps bits flowing freely across the lower levels of the protocol stack, to be processed only when they get much closer to the end-user -- the edge of the network.

Where a central telephone provider must provide enhanced functionalities at a physical termination point, IP network design is flat and highly decentralized, allowing substantial innovation to occur at the edges of the network. Unlike telephony switches, internet switches are not designed to maintain control or accountability over circuits, or even remember anything about the packets that pass through them. Instead, internet routers and switches are designed only to forward packets toward their destinations. IP makes possible rough interoperability between networks and layer independence.

The miraculous growth of the internet has in large part come from the nondiscrimination against higher levels that is part of the lower layers' architecture. Innovators at the application layer have been able to assume the continued stable existence of the lower layers, and have not had to provide for either transport or logical protocols in order to spread their applications. Similarly, innovators at the protocol layer have been able to come up with new standard ways of tagging data

91. *Id.* The layers concept has recently become a suggested model for regulatory intervention. In early 2004, MCI issued a paper suggesting that cable and telephone providers be required to make their networks available to others on a wholesale basis, citing (and relying on) the layers principle. 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 (2004).

92. Jerome H. Saltzer, David. P. Reed, & David. D. Clark, *End-to-End Arguments in System Design*, 2 ACM TRANSACTIONS ON COMPUTER SYSTEMS 277 (1984).

93. See also David Isenberg, *Rise of the Stupid Network*, COMPUTER TELEPHONY, Aug. 1997, available at <http://www.rageboy.com/stupidnet.html>.

without having to worry about changes to the lowest transport layer that would render these new protocols unworkable. Arguably, yet another layer is now evolving that facilitates the formation of complex social groups based on exchanges of bits and effective use of the metainformation that is generated by these exchanges. That new layer is contributing importantly to the worldview of online users, which is shaped by decentralized collaboration and creation.

Users of online connections constantly customize the “services” of others for themselves, by shifting their attention from window to window, following the advice of others about where to go, and using all kinds of readers, aggregators, and collaborative filtering mechanisms to assist their online explorations and work. Users choose what to do online, aided by others.⁹⁴ In fact, “consumers” online are more empowered than ever before.⁹⁵

Users of the internet, particularly those who spend time contributing to online content rather than simply watching what major media sites provide, have begun to imagine a large community of which they are a part: the millions of literate internet users who read and write their languages. (Problems of translation have still not been overcome, so it continues to be difficult to imagine a community outside of any one user’s language abilities, except in the most general, holding-hands-across-the-world way.) For example, the December 2004 tsunami led to an enormous, simultaneous outpouring of English-language community support (50% of financial contributions to the tsunami relief effort were made online), and the creation of innumerable blog entries, picture and video galleries, and memorial sites. The July 2005 London transit bombing produced a similar outpouring. These events provided confirmation of the reality of this online community, moving simultaneously through time together.

Such confirmations happen every instant online. Individual bloggers write to their readers with an intimacy (and, often, irony) that is unfeigned, as though their relationships were completely ordinary and necessary. “You understand – we are part of the same online world,” is

94. See Jack M. Balkin, *Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society*, 79 N.Y.U. L. REV. 1, 8 (2004) (noting possibilities for consumer production created by the digital revolution).

95. Yochai Benkler, *From Consumers to Users: Shifting the Deeper Structures of Regulation Toward Sustainable Commons and User Access*, 52 FED. COMM. L.J. 561 (2000). Use of the word “consumer” denigrates online individuals, so that, in the words of Jerry Michalski, “All I am is a wallet with a gullet and eyeballs.” Deborah Carter, *Weaving a New Societal Fabric*, DIGITAL CITY SOUTH FLORIDA (reporting on 1998 closing keynote address by Michalski), available at <http://www.digitaledge.org/connections98/>.

the subtext. There appears to be a form of non-geographic (yet “national”) societal imagination at work online.

Benedict Anderson, in his 1983 book, “*Imagined Communities: Reflections on the Origin and Spread of Nationalism*,” argued that “national” identities became possible when people left behind three axioms: “the idea that a particular script-language [such as Latin] offered privileged access to ontological truth,” the notion that “society was naturally organized around and under high centres – monarchs who were persons apart from other human beings,” and the concept of time running equally from the beginning of the world and the beginning of men, “making cosmology and history indistinguishable.”⁹⁶ Anderson’s thesis is that when these three ideas were thrown off, the rise of vernacular printing practices made the existence of national consciousness possible in the late 18th century in several countries all at once.⁹⁷ Human lives became firmly rooted “in the very nature of things,”⁹⁸ and it became possible to think of nations as full of comparable institutions and persons all speaking the same language – even though no one person could possibly know everyone in his or her “nation.” For the first time, novels could be written that imagined hundreds of people, all the same “nationality,” simultaneously thinking about a single large event.

It appears that the same kind of development may be taking place online. Online users do not now believe, if they ever did, that only the true software writers or techies (the Latin-speakers) are allowed to publish or create online. Nor do they believe that there are any monarchs or sovereigns who are apart from the rest of the online population. Nor, of course, do they believe that the life of the online medium (the internet’s “cosmology,” if you will) and the history of man are one and the same. Meanwhile, there is an explosion of “vernacular” publishing in the online world. New web hosts are added every second, and more and more collaboration is occurring. More importantly, those online think of this online world (or nation) as full of horizontally comparable institutions (blogs, picture galleries, zoos, museums, newspapers, information sources).

96. BENEDICT ANDERSON, *IMAGINED COMMUNITIES: REFLECTIONS ON THE ORIGIN AND SPREAD OF NATIONALISM* (Verso: 1991) [hereinafter, ANDERSON, *IMAGINED COMMUNITIES*].

97. ANDERSON, *IMAGINED COMMUNITIES*. Anderson also makes the point that “pilgrimages” to “national” sites made national consciousness grow as well. The online analogies to this argument are fascinating – the well-traveled sites at the top of the Zipf power curve for English speakers (and writers) may be destinations for pilgrimages. The identity of these sites changes over time. We never go to AltaVista any more. But everyone (for now, at least) goes to Google, the capital of the netizen nation.

98. ANDERSON, *IMAGINED COMMUNITIES*.

Far-fetched as it may seem to be to talk about an online form of “nationalism,” it is beyond question that the same kind of language could never be applied to telephony. People using phones (not to mention the people running the telephone systems) do not think of themselves as participating in a collective, collaborative activity together with many others, and do not imagine that they are moving through time together with other telephony users. These two worldviews – telephony and internet -- are very different.⁹⁹

II. REGULATORY DIRECTION

Based on these telephony and internet histories, what kinds of regulations can we expect these two different mindsets to produce?

A. *Telephony Regulation*

Telephony is a highly regulated industry. Common carriers¹⁰⁰ providing “telecommunications services,”¹⁰¹ like the Regional Bell Operating Companies that were formed in the wake of the AT&T breakup in the early 1980s, are subject to a wide variety of requirements. They cannot interfere with transmissions over their lines, have to interconnect with rival telecommunications carriers, must

99. Orin Kerr’s 2003 article, *The Problem of Perspective in Internet Law*, 91 GEO. L. J. 357, 363 (2003), illuminated “internal” and “external” perspectives on internet law, pointing out that the “internal perspective” of a user’s visit to amazon.com (like visiting a store) is quite different from the “external perspective” of the wires and networks used in accessing amazon.com’s website (like “calling Information and asking for amazon.com’s phone number, then dialing the number and asking the representative to send you the latest Amazon.com catalog”), and noting that how the facts are modeled has implications for the decisions of courts and legislators. In a sense, the telephony mindset is similar to Kerr’s “external” perspective, because it sees the internet as just another network. But I am taking the further step suggested by *The Problem of Perspective*: even if you take the external perspective on the internet, and ignore the user’s view of his own experience, what normative beliefs do you hold about whether someone needs to be in charge of that network? The telephony perspective assumes that someone needs to be in charge; the internet perspective does not.

100. The Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified at scattered sections of 47 U.S.C.) [hereinafter Telecommunications Act] defines “common carriers” as “any person engaged as a common carrier for hire.” 47 U.S.C. § 153(h). The self-referential nature of this definition has frequently been remarked upon. James Speta, *A Common Carrier Approach to Internet Interconnection*, 54 FED. COMM. L.J. 225, 265 (2002).

101. “Telecommunications services,” which are subject to Title II regulations under the 1996 Telecommunications Act, are defined 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.” See 47 USC §§ 153(43) & (46) (2001) (definitions of “telecommunications” and “telecommunications service”).

charge just, reasonable, and nondiscriminatory rates, must comply with FCC obligations for filing and abiding by written tariffs, must pay into the universal service fund (discussed at __, *infra*), and are subject to obligations under CALEA to build their networks so that law enforcement agents can easily monitor them.¹⁰² The tradeoff for all of these constraints has been the ability of common carriers to make money from their vertically-integrated, proprietary networks. Indeed, telephony regulation has been primarily aimed at preventing abuses of market power by these carriers.

Regulation has shaped the telephony industry, and the industry has shaped its regulation. The industry is very used to monetizing its own network while remitting some of these funds to its regulators and opening in grudging ways to those who want to interconnect. But those with a telephony mindset always have in mind that the network is “theirs,” and that anyone using that network does so with their permission (or as a result of a regulatory decree). Litigation over what network providers should be obligated to do in the way of interconnection (sharing access to their network) under the Telecommunications Act is constant and hard-fought.¹⁰³

As broadband access to the internet has become more of a commodity service (with the real goal of access being “the internet” rather than the broadband provider’s customized services), and as prices for mere telephony services have plunged, telecommunications carriers as well as cable companies have been searching for new ways to monetize their networks. They are seeking policies that will allow them to control who uses “their” lines, and they are beginning to succeed.¹⁰⁴ Four regulatory fronts in this battle—having to do with emergency services, law enforcement pre-approval of services, removal of interconnection obligations, and payment of universal service fees—are described in Part III below.

As a technical matter, the telecommunications industry is hard at

102. See 47 U.S.C. §§ 201(a) and (b), 202(a), 203, 251(a), 254(d).

103. See, e.g., AT&T Corp. v. Iowa Utils. Bd., 525 U.S. 366, 389-90 (1999) (holding unlawful FCC’s first set of network unbundling rules); United States Telecom Ass’n v. FCC, 290 F.3d 415, 417 (D.C. Cir. 2002) (remanding unbundling rules); United States Telecom Ass’n v. FCC, 359 F.3d 554, 594-95 (D.C. Cir. 2004) (remanding unbundling rules).

104. See PAUL STARR, THE CREATION OF THE MEDIA: POLITICAL ORIGINS OF MODERN COMMUNICATIONS 193 (2004) (“In the rise of any new medium, a key factor is its relationship to the dominant technology of the day. Since organizations with a large stake in an existing technology are likely to try to preserve their investment—in today’s idiom, they are reluctant to “cannibalize” their current business—any policies or legal decisions that give them influence over the new medium may retard its introduction.”) [hereinafter STARR, CREATION OF THE MEDIA].

work on international standard-setting activities that would permit creation of an “operator-friendly environment for real-time, packet-based ... services that not only will preserve traditional carrier controls over user signaling and usage-based billing, but also will generate new revenue via deep packet inspection of protocols, URI [uniform resource identifiers—formatted strings that identify a resource] and content.”¹⁰⁵ “Deep packet inspection” means looking beyond the destination information carried by each packet to focus on packet’s payload—the content being transmitted, the application being used, and the protocol being ridden on—in order to make fine-grained discrimination possible. In other words, broadband access providers with a telephony mindset would like to reframe the internet as a controlled network by discriminating against (or charging for) the use of particular applications by their subscribers.

As a matter of mindset, technical direction, and sheer competitive desire, the telephony world is heading purposefully towards telephony-based “social policy” regulations for internet services. From a public policy perspective, there are strong arguments in favor of the telephony point of view. There have traditionally been “perennial mandates”¹⁰⁶ for communications services, and these mandates have been forcefully implemented over the last seventy years for telephony networks. They include public safety requirements (like E911, discussed below), disability assistance, law enforcement support (so that warrants can be carried out easily), privacy and data protection, and consumer protection against fraudulent billing and “slamming” activities.¹⁰⁷ These are important social goals. The question is whether (and how) to implement them for the internet.

The reality is that people with a telephony mindset run the networks that provide internet users—and their online mindsets—with

105. John Waclawsky, *IMS 101: What You Need To Know*, BUSINESS COMMUNICATIONS REVIEW, Jun. 2005 (describing the IP (or internet) Multimedia Subsystem under consideration at the ITU and supported by telephony service providers), available at <http://www.bcr.com/bcramag/2005/06/p18.php>.

106. Tony Rutkowski of VeriSign used the phrase “perennial mandates” in this connection in commenting on a blog entry authored by me, and went on to list many of the policies I have listed here. Tony Rutkowski comment on Susan Crawford blog, *Nethead/Bellhead Progress Report*, June 20, 2004, available at http://scrarfowd.blogware.com/blog/_archives/2004/6/20/92043.html#comments.

107. *Id; see also* IP NPRM at ¶ 5 (“other aspects of the existing regulatory framework—including those provisions designed to ensure disability access, consumer protection, emergency 911 service, law enforcement access for authorized wiretapping purposes, consumer privacy, and others—should continue to have relevance as communications migrate to IP-enabled services.”).

physical access to the internet. People with this mindset would like to implement particular policies for the internet for reasons other than (or in addition to) the intrinsic social value of these policies, and would like to implement them in traditional, telephony-technological ways. And the FCC is sympathetic to people with telephony mindsets who would like to see common carrier obligations lifted from the shoulders of telephone companies.¹⁰⁸ So far, this constellation of circumstances is producing a spate of telephony-minded and telephony-technology-based internet policies, as discussed in Part III below.

B. Internet Regulation

The internet mindset has resulted in a different approach to regulation. To date, the US Congress has acted with great self restraint in "regulating the internet," with some exceptions. It has shielded platform providers from liability for the information flows they do not create,¹⁰⁹ and has adopted relatively lightweight "notice and takedown" regimes for copyrighted materials inadvertently hosted or stored by platforms.¹¹⁰ The Internet Tax Freedom Act¹¹¹ has imposed moratoriums since 1998 (now extended to 2007) on state and local taxes on internet access and multiple or discriminatory taxes on ecommerce.¹¹² And Congress has to date not adopted a widely-applicable online privacy law, preferring instead to take a sectoral approach -- grappling with financial privacy¹¹³ and health privacy¹¹⁴-- that applies to both offline and online data.¹¹⁵ Special-purpose online laws like the

108. See Press Release, Federal Communications Commission, FCC Eliminates Mandated Sharing Requirement on Incumbents' Wireline Broadband Internet Access Services (Aug. 5, 2005) (removing interconnection and other common carriage obligations from DSL providers).

109. 47 U.S.C. § 230.

110. 17 U.S.C. §§ 512(c)(3), (f), (g).

111. Internet Tax Freedom Act, Pub. L. No. 105-277 (1998).

112. Internet Tax Nondiscrimination Act, Pub. L. No. 108-435 (2004), available at <http://thomas.loc.gov/cgi-bin/bdquery/z?d108:s.00150>:

113. Gramm-Leach-Bliley Act, 15 U.S.C. § 6801, *et seq.* (1999).

114. Health Insurance Portability and Accountability Act, Pub. L. No. 104-91, 110 Stat. 1936 (1996).

115. Its one excursion into a specialized online privacy law, the Children's Online Privacy Protection Act, 15 U.S.C. § 6503 (2004) has not been a success; many sites have elected simply not to provide interactive services for children under thirteen rather than cope with the exacting oversight and notice requirements of the Act. See Ben Charny, *The Cost of COPPA: Kids' Site Stops Talking*, ZDNET, Sept. 12, 2000, available at http://news.zdnet.com/2100-9595_22-523848.html?legacy=zdnn; Carrie Kirby, *Youth Privacy Net Law Takes Effect* (Many Web site operators worry they'll lose money on children's market), SAN FRANCISCO CHRONICLE, Apr. 21, 2000, available at <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2000/04/21/BU102542.DTL&type=business>). See also

"Controlling the Assault of Non-Solicited Pornography and Marketing Act of 2003" (or "CAN-SPAM Act")¹¹⁶ have not been effective; CAN-SPAM has not reduced the volume of unsolicited commercial email,¹¹⁷ although levels of compliance by reputable online retailers with opt out requests have proved to be quite high.¹¹⁸ At the same time, general-purpose offline law clearly applies to internet transactions and interactions. Terrestrial laws are being actively implemented, particularly in false advertising/fraud contexts, and there is no shortage of legal activity focused on bringing bad online actors to heel. Unlike the telephony approach, however, internet-minded policymakers in America have (for the most part) not created laws that are designed to constrain the operation or design of internet access or the devices that attach to the internet. To the contrary: Internet lawmaking has been aimed at avoiding making application, access, and device manufacturers into either common carriers (forced to open their systems to others) or publishers (forced to be accountable for expressions created made by others).¹¹⁹

Electronic Privacy Information Center, *The Children's Online Privacy Protection Act*, at <http://www.epic.org/privacy/kids/> (noting criticism: "Critics have claimed that the methods outlined by the FTC for verification - sending/faxing signed printed forms, supplement of credit card numbers, calling toll-free numbers, or forwarding digital signatures through email - are too costly, cumbersome, and inadequate in protecting personal information. Even though new technologies are being developed, the current verification methods are too slow and impractical. The process of verification of mails, emails, and credit card numbers may take over a day. Further, disclosure of credit card information will expose the parents to the same privacy risks that they are trying to protect their children from and deter them from using such online services in general. As a consequence, children may manipulate information to access these websites, and in the long run, online businesses may either eliminate children-focused sites.") A revised version of the foregoing text paragraph and notes appears in *Shortness of Vision*, to be published by the Fordham Law Review in 2006.

116. Pub. L. No. 108-187, 117 Stat. 2699 (Dec. 16, 2003), codified at 15 U.S.C. § 7707(b) et seq. See also Fact Sheet: President Bush Signs Anti-Spam Law (Dec. 16, 2003), available at <http://www.whitehouse.gov/news/releases/2003>

117. Tom Zeller, *Law Barring Junk E-Mail Allows a Flood Instead*, NEW YORK TIMES, Feb. 1, 2005 ("A year after a sweeping federal antispam law went into effect, there is more junk email on the Internet than ever... A survey from Stanford University in December showed that a typical Internet user now spends about 10 working days a year dealing with incoming spam.")

118. *Top E-Tailers' Compliance With CAN-SPAM's Opt-Out Provisions*, Federal Trade Commission, Division of Marketing Practices, Jul. 2005 (reporting 89% compliance with opt-out requests) (available at <http://www.ftc.gov/reports/optout05/050801optoutetailerspt.pdf>).

119. FCC policy has been to the same effect, until relatively recently. See Jason Oxman, *The FCC and the Unregulation of the Internet*, FCC Office of Plans and Policy Working Paper No. 31 (July 1999), available at http://www.fcc.gov/Bureaus/OPP/working_papers/oppwp31.pdf, at 22 ("As more services are offered that use the Internet Protocol in a packetswitched environment, it becomes increasingly difficult to determine where the telecommunications service ends and the information service begins. Despite this difficulty, however, it remains important for the FCC to maintain the unregulated status of data services

Social policies for the internet, from the internet mindset perspective, are those that are mandated by existing general-purpose laws. This leaves unanswered a crucial question: do we need new forms of special-purpose "social policies" for the internet, and, if so, what policies should be on this list?

III. FCC INTERNET SOCIAL POLICIES

The FCC has begun its work on internet social policies by focusing on three issues: availability of emergency 911 service, assistance to law enforcement, and funding of universal service. This Part describes how the Commission proposes to implement these social policies.¹²⁰

A. E911

In June 2005, the FCC issued an order mandating that, within four months, a particular category of online voice services (which it called "interconnected VoIP") supply "enhanced 911" (or "E911") capabilities to their customers.¹²¹ The E911 Order, in a nutshell, requires "interconnected VoIP" providers to deliver their customers' 911 calls to a "local" emergency operator, and to provide that operator with the callback number and location information of the customer. (The ability to provide location information and a callback number is the difference between ordinary 911 services and "enhanced" 911 services.)

In the E911 Order, the Commission said that it would decide later what its regulatory-classification basis for jurisdiction was (while asserting strongly that it had jurisdiction over "interconnected VoIP" providers). It said it would not shield "interconnected VoIP" providers from liability under state laws for mistakes occurring in connection with provision of emergency services. (Telephony providers, both wired and wireless, do have such liability protections by statute.)¹²² The E911

offered over telecommunications facilities.")

120. A fourth, related initiative, having to do with constraining the functioning of devices capable of retransmitting marked digital files over the internet (the "broadcast flag" rule) was struck down by the D.C. Circuit in mid-2005. Amer. Lib. Ass'n v. FCC, No. 04-1037 (D.C. Cir. May 6, 2005). See Susan P. Crawford, *The Biology of the Broadcast Flag*, 25 Hastings COMM/ENT 603 (2003) (describing broadcast flag proceeding and jurisdictional weaknesses of FCC's claims of authority to regulate design of devices capable of processing TV signals (including PCs)).

121. E911 Order, *supra* note ____.

122. E.g., Wireless Communications and Public Safety Act of 1999 Sec. 4(a), Pub. L. No. 106-81, 113 Stat. 1286 (1999) (providing wireless carriers, and their officers, directors,

Order did not set rates or otherwise control what the essential facility provider—the incumbent local telephone company, access to whose lines would be needed for such emergency services to function—could do to hold up a VoIP provider seeking access to the special emergency communications equipment whose use the E911 Order mandated. Not surprisingly, the E911 Order moves a social policy designed for telephony directly into the internet context, with very few efforts at customization.

Mandating that VoIP providers make available E911 services to consumers within four months was impossible (or nearly impossible) to do for most of the entities that make such voice services available, for several reasons.¹²³ The existing 911 infrastructure in the US (which is connected to but largely separate from the traditional phone network) is extremely antiquated, to the point where even wireless (e.g., cellular) companies have had great difficulty implementing 911. The 911 network has not fundamentally changed since the 1970s. The E911 Order gives “interconnected VoIP” providers no new rights that will help them comply, and does not obligate local telephone companies to allow them to connect to the essential “selective routers” owned by these telephone companies.¹²⁴ VoIP service providers have no right to access emergency call centers.¹²⁵ And the complexities of nomadic VoIP services (usable from any net connection anywhere in the world, using any area code, over any form of transport) make connection to the legacy E911 system difficult..

Briefly,¹²⁶ landline 911 works in this country because we have established a network of 6000 “Public Service Answering Points,” or PSAPs, whose staffs field 911 calls. Routing using the centrally-

employees, vendors and agents the same immunity or protection from liability as local exchange companies enjoy in the same jurisdiction).

123. See FCC's Deadline To Make VoIP Services E-911 Capable Will Be Difficult To Meet, WARREN'S WASHINGTON INTERNET DAILY, Jun. 9, 2005; Charlotte Wolter, Vonage CEO Citron: No One Can Meet FCC 911 Deadline, NEW TELEPHONY, Jun. 14, 2005.

124. See FCC Adopts Order Expanding E911 Regulation To Include Some VOIP Service Providers, TECH LAW JOURNAL, May 20, 2005, available at <http://www.techlawjournal.com/alert/2005/05/20.asp>.

125. See FCC Adopts Order Expanding E911 Regulation To Include Some VOIP Service Providers, TECH LAW JOURNAL, May 20, 2005, available at <http://www.techlawjournal.com/alert/2005/05/20.asp>.

126. As was the FCC itself, I am indebted to Dale N. Hatfield and his report, *A Report on Technical and Operational Issues Impacting the Provision of Wireless Enhanced 911 Services*, available at http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6513296239, prepared for the FCC in late 2002 [hereinafter Hatfield Report], for the description of 911 impossibilities that follows.

programmed switches mentioned above ensures that the 911 call goes to the right PSAP. But basic 911 calls do not arrive accompanied by location information or a callback number. This means that the PSAP operator has no way to call the complaining person back or send an ambulance to the right destination, unless the caller is able to describe his or her whereabouts and provide a number (something many people in an emergency are unable to do).

Using signals that automatically made analog queries to a billing database, PSAPs and local telephone companies were able to obtain the calling number. (This is what software developers would call a “kludge,” or inelegant work-around allowing a desired result.) A separate kludge was set up to allow PSAP equipment to automatically query an “Automatic Location Identification” database over a separate data circuit (separate from the call itself), telling the ALI the phone number that is calling in. The ALI then returns location information to the PSAP.

In time, local telephone companies were able to program “selective routers” to provide both a callback number and location information to a PSAP at the same time that the 911 call was coming in. Thus enhanced 911 (or E911) came into being, based not on digital signaling but on centralized router programming by phone companies.

Wireless carriers, who are not automatically connected to these selective routers unless they make arrangements to be, do not have selective routers of their own. They have to find ways to have accurate information provided to existing PSAPs, and the FCC and the wireless industry has been working since 1993 on wireless E911 arrangements. The details of these negotiations are not important, but the bottom line is that given the kludges and legacy systems in place for landline PSAPs it has proven extremely difficult to have E911 services implemented for wireless subscribers.¹²⁷

127. There are two phases to wireless E911 implementation – phase 1 (location of cell tower near 911 call provided to PSAP), and phase 2 (location of caller and callback number delivered to PSAP). According to the Hatfield Report: “Recall that in Phase I, the location information is simply the cell site/sector receiving a 911 call. In Phase I implementations, a set of unique pseudo telephone numbers is assigned to each cell site/sector. In a mobile wireless network, the equivalent of a wireline carrier’s End Office is known as a Mobile Switching Center (“MSC”). When a MSC receives a 911 call, a processor associated with the switch knows the cell site/sector where the call is coming from and selects an unused pseudo telephone number from the set associated with the cell site/sector. The MSC then forwards the call and pseudo telephone number to the E911 Control Office. The Selective Router Data Base contains information that associates the pseudo telephone number (and its associated cell site/sector) with a particular PSAP. The E911 Control Office or Selective Router then forwards the call with the pseudo telephone number to the PSAP’s CPE [the equipment on the premises]. When the MSC forwards the call to the E911 Central Office, the associated processor also sends (or

The complexities associated with requiring voice services running over the internet to provide E911 are mind-boggling. To be sure, the FCC has issued this requirement only with respect to services that (1) enable real-time, two-way voice communications; (2) require a broadband connection from the user's location; (3) require Internet Protocol-compatible equipment (a PC or a dedicated VoIP terminal); and (4) permit users generally to receive calls that originate on the traditional telephone network and to make calls to the traditional telephone network.¹²⁸ So a voice application that only sent data to the traditional telephone network, but did not receive data (was not itself accessed through a telephone number) would not be subject to this rule. (At least for the moment – the FCC has said it will examine whether the scope of this mandate should broaden, and it is very likely that a broader category of online voice services will soon be subject to this rule.)¹²⁹ But a free voice service that makes it possible for users to "call" traditional telephone numbers and receive "calls" from the network must find ways to get "location" and "callback" information to a "local" emergency center through a centrally-located and customized piece of hardware—the selective router.¹³⁰

Let us say you are sitting in London using an American online voice service with a Rhode Island number, and you are speaking to a friend in Singapore. Let us assume you get into some kind of trouble. How is the online voice application supposed to know who to tell, and what to tell them to do? The answer, for the moment, is that the online voice application is supposed to make arrangements through local phone companies and with all 6000 selective routers (which are in turn connected to their relevant PSAPs) to provide databases of location information and callback numbers—and that this location information is supposed to be provided and updated by the subscriber, even if the subscriber is going 90 miles per hour down a Montana freeway. (The FCC appears to be planning to require any VoIP capable

"pushes") the call back number of the mobile unit and Phase I location information to the ALI data base. When the PSAP's CPE receives the call and pseudo telephone number from the E911 Control Office it queries the ALI data base using the pseudo telephone number and receives in return the call back number and cell/site sector information. The call back number and location information is then displayed to the dispatcher." And that's just Phase 1.

128. This is the definition of "interconnected VoIP" set forth in the E911 Order at ¶ 24.

129. The E911 Order is followed by a NPRM [hereinafter E911 NPRM] that makes this suggestion at ¶ 58.

130. As the Commission notes, 911 systems "usually are based on a 25-year-old architecture and implemented with legacy components that place significant limitations on the functions that can be performed over the network." *Id.*, E911 NPRM, ¶ 59, at 34.

device (including PCs) to be able by June 2006 to *automatically* declare its location.)¹³¹ Voice providers will need to persuade the Bells to give them access to the necessary facilities through intermediaries (only “telecommunications services” providers are allowed access to these facilities) at a sensible cost, and load up routers and databases with the right information, without any protection from liability if they make mistakes. Compliance, most experts predict, will be sufficiently expensive to make it no longer worthwhile to do business for most VoIP providers.¹³²

And what exactly is a “VoIP provider”? As the discussion above made clear, the internet is indifferent to the nature of the applications that it carries. In turn, to each application one bit looks just like another.¹³³ So, for example, instant messaging platforms that include many straight data tools (text, maps, collective picture drawing, file sharing) can also easily include voice applications—which are also straight data tools.¹³⁴ The instant messaging (IM) user can talk to others to his or her heart’s content. Are IM providers “VoIP providers”? At the moment, the answer from the FCC is “Not necessarily,” because most of these applications do not make it possible to both send data to particular phone numbers and receive data “at” a particular phone number (and thus are not “interconnected” VoIP providers). But in time more of these applications may have this capability, or the FCC may broaden the scope of its rule to include them.¹³⁵ The FCC is already signalling that its definition of

131. In Paragraph 57 of the E911 NPRM, the Commission asks whether it should “require all terminal adapters or other equipment used in the provision of interconnected VoIP service sold as of June 1, 2006 to be capable of providing location information automatically, whether embedded in other equipment or sold to customers as a separate device?” This proposal has sweeping implications in terms of technology mandates, privacy, innovation, and other concerns. *See Part IV, infra.*

132. This may have implications for judicial challenges to the FCC rule. *See Section D, infra* for a discussion of FCC’s jurisdiction to enter the E911 Order.

133. By “bits,” I mean machine-readable representations of information. “Bit” is shorthand for “binary digit,” the smallest unit of information on a machine. A single bit can exemplify only one of two values: 0 or 1.

134. *See INFORMATIONWEEK*, May 16, 2005: “Spending by U.S. companies and public-sector organizations on voice-over-IP systems will grow to \$903 million this year, up from \$686 million in 2004, according to research firm Gartner. Investment in hybrid systems, which handle VoIP and conventional calls, will grow from \$1.5 billion to \$2 billion. By 2007, Gartner predicts, 97% of new phone systems installed in North America will be VoIP or hybrids. These statistics aren’t lost on the major Internet companies. America Online, Microsoft’s MSN division, and Yahoo are all entering the VoIP market, armed with services and capabilities that they’ve added to their popular instant-messaging software.” Yahoo! Messenger is already providing voice services to millions of people. *See* http://messenger.yahoo.com/feat_voice.php;_ylt=ApTb.fq0FHxac33BwQTBaOlnMMIF.

135. FCC is planning to promptly reconsider the scope of the application of E911

“interconnected VoIP” will broaden to include VoIP applications that are “capable of” connection to traditional telephone networks.¹³⁶ More fundamentally, there is no magic distinction between “voice” data and any other kind of data. Voice when digitized looks and acts just like any other data stream.

The requirement of emergency services for online “voice” services fits perfectly with the telephony mindset. From the very beginning of the history of telephony in the US, the essence of telephone service has been that it makes emergency help available from a central source. Telephones are there to watch over us in our sleep. Telephones are vigilant, centrally-controlled, located in an identifiable terrestrial place, and set up with services that the telephone company believes (or the government believes) are good ideas. Those who are steeped in telephony strongly believe that any communications service offered to the public must provide access to emergency officials and that technological developments must not be allowed to avoid this regulatory requirement. This point was made very clear at a dramatic FCC hearing on the day of the adoption of the E911 mandate, with one local emergency services employee saying:

We should never allow an embedded base of technology subscribers and users to grow out of control before wrestling the technological and policy challenges to the ground.

Any technology, any service offering, any entrepreneurial venture, that would seek to gain acceptance from the public should always have 911 and access to emergency services as its first item on the checklist before products and services are delivered to the consumer.¹³⁷

requirements. E911 NPRM ¶ 58. Most observers agree that there is no principled line to be drawn between one kind of VoIP and other services that also offer voice affordances, and that it will be very difficult to limit expansions of this mandate. This means that Skype, an extraordinarily popular online voice service that has been downloaded by more than 100 million people will likely soon be subject to E911 obligations. James E. Gaskin, *What Is Skype*, O'REILLY NETWORK, Aug. 4, 2005, available at <http://www.oreillynet.com/pub/a/network/2005/08/04/whatisSkype.html>.

136. FCC CALEA order, para. 39.

137. FCC open meeting, May 19, 2005, statement of John Melcher, Executive Director, Greater Harris County (Texas) 911 Emergency Network. In introducing Mr. Melcher, Chairman Martin referred to the “invasion” of voice over IP services.

It is hard to imagine that all online services (including newspapers and banks) should come provisioned with E911 service.

But the Commission was faced with a hard problem. Several widely-publicized incidents of deaths or injuries made more likely because users of Vonage's services were unable to reach 911 services occurred in the months preceding the Commission's adoption of the E911 mandate. Vonage calls itself "The Broadband Phone Company," and people involved in these incidents testified before an open Commission meeting to the effect that their expectation had been that they would be able to reach 911 operators just as with an "ordinary" phone. Their testimony was extraordinarily troubling. To the extent VoIP providers are marketing their services as replacements for traditional telephony, encouraging customers to use existing telephone handsets, and explicitly playing on consumers' expectations about "phone" service, then perhaps these providers should be required to provide E911 services or drastically change their advertisements so as to avoid consumer confusion. And where VoIP is being used as a substitute for a traditional phone (as wireless phones are now used as substitutes for landlines), E911 requirements may make sense.¹³⁸

Even if the Commission someday narrows the scope of this mandate to online voice services that are marketed as replacements for terrestrial phone service (an assumption that does not fit with the FCC's current trajectory), the FCC is directing these online services to use the existing, 30-year-old, physical infrastructure for E911, including centrally-programmed selective routers and kludge-y connections to customer-updated address information, without changing direction to account for the different capabilities of the internet and address the mobility of nomadic VoIP services. This seems unwise.

Starting in 2003, the National Emergency Number Association (NENA), the group that coordinates PSAP efforts, began working with online VoIP companies to develop more innovative solutions for E911 services.¹³⁹ A Voice on the Net (VON)/NENA 911 working group was

138. Note that it will be extremely difficult to ascertain which applications are becoming substitutes and which are not. This same difficulty exists in the CALEA domain, discussed in Section B *infra*, in which the FCC is claiming that "interconnected VoIP" services are becoming substitutes for local telephone services.

139. December 2003 NENA agreement with 8 X 8, AT&T Consumer Services, Broadsoft, Dialpad, ITXC (now TeleGlobe), Level 3, PointOne, Pulver.com, Vonage, and Webley, referenced in Voice on the Net Coalition, *9-1-1: Answering the Call for 9-1-1 Emergency Services in an Internet World, a 9-1-1 Primer and Progress Report on the VON/NENA Agreement*, Jan. 12, 2005, at 2, available at http://www.von.org/usr_files/911%20VON%20White%20Paper%201-12-05%20final.pdf.

established in 2004 to implement the NENA efforts. And several VoIP providers began deploying interim 911 services—something that took wireless carriers sixteen years to do. Meanwhile, the VON/NENA efforts resulted in plans to roll out an IP-based E911 service offering which would deliver location information and callback numbers to PSAPs automatically in real time via the internet (rather than connecting through the traditional telephone system). As of February 2005, the plan was for these services to include enhanced digital capabilities:

By upgrading to Internet Protocol (IP) based equipment, 9-1-1 calls could be accompanied by much more information, such as a callers' medical records, medical status, language preference, or maps of commercial buildings. With today's system, there is no way for end users to automatically inform emergency technicians that someone has Alzheimer's, or for a PSAP to receive photo or video images. In the future, VoIP 9-1-1 calls may be able to support not only voice but a variety of data and video features/functions.¹⁴⁰

The FCC's June 2005 Order cut off further development of these IP-based E911 services, and sent companies scrambling to figure out how to connect with a legacy, centrally-switched, telephony-based 911 system. Where the internet mindset would have encouraged development of innovative approaches to the 911 problem using new technology—and IP itself—that might have led to the provision of a more capable IP-based emergency response system for phone substitutes, this approach was completely discounted.

The FCC's suggestion that eventually all VoIP-capable applications and devices (including PCs) should be automatically reporting their precise locations should raise in the minds of internet exceptionalists (if they are paying attention) both substantial privacy concerns and worries

140. *Id.* Former FCC Chairman Michael Powell applauded these efforts: "The 9-1-1 system is vital in our country, but it has limited functionality. In most systems, it primarily identifies the location from which the call was made. But an Internet voice system can do more. It can make it easier to pinpoint the specific location of the caller in a large building. It might also hail your doctor, and send a text or Instant Message alert to your spouse." There are proposals beyond the VON work for emergency services based on instant messaging and other IP-based services. See, e.g., H. Schulzrinne, *Emergency Services URI for the Session Initiation Protocol*, published Feb. 2004, available at <http://www.ietf.org/proceedings/04aug/I-D/draft-ietf-sipping-sos-00.txt> (work in progress).

about technical mandates.¹⁴¹ As discussed below, the Commission has no authority to dictate the design of general-purpose computers, even if these machines can be used in ways that allow communications into the traditional telephone network. There are likely many potential technologies, including location-aware services, that will benefit society enormously but may never come into being because of broad telephony-minded emergency mandates. As with the E911 issue, there are substantial technical standard-setting activities underway that may be truncated because of the FCC's approach.¹⁴²

A darker, less public-service-oriented part of the telephony mindset is bent on squashing competitive services. Bell's own success was made possible by a strong patent and investors who were willing to fund what must have seemed like an endless flow of litigation. In the absence of an unassailable patent, today's telephony providers have had to find another approach to the enormous online voice marketplace. A cynic might find the E911 order an unprincipled and blatantly political move designed to protect the incumbents' ability to control the market for online voice services.

B. CALEA

The FCC ruled on August 5, 2005 that broadband internet access and "interconnected VoIP" services must be designed so as to make government wiretapping easier, under the terms of the 1994 Communications Assistance for Law Enforcement Act (CALEA).¹⁴³

141. E911 NPRM ¶ 58. This suggestion is another expression of the law enforcement desires for perfect information discussed in Section B, *infra*. Broadband providers could require that all devices attached to their networks be location-aware. Since 2000, more than eight states have enacted laws that allow broadband providers to limit the types of devices that may be attached to their networks. See <http://www.freedom-to-tinker.com/superdmca.html> (discussing state laws).

142. The IETF is working on modifications to the Dynamic Host Control Protocol to allow a device to be assigned location information by a network when the device first connects to that network. See, e.g., RFC 3825, "Dynamic Host Configuration Protocol Option for Coordinate-based Location Configuration Information," published July 2004, available at <http://www.ietf.org/rfc/rfc3825.txt>; H.Schulzrinne, Internet Draft, "Dynamic Host Configuration Protocol (DHCPv4 and DHCPv6) Option for Civic Addresses Configuration Information," published May 2005, available at <http://www.ietf.org/internet-drafts/draft-ietf-geopriv-dhcp-civil-06.txt> (work in progress) (both cited by the Center for Democracy and Technology in comments on the E911 Order).

143. Press Release, Federal Communications Commission, FCC Requires Certain Broadband and VoIP Providers to Accommodate Wiretaps, Order Stikes Balance Between Law Enforcement, Innovation, Aug. 5, 2005 (Washington, D.C.) [hereinafter CALEA Order]. The FCC's official Order on this subject is expected in late August 2005. The CALEA Order comes as part of a proceeding begun with the CALEA NPRM, *supra* note ___, that suggested that some

This decision clearly exceeds the terms of CALEA and poses substantial risks to innovation. A more telephony-minded social policy implementation for the internet is difficult to imagine. There is likely a more internet-minded way to implement this policy online.

Under the federal wiretap statute, all electronic communications—no matter whether they are in the form of faxes, emails, or VoIP calls—can be intercepted legally if a wiretap order has been obtained.¹⁴⁴ Any provider of any electronic communications service is required to furnish information and technical assistance for such an interception.¹⁴⁵ With the rise of digital telephony in the early 1990s, law enforcement was worried that new digital systems would be more difficult to tap than analog systems, and wanted to ensure that it would be able speedily to implement wiretap orders. Law enforcement may also have wanted to shift the cost of adjusting to different telecommunication carriers' systems to the carriers themselves.

After substantial narrowing negotiations, CALEA was enacted in 1994.¹⁴⁶ The Act requires that telecommunications providers -- common carriers of telephone communications¹⁴⁷ --(1) enable law enforcement, pursuant to a court order or other lawful authorization, to access "call-identifying information" that is "reasonably available" to the carrier, and (2) to deliver access to call-identifying information in a format that may be transmitted to a remote location. The goal of the statute is to standardize the forms of data delivered to law enforcement.

Even though the internet had not come into common use in 1994, Congress specifically elected to leave internet services out of CALEA's coverage.¹⁴⁸ With the increasing popularity of VoIP services, law

subset of IP-enabled services should be designed so as to assist law enforcement officials in implementing wiretap orders. The CALEA NPRM stated the Commission's reasoning as to the legal basis for its authority, and this section assumes that this reasoning has not changed.

144. Wire and Electronic Communications Interception and Interception of Oral Communications, 18 U.S.C. §§ 2510-2522 (1994). Thus, cable companies, broadband access providers generally, and VoIP service providers are all already subject to a surveillance assistance requirement. 18 U.S.C. § 2518(4).

145. *Id.*

146. Pub. L. No. 103-414, 108 Stat. 4279 (1994) (codified as amended at 18 U.S.C. § 2522 and 47 U.S.C. §§ 229, 1001-1010). Then-FBI Director Louis Freeh said during a joint congressional hearing on CALEA in 1994 that a broader bill covering all communications service providers had been "rejected out of hand." Joint Hearings before the Subcomm. on Tech. and the Law of the Senate Comm. on the Judiciary and the Subcomm. on Civil and Const'l Rights of the House Comm. on the Judiciary on H.R. 4922 and S. 2375, at 49 (Mar. 18 and Aug. 11, 1994).

147. 47 U.S.C. § 1001(8)(A)..

148. See 47 U.S.C. § 1002(b)(2); see also United States Telecom Ass'n v. FCC, 227 F.3d 450, 455 (D.C. Cir. 2000) ("CALEA does not cover 'information services' such as email and

enforcement became concerned that it would become difficult to wiretap online communications that, from their perspective, were equivalent to traditional telephone calls. In March 2004, the DOJ, the DEA, and the FBI filed a joint petition asking the FCC to begin a rulemaking proceeding focused on CALEA implementation for broadband access services and broadband telephony.¹⁴⁹ Following intense discussions with law enforcement authorities that were bound up in the FCC's need to have the DOJ take an appeal from the 9th Circuit's *Brand X* decision¹⁵⁰ to the Supreme Court (an appeal that the DOJ took fifteen months to bring), the Commission issued its CALEA NPRM.¹⁵¹

Extension of CALEA to broadband internet access and online voice applications is difficult as a legal matter, because there is an exemption under 102(8) of CALEA for "information services," and the Commission has classified internet access (and certainly "interconnected VoIP," instant messaging, and email) as "information services."¹⁵² FCC Commissioner Abernathy noted the weakness of the

internet access"; Telecommunications Carrier Assistance to the Government, H.R. Rep. 103-827(I), at 23 (Oct. 4, 1994) ("House Report") (CALEA obligations "do not apply to information services, such as electronic mail services, or on-line services, such as Compuserve, Prodigy, America On-line or Mead Data, or Internet service providers"). The Commission has found that information services "such as electronic mail providers and on-line service providers" are exempt from CALEA. *In the Matter of Communications Assistance for Law Enforcement Act*, Second Report and Order, 15 FCC Rcd 7105, at 26 (1999). More importantly, "call identifying information" is specifically *not* supposed to be available under CALEA where such information "may disclose the physical location of the subscriber" in the absence of a lawful court order (more than just a pen register or trap and trace order). Online, of course, all internet communications "may disclose" this information—IP addresses can sometimes perform this function, and the Session Initiation Protocol used for many VoIP calls may convey the physical location of the end user.

149. *In the Matter of United States Department of Justice, Federal Bureau of Investigation and Drug Enforcement Administration Joint Petition for Rulemaking to Resolve Various Outstanding Issues Concerning the Implementation of the Communications Assistance for Law Enforcement Act* (Mar. 10, 2004), available at <http://www.askcalea.net/docs/20040310.calea.jper.pdf> [hereinafter Joint Petition].

150. *Brand X Internet Servs. v. FCC*, 345 F.3d 1120 (9th Cir. 2003) (rejecting FCC determination that cable modem internet access is an "information service" rather than a "telecommunications service" as a matter of regulatory classification).

151. The judgment of the court of appeals was entered on October 6, 2003. Petitions for rehearing were denied on March 31, 2004. On June 16, 2004, Justice O'Connor extended the time within which to file a petition for a writ of certiorari to and including July 29, 2004, and on July 20, 2004, Justice O'Connor further extended the time within which to file a petition for a writ of certiorari to August 30, 2004. The Department of Justice Brand X petition for certiorari was not filed until days after the Commission had issued its CALEA NPRM. The obvious conclusion to be drawn from this timing is that law enforcement wanted the Commission's assurance that law enforcement's CALEA needs would be met, no matter what regulatory classification was applied to internet access. [Cite TechDaily articles]

152. FCC News Release, *FCC Eliminates Mandated Sharing Requirement on Incumbents' Wireline Broadband Internet Access Services, Decision Places Telephone and Cable*

FCC's legal claim when the CALEA NRPM was issued, saying:

The NPRM we are issuing proposes a plausible interpretation of the "substantial replacement" provision in CALEA that would extend the assistance-capability requirements to broadband access services and IP telephony. But such an extension clearly would be fraught with legal risk. *The Commission thus would benefit greatly from further congressional guidance in this area.*¹⁵³

There has to date been no further congressional guidance on this point, and it appears that the FCC is interpreting the CALEA statute to address online information applications—a category of technologies specifically excluded from CALEA's scope.¹⁵⁴ It is also likely that the FCC will extend the scope of its CALEA requirements even beyond "interconnected VoIP" (defined in the E911 proceeding to mean applications that are capable of both receiving calls from and making calls to the traditional telephone network) to other online applications with less direct connections to traditional phone numbers.¹⁵⁵ And filed comments in the CALEA proceeding suggest that law enforcement authorities are interested in having CALEA apply to all online applications.¹⁵⁶

Companies on Equal Footing, Aug. 5, 2005 (Washington, D.C.) ("the Commission determined that wireline broadband Internet access services are defined as information services functionally integrated with a telecommunications component.")

153. Action by the Commission August 4, 2004, by Notice of Proposed Rulemaking and Declaratory Ruling in ET Docket No. 04295 (FCC 04-187), Separate Statement by Commissioner Abernathy (emphasis supplied).

154. See CALEA Order, *supra* note ____ ("The Commission found that these services can essentially replace conventional telecommunications services currently subject to wiretap rules, including circuit-switched voice service and dial-up Internet access. As replacements, the new services are covered by the Communications Assistance for Law Enforcement Act, or CALEA, which requires the Commission to preserve the ability of law enforcement agencies to conduct court-ordered wiretaps in the face of technological change.")

155. E911 NPRM, ¶ 58 ("Are there any other services upon which the Commission should impose E911 obligations?").

156. Comments of the New York State Attorney General in CALEA NPRM, at 9-10; Comments of the United States Department Of Justice (filed Nov. 8, 2004), at 32-33 (involvement in any ongoing flow of information among internet users should be considered "management," and any online services may be included in this category -- not just those that interconnect with the traditional telephone network). Additionally, law enforcement has announced that it would like all airplane in-flight broadband services to be subject to CALEA, so as to make them immediately tappable. *In the Matter of Service Rules and Procedures to Govern the Use of Aeronautical Mobile Satellite Service Earth Stations in Frequency Bands*

Beyond the legal weakness of the FCC's quasi-legislative extension of CALEA, the anticipated Order's effects on innovation may be substantial. In effect, law enforcement seeks to ensure that the data fields, designs, and outputs to which it had access in the telephony world remain available as more of life moves online. What online services would be required to do to assist law enforcement along these lines remains quite unclear.

So far, law enforcement has refused to say what it means by "call identifying information" for the internet,¹⁵⁷ and has suggested that such information may be different for different entities.¹⁵⁸ Most critically for the future of the internet, law enforcement in the CALEA proceeding has made clear that it wants to ensure that it reviews all possibly relevant new services for compliance with *unstated* information-gathering and -forwarding requirements *before these services are launched*. All prudent businesses will want to run their services by law enforcement, suggests the DOJ:

Service providers would be well advised to seek guidance early, preferably well before deployment of a service, if they believe that their service is not covered by CALEA. . . . DOJ would certainly consider a service provider's failure to request such guidance in any enforcement action.¹⁵⁹

This is a threat: come negotiate with us first, or you will run the risk of being subject to penalties later. Law enforcement would like the discretion to negotiate with technology companies over what is meant by "call identifying information" and in what form it must be sent to them.¹⁶⁰ And, of course, innovators will not know to what standards

Allocated to the Fixed Satellite Service, IB 05-20 (Feb. 9, 2005). The agencies also asked the FCC to mandate many more obligations on in-flight broadband carriers, including the obligation to record all traffic information and retain it for 24 hours after a flight lands, authentication/registration mandates (including seat position) for all users of broadband aboard an aircraft, and "rules and/or policies concerning in-flight use of these [broadband] devices and related conduct to minimize any increase in air rage incidents which could potentially result from the unrestricted use of such devices on flights." *Comments of the Department of Justice, including the Federal Bureau of Investigation, and the Department of Homeland Security*, IB 05-20 (Jul. 5, 2005). It is surprising that law enforcement views the FCC as capable of minimizing air rage. Perhaps the Commission should also be responsible for the interstate highway system. After all, use of cell phones while driving can lead to road rage.

157. Comments of the United States Department of Justice (filed Nov. 8, 2004), at 42.

158. *Id.*, at 7.

159. *Id.*, at 36, 38.

160. The Department of Justice has stated that it prefers to use a secondary, negotiating

they are being held during these negotiations -- what "call identifying information" means on the internet, in what form service providers will have to provide it, or what tapping capabilities they will have to provide law enforcement. Most alarmingly of all, these negotiations will inevitably end up in design mandates; according to DOJ, "any definition of 'reasonably available' [call identifying information] should be based on the technical solutions a carrier and vendor *can* achieve when they first design the network, not on the unfortunate realities that prevail after a non-compliant network has already been constructed."¹⁶¹

As with the E911 Order, there are better, more internet-minded ways to get law enforcement the information it wants pursuant to lawful wiretap orders. Rather than requiring centralized, FBI approval of the design of all online applications prior to launch to ensure that they are easy to tap (something of which a telephony-minded person would instinctively approve), ISPs could make streams of data available that could be accessed by law enforcement only following issuance of a subpoena or other judicial order.¹⁶² Rather than forcing the standardization of data, law enforcement could learn how to understand traffic associated with particular people—already located by ISPs for them—once a subpoena has issued. It may be better to trust law enforcement to restrain itself in accessing data at the edge of the network rather than to force innovators to enter into negotiations with centralized law enforcement authorities over the development of new online services.

Law enforcement's appetite for data is insatiable, and we will need to find some internet-minded way of responding to their requests that balances respect for the rule of law with concerns about innovation. The internet, after all, provides law enforcement with potentially better, more detailed, and more quickly-available information than it

process under CALEA that can only take place after a particular service has entered the marketplace and been found wanting by law enforcement (the "deficiency process") to discuss the meaning of "call identifying information." *Id.*, at 42. This means that providers unwilling to negotiate in advance of launch risk having to have their product redesigned when it is already in use.

161. *Id.* (emphasis supplied). In many other places in its filing, DOJ makes clear that it is seeking pre-launch review of services that it might interpret are subject to CALEA obligations. For example, according to DOJ, "CALEA's purpose [is] to ensure solutions are built in pre-deployment." *Id.* at 21.

162. Indeed, DOJ has said that it is interested in having all ISPs store information for its use, and it is more than conceivable that the FCC could use its newly-enhanced "ancillary jurisdiction" over ISPs (discussed in Section D, *infra*) to ensure that this happens. Declan McCullagh, *Your ISP As Net Watchdog*, CNET NEWS.COM, Jun. 16, 2005, available at http://news.com.com/Your+ISP+as+Net+watchdog/2100-1028_3-5748649.html.

could ever have obtained offline. But it is applying telephony-based rules and assumptions to a changed IP world, with no regard to the consequences.

C. Universal Service

Another important demonstration of the Commission's telephony mindset when it comes to the internet will come with its reworking of "universal service"—a shorthand designation for a little-understood assemblage of implicit and explicit subsidies aimed at providing telephone service to all Americans, regardless of their remote physical location or their ability to pay.¹⁶³ Telecommunications carriers are required to pay into the universal service program an amount equal to a percentage of their interstate telecommunications revenue. That percentage—known as the "contribution factor"—is adjusted each quarter based on the projected demand for universal service support,¹⁶⁴ and results in a six billion dollar yearly payout by the FCC.¹⁶⁵ Since the breakup of the Bell System, which created a world in which different companies are providing different kinds of phone services for different populations, the idea of a cross-subsidized universal service program has made little sense, and for almost a decade, all involved (including the program's cheerleaders) have soberly agreed that the universal service system is irretrievably broken.¹⁶⁶ Universal service is a "maze of hidden

163. See 47 U.S.C. § 254; see also FCC explanation of "universal service," available at http://www.fcc.gov/wcb/universal_service/welcome.html. See MILTON MUELLER, UNIVERSAL SERVICE: COMPETITION, INTERCONNECTION, AND MONOPOLY IN THE MAKING OF THE AMERICAN TELEPHONE SYSTEM (1997) (thorough history of universal service, suggesting that universal service policies undertaken by the phone company did nothing to improve actual phone system coverage). The Telecommunications Act requires the FCC to establish rules designed to enhance access, "to the extent technically feasible and economically reasonable," to advanced telecommunications and information services for elementary and secondary school classrooms and libraries. 47 U.S.C. § 254(h)(2)(A). Recently, the FCC launched an inquiry into the Universal Service fund, seeking comments on how to better administer and manage the fund. USF NPRM, *supra* note ____.

164. For the third quarter of 2005, the Commission established a contribution factor of 10.2%. *Proposed Third Quarter 2005 Universal Service Contribution Factor*, Pub. Notice, DA 04-1664 (rel. June 14, 2005).

165. Jonathan Adelstein, Remarks at the 2004 National Governors Ass'n Winter Meeting (Feb. 22, 2004). This six billion dollar actual payout figure does not include the arcane and impenetrable implicit subsidies associated with the universal service system.

166. See *In the Matter of Federal-State Joint Board on Universal Service*, CC Dkt. No. 96-45 (Report to Congress), FCC 98-67, Apr. 10, 1998 ("Stevens Report"); Progress & Freedom Foundation Special Report, *The Myths and Realities of Universal Service: Revisiting the Justification for the Current Subsidy Structure*, Jan. 2005, available at <http://www.pff.org/issues-pubs/books/050118usfreport.pdf>.

cross-subsidies and regulatory charges”¹⁶⁷ that funds gravy-seeking rural carriers who are well-represented by influential officials.¹⁶⁸ “E-rate,” the one explicit universal service program mandated by Congress, has suffered enormously from reports of fraud and abuse.¹⁶⁹ And with more services migrating online, the FCC’s ability to reliably tax entities based on their interstate revenues and feed the fund is being steadily undermined.¹⁷⁰

Where will the money come from? Answer: from the internet. The Commission has ordered that “facilities-based” broadband access providers (entities that run their own infrastructure) must pay “existing universal service mechanisms based on their current level of reported revenue” for broadband transmission, even though this obligation was traditionally applied only to providers of “communications services”—common carriers—and broadband access providers have been exempted

167. See Testimony of Kevin Werbach, Senate Commerce Committee Voice Over IP Hearing, Feb. 24, 2004, available at <http://werbach.com/docs/senatevoip.html>.

168. Paul Davidson, USA Today, Nov. 17, 2004, “The regional Bell phone giants are struggling. AT&T and MCI are on life support. But tiny XIT Rural Telephone Cooperative is humming along nicely. The utility, which serves 1,500 ranchers, farmers and others in the Texas Panhandle, fared so well last year that it doled out a fat dividend to its customers, who also own it: an average \$375 - more than the average \$206 each customer paid in local phone fees. Meantime, the co-op took in \$2.6 million in federal universal service revenue. That’s what people across the USA pay, through an 8.9% fee on long-distance bills. It subsidizes service in rural areas, where it’s far costlier to run wires. . . . The Gambino crime family was able to fraudulently draw millions from the Universal Service Fund from 1996 to 2003 by controlling a Missouri rural phone firm.” Lawrence Gasman, *Universal Service: The New Entitlements and Taxes*, Cato Policy Analysis No. 310, available at <http://www.cato.org/pubs/pas/pa-310es.html> (universal service merely supports outmoded networks).

169. The E-Rate Program was created on May 7, 1997, when the Commission adopted a Universal Service Order implementing Sec. 254 of the Telecommunications Act for eligible schools and libraries. *Report and Order In the Matter Of Federal-State Joint Board on Universal Service*, CC Dkt. No. 96-45, Jun. 4, 1997. Marguerite Reardon, *Fraud Threatens Internet Program for US Schools*, CNET NEWS.COM, Jun. 17, 2004, available at http://news.com.com/Eroding+E-rate/2009-1028_3-5236723.html (“The largest scandal involving E-rate erupted in 2000, after officials discovered that Victor Fajardo-Velez, the former secretary of education for Puerto Rico, had mismanaged nearly \$100 million in E-rate subsidies.”); see also FCC Office of Inspector General Oct. 31, 2002 Semiannual Report (noting OIG concerns with inadequate bidding processes, absence of oversight, fraud, criminal investigations, and other problems with universal service funds).

170. See Matthew Dosch testimony, *The Future Of Universal Service: Hearing Before the Communications Subcomm. of the Senate Comm. on Commerce, Science and Transportation*, 108th Cong. (2003) (“[The] statutory combination of universal service support as a local telephone competition facilitation device, coupled with the limitation on universal service support contributions to only narrowly based interstate revenues, places extreme pressure on these federal universal support mechanisms. . . . [T]hese two factors alone will render the existing federal mechanisms unsustainable, in that demands for universal service support funds are increasing far more rapidly than interstate revenues are growing.”)

from all other common carriage obligations.¹⁷¹ The square-state senators who run the Commerce Committee (which has jurisdiction over the FCC's funding) will ensure that the universal service program is protected in perpetuity through indirect "taxes" on internet access and internet services. Indeed, the perceived need to fund universal service is likely driving the Commission's push to regulate internet services more broadly.¹⁷²

Charging IP-enabled services for universal service fees, without examining whether the universal service system itself can be changed (or even done away with) to better reflect the post-internet world, is unquestionably a telephony-minded thing to do. The universal service system is enormously inefficient and focused only on providing legacy (wired) forms of internet access ("more of the same," in the words of Andy Oram),¹⁷³ without looking to increasing access to computers or wireless solutions. Infusing universal service with a more internet-minded approach might result in disruption of some deeply corrupt rural telephone collectives known for skimming a large percentage of the funds coming through the system, but might also lead to a much more sensible approach that would support the good intentions of the program. It may be that rural Americans need wireless broadband access even more than they need subsidized yet extraordinarily expensive telephone service. And the program should be funded in a way that does not favor one competitor over another. As James Speta has noted, many have argued that "the least distorting mechanism would be a system funded through the general federal revenues."¹⁷⁴

D. Jurisdictional Conundrums

What is the source of the FCC's power to mandate telephony-minded "social policies" for internet services?

171. The FCC ruled on August 5, 2005 that facilities-based providers will be required to contribute in this fashion "for a 270-day period after the effective date of the Order or until the Commission adopts new contribution rules, whichever occurs earlier. If the Commission is unable to complete new contribution rules within the 270-day period, the Commission will take *whatever action is necessary* to preserve existing funding levels, including extending the 270-day period or expanding the contribution base." FCC News Release, *FCC Eliminates Mandated Sharing Requirement on Incumbents' Wireline Broadband Internet Access Services*, Aug. 5, 2005 (Washington, D.C.) (emphasis added).

172. Remarks of Andrew Pincus, former General Counsel, Department of Commerce, at *Bellhead/Nethead: The FCC Takes On the Internet*, Sept. 28, 2004.

173. Andy Oram, *Getting Universal Service to Work*, O'REILLY DEVELOPER WEBLOGS, Jul. 21, 2004, available at <http://www.oreillynet.com/pub/wlg/5217>.

174. James B. Speta, *Deregulating Telecommunications in Internet Time*, 61 WASH. & LEE L. REV. 1063 , 1149 (2004).

In March 2004, the FCC issued a very broad Notice of Proposed Rulemaking examining issues relating to services and applications making use of the Internet Protocol.¹⁷⁵ As I have noted elsewhere, the IP NPRM suggests that the Commission views its regulatory authority as extending to end-user software, network hardware, corporate and community websites and more, because all of these things use IP.¹⁷⁶ The E911 and CALEA statements by the Commission are the first two to emerge from this proceeding, and it is likely that a universal service order will be issued promptly.

As of the time this Article was being prepared, only the E911 order had been formally issued. In the E911 Order, the Commission's argument as to why it has jurisdiction over internet services relies primarily on its "ancillary authority" under Title I of the Communications Act.

The Commission divides all possible radio and wire communications into two broad categories: (1) telecommunications services, regulated under Title II of the Communications Act, and required to charge tariffed fees, pay into the universal service fund, and not discriminate against others who want to connect to them; and (2) information services. The FCC has taken the position in the past that all IP-enabled services of whatever description (save for the Internet Protocol itself, or "internet governance") fit into the information services category,¹⁷⁷ and therefore are regulated under its general powers (including its "ancillary" powers) under Title I. Commentators have even referred to "Title I" and "Title II" services.¹⁷⁸

175. IP NPRM, *supra* note ____.

176. *Id.*, n.1.

177. *Id.*

178. JONATHAN E. NUECHTERLEIN AND PHILIP J. WEISER, *DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE* 213 (2005). In the VoIP E911 context specifically (a subset of IP-enabled services), the FCC finessed the classification question, saying that it had not decided whether interconnected VoIP services were telecommunications services or information services, but that it analyzed E911 primarily under its Title I ancillary jurisdiction "to encompass both types of service." E911 Order, *supra* note ___, at ¶ 22. It is astonishing for the Commission to avoid deciding (or declaring) where its authority comes from in taking a particular regulatory position. It had every political reason to approach the VoIP E911 question in this way, however; the public outcry that would have resulted if the FCC had attempted to create tariffing structures and interconnection requirements and special charges for VoIP charges made the choice of Title II classification inappropriate, but the FCC's ancillary Title I jurisdiction over "interconnected VoIP" services is unclear (as I discuss below). And so the Commission spread its bets by choosing both classifications. The FCC may have wished to avoid any conflict with a 1998 FCC report (the "Stevens Report," *supra* note ___) that reviewed VoIP services in connection with universal service obligations. The Commission tentatively concluded in the Stevens Report that some

Title I contains a “necessary and proper” rulemaking provision, Section 154(i), that says that the Commission may “perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with this chapter, as may be necessary in the execution of its functions.”¹⁷⁹ This Section allows the Commission to implement regulations that are necessary to carry out its explicit responsibilities under the Communications Act, and courts have found that the FCC can exercise “ancillary authority” to adopt legislative rules using Section 154(i) when two conditions are met: (1) it otherwise has subject matter jurisdiction over the service to be regulated and (2) its regulations are reasonably ancillary to the Commission’s effective performance of its statutorily mandated responsibilities.¹⁸⁰

From the Commission’s perspective, the only question it has to answer for the first part of this test is whether “interconnected VoIP” services specifically, or IP-enabled services generally, use wires or radios. Because they do, the FCC asserts that “these services come within the scope of the Commission’s subject matter jurisdiction granted in section [152(a)] of the Act.”¹⁸¹ Following the Commission’s logic, and read for all it is worth, Section 152(a) gives the Commission subject matter authority over all communications by wire and radio anywhere in the world.¹⁸²

“phone-to-phone” VOIP services “lack[] the characteristics that would render them “information services” within the meaning of the statute, and instead bear the characteristics of “telecommunications services.” Stevens Report, *supra* note ____.

179. 47 U.S.C. 154(i).

180. *United States v. Southwestern Cable Co.*, 392 U.S. 157, 177-78 (1968) (upholding cable television regulations before FCC had express congressional grant of regulatory authority over cable). The D.C. Circuit has recently been quite skeptical of the Commission’s Title I authority. When the FCC used its Title I jurisdiction to justify video description for television programs, the D.C. Circuit struck down those rules because they were outside the Commission’s authority. *Motion Picture Ass’n of America, Inc. v. FCC*, 309 F.3d 796 (D.C. Cir. 2002). And in *American Library Ass’n v. FCC*, 406 F.3d 689 (D.C. Cir. 2005), the D.C. Circuit ruled that the Commission lacked authority to impose broadcast content redistribution rules on equipment manufacturers (the “broadcast flag” rules) using its Title I ancillary jurisdiction because the equipment was not subject to the Commission’s subject matter jurisdiction. The FCC argued for very broad ancillary authority in the broadcast flag case, announcing that unless Congress has told the Commission it cannot regulate, it has the power to adopt any rules that “effectuate the goals” of the Communications Act with respect to anything “associated with the overall circuit of messages sent and received” via wire or radio. Respondent’s Brief, at 23, 25; E911 Order, *supra* note ___, at ¶ 32.

181. E911 Order, *supra* note ___, at ¶ 28.

182. Section 152(a) is about the scope of the coverage of the Act -- it intentionally excludes people in the Canal Zone, for example -- and says nothing about rulemaking authority. Section 152(a) states that “The provisions of this chapter shall apply to all interstate *and foreign communication* by wire or radio and all interstate and foreign transmission of energy by radio, which originates *and/or is received* within the United States, and to all persons engaged within the United States in such communication or such transmission of energy by radio, and to the

As for the second step in the ancillary jurisdiction test, the Commission acknowledges in a footnote that the Telecommunications Act states that “[i]t is the policy of the United States - to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation,”¹⁸³ but asserts that it does not believe that this “policy statement precludes [it] from adopting E911 rules for interconnected VoIP providers here.”¹⁸⁴ The Commission rehearses its “safety of life and property” arguments, notes that it has in the past imposed E911 rules on providers of new telephone technologies, argues that Congress has “ratified” its exercises of authority in this area in the 1999 Wireless Act, and asserts that the Order is reasonably ancillary to the Commission’s effective performance of its statutorily mandated responsibilities. And the Commission hints in the NPRM accompanying the E911 Order that it seeks to do even more. As noted, the FCC appears to be considering whether to require any VoIP-capable device to be able by June 2006 to automatically determine its location to be provided in a E911 call.¹⁸⁵ The FCC is wondering whether its focus on “interconnected VoIP” services is too narrow.¹⁸⁶ And the Commission is considering adopting consumer privacy protections applicable to E911 service, implying that the FCC will create through regulation broad online privacy rules that to date Congress has resisted legislating.¹⁸⁷ It is very likely that future IP-enabled services “social policies” will be based on the same jurisdictional arguments.

The chief problem with the Commission’s claims is that the jurisdictional arguments made in the E911 Order have very few principled limits. Anything that has something to do with a wire or a radio may be asserted to be within the FCC’s jurisdiction, and the FCC

licensing and regulating of all radio stations as hereinafter provided; but it shall not apply to persons engaged in wire or radio communication or transmission in the Canal Zone, or to wire or radio communication or transmission wholly within the Canal Zone. The provisions of this chapter shall apply with respect to cable service, to all persons engaged within the United States in providing such service, and to the facilities of cable operators which relate to such service, as provided in subchapter V-A.”

183. 17 U.S.C. § 230(b)(2).

184. E911 Order, *supra* note ___, at § 29 n.95.

185. *Id.*, § 57. Arguably, Congress in Section 230 of the Telecommunications Act said clearly that special federal regulation of “internet services” was inappropriate. It appears that the Commission has convinced itself that the word “regulation” in Section 230 refers only to Title II common carrier-type regulations having to do with tariffs and interconnection, and not to “social policies.”

186. *Id.*, § 58.

187. *Id.*, § 62.

may expand the scope of its policies at any time. Although the Telecommunications Act does not impose any explicit regulatory burdens on “information services,” the FCC views itself to have complete discretion under its “ancillary jurisdiction” to decide what requirements it should mandate with respect to these services.¹⁸⁸

As it turns out, therefore, these services (which include everything using IP) are “unregulated” only if you have a telephony mindset – they are “unregulated” in the sense that they are not classified as Title II common carrier services (subjected to tariffing and interconnection obligations), but they are regulated in reality. The E911 Order is the clearest demonstration to date that the FCC’s telephony mindset drives it to believe that it has absolute discretion under Title I to impose fundamentally unchanged telephony-based mandates on certain categories of IP-enabled services.¹⁸⁹

The Commission’s belief in its “unregulation” agenda for IP-enabled services received a substantial shot in the arm as a result of the Supreme Court’s recent *BrandX* opinion.¹⁹⁰ Justice Thomas, writing for the Court, ruled that judicial deference to the Commission’s determination that cable modem internet access service is an “information service” was appropriate. This holding was legally sound, but in dicta the Court said that although “information-service providers. . . are not subject to mandatory common-carrier regulation under Title

188. The FCC’s views about its Title I jurisdiction have become more aggressive in recent years. In 2001, in its approval of the AOL-Time Warner merger, the Commission imposed conditions on AOL’s instant messaging application (conditions that were later lifted), but based its authority on its power over approving spectrum license transfers from Time Warner’s cable companies, broadcast companies, and telephony interests to the merged entity as well as on its Title I jurisdiction. *See Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner Inc. and America Online, Inc., Transferors, to AOL Time Warner Inc., Transferee, FCC 01-12, CS Docket No. 00-30*, rel. January 22, 2001. This assertion of Title I jurisdiction was not tested on appeal. Today, in 2005, it is very likely that the Commission would base its authority to regulate instant messaging solely on its ancillary jurisdiction under Title I.

189. Philip Weiser has recommended that the FCC regulate all internet services under Title I using antitrust principles. Philip J. Weiser, *Toward a Next Generation Regulatory Strategy*, 35 LOY. U. CHI. L.J. 41, 66 (2003) (“outlin[ing] how the FCC can rely on its Title I authority to employ a reactive, antitrust-like model of regulation for the emerging broadband market”). By contrast, James Speta takes the view that Title I does not stretch as far as the Commission would like it to, and that the FCC’s regulatory authority should be limited. James B. Speta, *FCC Authority To Regulate the Internet: Creating It and Limiting It*, 35 LOY. U. CHI. L.J. 15 (2003). The Commission appears to be listening to neither Weiser nor Speta, because it is forging ahead with non-antitrust regulation under a broad reading of Title I. It will take a substantial change in public concern over the fate of internet services and a clearly different congressional direction for the Commission to change its approach.

190. National Cable & Telecommunications Ass’n v. Brand X Internet Services et al., 545 U.S. ___, 125 S.Ct. 2688 (2005).

II. . .the Commission has jurisdiction to impose additional regulatory obligations under its Title I ancillary jurisdiction,”¹⁹¹ and indicated that policy in this “technical and complex” area should be set by the Commission (and thus impliedly not by the courts or Congress).¹⁹² The *BrandX* opinion can fairly be read to give the Commission complete discretion over what rules should be mandated with respect to “information services” (including the internet), even if those rules (like E911, CALEA, and universal service obligations) look just like rules applied to common carriers. In other words, classification of services as “telecommunications,” on the one hand, or “information services,” on the other, has become a matter of form over substance. Even if something is called an “information service,” the Commission can mandate requirements of it that used to be required only of “communications services.” The opinion also signals that the internet is too difficult and complicated for any branch of government other than the FCC to deal with.¹⁹³

Justice Scalia’s stinging dissent makes the judicial grant of power to the Commission clear:

[W]hat the Commission hath given [by classifying cable modem service as an information service], the Commission may well take away—unless it doesn’t. This is a wonderful illustration of how an experienced agency can (with some assistance from credulous courts) turn statutory constraints into bureaucratic discretions.¹⁹⁴

I am confident that the orders that I have described in this Part mark only the beginning of the Commission’s “unregulatory” approach to the internet.

How should netheads respond to the list of social policies currently being mandated? Emergency services are important for products that are marketed as replacements for traditional phones, but internet-minded people would find it strange for online newspapers with chat facilities to be forced to provide “911” service.¹⁹⁵ As a technical

191. *Id.*, slip op. at 3-4.

192. *Id.*, slip op. at 20.

193. *Id.*, slip op. at 20.

194. *Id.*, Scalia, dissenting, at 10.

195. Indeed, the use of “911” as a labeling device signals that the entire regime is a throwback to legacy physical telephony systems. From the do-it-yourself online perspective,

matter, there is no principled distinction to be drawn between one online application and another, because they all involve the transport of bits. Given the technical imponderables and the absence of widely-held consumer expectations of protection, netheads would suggest that Congress should shy away from creating blunt, wide-ranging requirements for online emergency services. E911 is a social policy that should not be translated wholesale into the internet context, but rather should be constrained to cover only false and deceptive advertising issues. That is, when application providers (1) do not promote themselves as providers of replacement “phone” service, (2) make clear that they do not provide emergency services, and (3) obtain consumer acknowledgement that they do not, they should not be required to provide emergency access by their users to public safety officials.

Assistance to law enforcement remains a crucial social goal online. But the policies underlying CALEA can and should be implemented without disproportionate effects on innovation. We should explore the possibility of providing isolated data streams to law enforcement authorities, rather than designing all applications in advance so as to ensure they will emit familiar-looking data for law enforcement’s use. Law enforcement authorities will have to become more expert at understanding data, but with additional resources and help from private industry this should be possible.

Finally, universal service, and particularly the provision of broadband access to underprivileged Americans, is vital to America’s future. But we should not be afraid to scrap the existing program and move forward with a more internet-minded approach that both taxes everyone equally (and explicitly) and embraces new technologies.

IV. THE FUTURE

Many inextricably intertwined factors have led the FCC to assert “social policy” control over internet services without translating those policies for the internet age. Commission staff members, although

the notion that all voice services should someday have access to “local” emergency centers is difficult to take in. Users of Skype, instant messenger applications, business groupware with voice elements, and players of online games—all of whom could in the near future be accessible by telephone numbers in various ways—do not expect to be able to call 911. Calling a central authority for help is not part of the internet mindset, because internet users do not think of the internet as watching over them or keeping them safe. It is a resource and an invaluable aid to communication, consultation, and creativity, but not a place where anyone necessarily knows where a user is physically located.

operating with the best will in the world, may have been blinded by their telephony mindsets to the implications of the Commission's current trajectory. The Commission is unquestionably worried about funding universal service, and needs to satisfy those Senators and Congresspeople who are worried about their constituents' rural telephone companies. Lobbying efforts by current broadband providers have been extraordinary: between 1998 and 2004, the communications industry as a whole (including broadcast) spent \$1.1 billion to affect the work of the Commission and Congress, and the cable and telephone industries alone spent \$100 million in 2004.¹⁹⁶ (By contrast, the oil and gas industry spent \$396 million between 1998 and 2004 on lobbying.)¹⁹⁷ Since 1997, almost 400 FCC staff and congressional employees have gone to work in the communications industry.¹⁹⁸ Both the communications industry and law enforcement authorities have great influence with key FCC staff. At the same time, the FCC's internal resources are constrained, and it does not have adequate technical expertise to handle internet policy on its own.¹⁹⁹

Provision of emergency services, assistance to law enforcement, and subsidized access have all in the past been deemed by Congress to be worthy social goals for telephony.²⁰⁰ Now that more of life is migrating online, a decision needs to be made as to whether these same social goals are appropriate for the internet. As discussed above, the Federal Communications Commission has made this decision through a regulatory back door based on its very broad understanding of its implicit "ancillary" powers under the Telecommunications Act. The Commission is straying beyond its statutory powers, and its actions will likely be challenged in court. Moreover, as a "social policy" matter, the difficult and important question of how to govern the internet should be answered explicitly rather than through formalistic recharacterization of internet services by an independent agency.²⁰¹ Congress will need to

196. Center for Public Integrity study, *Networks of Influence: The Political Power of the Communications Industry*, Oct. 28, 2004, available at <http://www.publicintegrity.org/telecom/report.aspx?aid=405>).

197. *Id.*

198. *Id.*

199. In 1999, the FCC established a Technical Advisory Committee to assist it with questions requiring technical expertise. Press Release, Federal Communications Commission, FCC Announces Formation of Technological Advisory Council, Apr. 1999.

200. See 47 U.S.C. §§ 228, 229, 254, 255, 258 (2000) (CALEA, universal service, access for persons with disabilities and anti-slaming).

201. See John T. Nakahata, *Broadband Regulation at the Demise of the 1934 Act: The Challenge of Muddling Through*, 12 COMMLAW CONSPPECTUS 169 (2004) (questioning the Commission's authority to create new regulatory structures for "Title I" services) ("The

decide whether this list of social policies is the right one, and how any such policies should be implemented in the online environment.

The telephony mindset believes in the existing list of policies. From the telephony perspective, communications services should continue to watch over us at all times; law enforcement should continue to participate in the design of services so as to ensure they can be easily tapped; and cross-subsidies for universal service should continue to solve a difficult social welfare problem. But greater “nethead” engagement in this list-making might result in a different list altogether. The internet mindset is focused on open access to resources and consumer education.

A. *Open Access*

Although the original telephony providers eventually gave up on mandating polite language over the telephone lines, their successors have become convinced that phone companies should be in vertical control of internet access, data, content (“video on demand), and provision of online services generally (including but not limited to VoIP).²⁰² Their online services will be “customizable” only to the extent that consumers will be able to choose from pre-set (if very long) menus. They have enormous economic incentives to do so, because the prices they can command for mere telephony are dropping precipitously.²⁰³ Both telco and cable broadband providers already prohibit individuals from using their connections to host web servers or mail servers themselves. (Hosting your own servers makes you a publisher rather than having to rely on paying vendors to host content.) With the aid of the FCC, telephony providers are working themselves into position to assert integrated, monetized control over internet

Commission is not the Congress—it cannot enact new laws outside of the Act’s delegations of rulemaking authority.”)

202. Telcos and cable are selling bundled packages of content (pay per view, video on demand, cellphone ringtones, online music services) plus access, data, and wireless services. The system that will make this all possible is the “IP multimedia subsystem architecture,” or IMS, discussed above at ___. Glenn Bischoff, *Event Shows VoIP Supremacy, But Questions Sizzle of IMS*, TELEPHONYONLINE.COM, Jun. 27, 2005. About twelve major carriers around the world have “either announced or launched IMS projects,” including Sprint. Dan O’Shea, *Analyst: Carriers Mostly Taking Best-of-Breed Approach*, TELEPHONYONLINE.COM, Aug. 12, 2005, available at http://telephonyonline.com/home/news/incode_wireless_ims_081205/.

203. Where the effective price per minute of call was over 20 cents in 2000, it is now below 5 cents. See Yankee Group Report, Jul. 2005. As Commissioner Copps has stated, “[c]ompanies that control choke-points on the network have a built-in incentive to restrict and control customer use of that network.” Remarks of Michael J. Copps, *The Beginning of the End of the Internet? Discrimination, Closed Networks, and the Future of Cyberspace*, New America Found., Washington, D.C., at 4 (Oct. 9, 2003).

services accessed by their users.

The “phone guys” and the “cable guys” are busily occupying themselves with dividing the world of internet experiences up between the two of them. For the moment, the two groups of businesses have a duopoly.²⁰⁴ There is no better way, or even alternative way, to get broadband internet access in this country. Because of this reality, the duopolists have every reason to ensure that no competitive services run over “their” networks and that social policies (that might run competitive businesses out of business) are enforced by the FCC.²⁰⁵ The current telephony/cable hype, and the assumption of these companies that the internet is a network they can control, is eerily reminiscent of the early AOL days.

Internet-minded advocates have begun asking for enforceable “net neutrality” mandates that would require broadband access providers to allow use of all content, applications, and devices.²⁰⁶ In response, the FCC has issued a draft set of unenforceable principles that represent the current Commissioners’ “beliefs” with respect to neutrality.²⁰⁷ These

204. As of July 2005, there were 25 million DSL subscribers and 21.7 million cable broadband subscribers in the US. See http://telephonyonline.com/access/metrics/dsl_cable_subscribers_070505/. Satellite and wireless combined have only 500,000 high-speed access customers out of 37.9 million high-speed access lines in the U.S., according to the most recent FCC report. According to James Speta, “in the vast majority of markets, the incumbent telephone company and the incumbent cable company are the only providers of high-speed Internet access.” James B. Speta, *Deregulating Telecommunications in Internet Time*, 61 WASH. & LEE L. REV. 1063, 1100 (2004). According to media advocates’ estimates, the cable and telephone companies serve 98% of all broadband consumers in the U.S. See Harold Feld and Gregory Rose, Media Access Project; Mark Cooper, Consumer Federation of America; and Ben Scott, Free Press, *Connecting the Public: The Truth About Municipal Broadband*, Apr. 2005, at 4.

205. In Kevin Werbach’s words, “VOIP represents the computer industry invading, and potentially subsuming, the communications industry.” So a telephony mindset dictates that the “computer industry” has to be slowed. See Tim Wu, *Network Neutrality and Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH L. 141 (2003) (broadband providers favor older applications over newer ones).

206. See, e.g., Ex parte submission, Coalition of Broadband Users and Innovators, letter to FCC, Aug. 28, 2003, CS Dkt. No. 02-52, CC Dkt. Nos. 02-33, 98-10, & 95-20; GN Dkt. No. 00-185. Members of the CBUI included Amazon.com, Apple, eBay, Microsoft, and Yahoo!. See also Public Knowledge White Paper, *Principles for an Open Broadband Future*, Jul. 6, 2005 (listing principles), available at <http://www.publknowledge.org/content/papers/open-broadband-future>.

207. Press Release, Federal Communications Commission, New Principles Preserve and Promote the Open and Interconnected Nature of Public Internet, Aug. 5, 2005 (listing principles). The second and third principles are: “(2) consumers are entitled to run applications and services of their choice, subject to the needs of law enforcement; (3) consumers are entitled to connect their choice of legal devices that do not harm the network.” Even these unenforceable statements of belief were carefully cabined to address the “needs of law enforcement” and network providers’ ability to cut off devices that in their view are

principles are not comforting. For example, the first principle is “[c]onsumers are entitled to access the lawful Internet content of their choice... subject to reasonable network management.”²⁰⁸ In the words of Chairman Martin:

I have long believed that consumers should be able to use their broadband internet access service to access any content on the internet.[FOOTNOTE ONE]

[FOOTNOTE ONE]: Subject, of course, to the bandwidth limits and quality of service terms of the particular Internet access service plan that they have chosen to purchase.²⁰⁹

If no DSL or cable provider is required to make basic access to the internet (unconditioned, uncustomized) available to consumers, if service plans say "do not use any unapproved applications or devices," and if providers become able to track applications that consumers are using, then it is meaningless to say that as a matter of policy users should have the right to access any content they want to. The cable/telco duopolists will treat users as passive recipients of packaged services, as they are with respect to the telephone and cable services these providers are used to selling. These principles are unenforceable as well as weak. As Martin says: "While policy statements do not establish rules nor are they enforceable documents, today's statement does reflect core beliefs that each member of this Commission holds regarding how broadband internet access should function."²¹⁰

It is likely that internet enthusiasts will fight for statutory “net neutrality” mandates in the years to come. Although the overall social goal of open access to resources is appropriate, the manner in which it

“illegal.” Chairman Martin’s accompanying statement describes these principles as “core beliefs that each member of this Commission holds.” Press Release, Federal Communications Commission, Chairman Martin Comments on Commission Policy Statement, Aug. 5, 2005. Pulver.com, a VoIP provider, had suggested adoption of enforceable unconditioned mandates stating “users should have access to their choice of legal content; users should be able to run applications of their choice; users should be permitted to attach any devices they choose to their broadband connection.” Ex parte letter from Pulver.com, Aug. 4, 2005. CS Docket No. 02-52; GN Docket No. 00-185; CC Docket Nos. 02-33, 95-20 & 98-10.

208. Press Release, Federal Communications Commission, New Principles Preserve and Promote the Open and Interconnected Nature of Public Internet, Aug. 5, 2005 (listing principles).

209. Press Release, Federal Communications Commission, Chairman Martin Comments on Commission Policy Statement, Aug. 5, 2005.

210. *Id.*

is likely to be implemented may prove to be problematic given the political power of network providers inside the Commission. Another (politically infeasible) internet-minded approach would be to make basic, uncontrolled, nondiscriminatory broadband access a public utility, as with the transmission of natural gas in the 1980s and early 1990s.²¹¹

B. Consumer Education

If told that the internet is working well without government intervention, many telephony-minded policymakers will respond forcefully that the explosion of spam and spyware online is strong evidence that government involvement is required. A telephony-minded legislator will point to the success of the Do Not Call Registry and 900-number regulation, and say that analogues to these offline initiatives are necessary. Any internet-minded interlocutor will then need to explain that a Do Not Email Registry would be unworkable as a technical matter,²¹² and that regulating software is unfamiliar legislative territory.²¹³ The internet-mindset person will then point the telephony-minded policymaker to widely-available client-side resources for combating spam and spyware.

New users of the internet, and inexperienced legislators, come online thinking that the internet is just like a telephone, that they are helpless to help themselves, and that centralized network managers should be able to fix any inconveniences. In the offline world, because users cannot protect themselves against physical threats, the creation

211. See Federal Energy Regulatory Commission Order No. 636, *Pipeline Service Obligations & Revisions to Regulations Governing Self-Implementing Transportation; and Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol*, III F.E.R.C. Stats. & Regs. Preambles P 30,939, 57 Fed. Reg. 13,267 (1992), *order on reh'g*, Order No. 6-A, III F.E.R.C. Stats. & Regs. Preambles P 30,950, 57 Fed. Reg. 36,128 (1992), *order on reh'g*, Order No. 636-B, 61 F.E.R.C. P 61,272, 57 Fed. Reg. 57,911 (1992), *aff'd in part and remanded in part*, United Dist. Co. v. FERC, 88 F.3d 1105 (D.C. Cir. 1996) (mandating open access and the unbundling of gas sales and transportation). The cable/telco companies would then be entitled to recover the “stranded costs” that had been caused by deregulation. See Congressional Budget Office, *Electric Utilities: Deregulation and Stranded Costs* (1998) (primer on stranded costs) (1998), available at <http://www.cbo.gov/showdoc.cfm?index=976&sequence=0>.

212. See Federal Trade Commission, *National Do Not Email Registry: A Report To Congress*, at 5 (Jun. 2004) (“[T]he Commission has determined that spammers would most likely use a Registry as a mechanism for verifying the validity of email addresses and, without authentication, the Commission would be largely powerless to identify those responsible for misusing the Registry. Moreover, a Registry-type solution to spam would raise serious security, privacy, and enforcement difficulties.”)

213. Susan P. Crawford, *First, Do No Harm: The Problem of Spyware* (forthcoming, BERKELEY TECH. L.J. 2005) (discussing novelty of regulating software).

and empowerment of central authorities to protect them makes sense. But any exchange of bits can be blocked by a wise user. A spam filter can be completely effective against any unknown source of email, once the user has set it up to reject messages from sources to which he or she has not been introduced (technically or otherwise). Users can install firewalls, virus and spyware-checking software, and otherwise act to increase their security. As consumers become more accustomed to internet use, they become concomitantly more comfortable with watching out for themselves. Consumer education is essential to ensure that users understand that they can protect themselves and that the internet is not a centrally-managed telephone network. A key internet-minded social policy for the internet would be public support for consumer education about the many free (or low-cost) applications available to solve online problems.²¹⁴ Indeed, allowing consumers to help themselves effectively is a central internet-mindset idea, because this approach will keep the network's processing intelligence at the network's edge rather than dragging it under central control.

C. *Exceptionalist Arguments*

On the face of things, the “internet guys” could, if awakened, contest the internet protocol layer-crossing in which the FCC is engaging. They could point out that the FCC’s regulatory role with respect to the internet has always been limited to infrastructure issues. Spectrum management and common carrier aspects of internet access have traditionally been within the FCC’s purview, because the FCC’s role was to combat the pernicious effects of monopolies and spectrum scarcity. Now the Commission is entering into an era of ad hoc policy creation for higher layers of the internet protocol stack: applications and social relationships. The Commission is wandering out of its proper sphere, and causing confusion and consternation as to the identity of the layers for which it is responsible. It is able to accomplish this because few notice that it has begun talking about a different “level” of the internet than it has in the past.²¹⁵

214. As an example from the telephony world, a three-month public education campaign in California about the privacy implications of new “Caller ID” services led to awareness on the part of two-thirds of Californians that they could take steps to protect themselves. “Consumer education works. When consumers are given adequate information about the privacy implications of a technology, they take action.” Privacy Rights Clearinghouse, *Caller ID: The Case for Consumer Education*, Jun. 1996, available at <http://www.privacyrights.org/ar/callerid.htm>.

215. In June 2004, FCC posted a “history of the internet” on its web site. *FCC Introduces New Exhibit on the History of the Internet*, GOVERNMENT TECHNOLOGY, Jun. 14, 2004, available

Another facial argument available to internet exceptionalists is that the jurisdictional sleight-of-hand being engaged in by the Commission shows a lack of respect for Congressional intent. Commission staff often protest that they will always be reasonable and that the public can rely on their self-restraint. “We’re not about to regulate Amazon.com,” they say. But the Commission’s recent adoption of the broadcast flag rule, its current aggressive stance in the E911 context, and its ongoing romance with law enforcement authorities all signal that it would be unwise for the public to assume that their beloved internet collaborations will be allowed to continue, or that the congressional policy that internet services be unfettered by federal regulation will continue to be adhered to.

The telephony mindset has always in the past assumed that someone has to be in charge and has to make policies about important social issues. This is a reasonable mindset for the telephone and cable networks, because in order for these networks to work someone *does* have to be in charge. Without intelligent switches, telephone calls cannot be routed to their destinations. The deeper and darker clash that will be masked by all possible discussions of layer-crossing and statutory interpretation is that the internet mindset simply does not assume that someone must be in charge. By contrast, because of their history and the way their proprietary networks function, telephon-ists cannot imagine a world in which no one is “watching over you.”²¹⁶

What is an “internet guy” to do? Perhaps the answer is to point out that an internet mindset can be helpful in implementing sensible

at <http://www.govtech.net/news/news.php?id=90543>. In a recent draft article, Kevin Werbach suggests that the FCC’s continued role with respect to the internet should be to grant permission to devices and applications that wish to connect to the internet: “Those who introduce devices that depend on connections to regulated communications networks must always receive permission ahead of time, or at a minimum, tacit approval.” Kevin Werbach, *The Federal Computer Commission*, at __ [draft on file with author; need permission to cite]. Werbach’s view is that this FCC approval role is vital to the continued existence of internet services: “The browser vendor, let alone the Internet-based applications such as Amazon.com and Google that appear through that browser, never need consider the terms of network interconnection. From their perspective, connectivity is a given, with government nowhere in the picture. Yet this freedom would not be possible without the FCC-defined Part 68 rules [for interconnection to the telephone network] at the end of the chain.” *Id.* at __; see 47 U.S.C. Part 68.

216. This clash of understandings is similar to that foreshadowed in 1995 by Michael Froomkin, who pointed out that the constitutionality of encryption regulations would rise or fall on the metaphor used to describe encryption by courts; if encryption is like a language, it would be protected as speech; if encryption is like a wrapper around a message, it will not be protected. A. Michael Froomkin, *The Metaphor is the Key: Cryptography, the Clipper Chip, and the Constitution*, 143 U. PA. L.REV. 709, 884 (1995). But the telephony/internet clash goes far beyond a metaphor conflict. It is about whether the internet should be treated as if it were the telephone network for “social policy” purposes.

social policies for the internet, and that these policies need to be revised for the internet age. Internet exceptionalists must pay attention to the language of telephony and attempt to understand why those with telephony mindsets think the way they do. Thirty years of absorption with “communication services” and “information services” (not to mention “universal service”) have taken a toll, and the ruts of understanding run very deep indeed.

Net exceptionalists must hone their messages. But they will also need to rise up in order to be heard. What is wrong with having some centralized authority approving online applications before they can be launched, moving telephony-based policies into the online world without change, or assessing universal service charges without reforming the underlying program? Here is what is wrong: It is wrong because treating the internet like just another proprietary, competing network that is no different from the telephone network will cause as-yet-unborn technologies, applications, collaborations, human creativity, devices, growth, economic developments, and innumerable other intangible and tangible valuable and interesting things never to come into existence. Applied to a telephone network, the telephony mindset makes sense. Applied to the internet, the telephony mindset is destructive of the future. The real implications of the FCC’s actions for the future of the internet need to be publicized, and diplomats from the internet side trained to go into public debate with the telephony mindset. The future belongs to the internet exceptionalists, if they will only wake up in time.

CONCLUSION

In this Article, I have suggested that the difference between the telephony mindset and the internet enthusiast mindset is a phenomenon with much broader social and economic implications than anyone may suspect. I have described the origins of these mindsets and the network functionalities that made these individuals (and regulators) think the way they do. I have explained why the FCC approach to the internet is irretrievably based on a telephony mindset, and why an internet exceptionalist approach needs to be taken into account when making internet policy. I have described the foreign policy approach that exceptionalists need to adopt in order to forward this agenda.

Internet exceptionalism has to date been absorbed with arguing over whether cyberspace is a “place” (or not), and what the bases for jurisdiction over online sites should be. But these obsessions miss the forest for the trees. Because access to the internet itself is controlled by

increasingly anxious providers of broadband services, and law enforcement authorities have been wielding enormous power in recent years, the internet is under attack by regulators accustomed to the telephony mindset, happy to assist the Department of Justice, and ready to cross layers of the internet protocol to achieve their ends. If the split between exceptionalists and telephonists is real—and I am confident that it is—it has a number of important implications for the future of the internet.

For telecom academics, mindset diplomacy provides a fertile area for research. FCC regulation of the internet is just emerging, and governments all around the world are following suit. The U.S. has an opportunity to take the lead in self-restraint, but Congress will need to be thoughtful and acknowledge the differences between telephony and the internet—something it seems often to have trouble doing. There is very little information available to policymakers about how the telephony approach will affect the future of the internet. There is ample latitude for work on why (or whether) the internet mindset will provide a more encouraging framework for economic development, and for warnings about the potential troubles that will be created if the internet mindset is adopted.

For online companies, the need to step up as policy players and lead the public along a new trajectory poses an enormous challenge. No one seems to be willing to take on the FCC's appetite for internet regulation, for fear of being branded anti-law enforcement, anti-consumer, pro-pornography, or some other headline-grabbing attribute. But the short-term attractiveness of making deals with cable and telephone companies is far outweighed by the attractiveness of the internet's future, as even the briefest of examinations of AOL's history reveals.

For regulators, the implications of these mindsets are extremely important. The FCC needs to recognize that it has in many senses been captured by its own history. It should not pretend to be “the internet agency,” and it does not have the capacity to draw lines that will make sense in this quickly-evolving set of circumstances. Indeed, no one does. Technical mandates and requirements based on legacy understandings and technologies (like the E911 fiasco) are doomed to be unsuccessful and to serve only the incumbents who demanded them in the first place. The regulators need to take the time to evaluate how an internet-minded approach might serve the social policies in which they are interested.

The great advantage of the internet mindset is that it matches

human interest in collaboration to the workings of the network itself, and encourages economic development and human empowerment on many levels. In an increasingly flat world, U.S. users of the internet gain few benefits from the kinds of unchanged “social policies” the FCC has in mind, and the sooner we recognize this in policy as well as in reality the better off will be the U.S. economy.

That the telephony mindset has been an unacknowledged part of the U.S. policy landscape for generations does not mean that it is not important. That a crucial set of misunderstandings and incorrect assumptions has led us down a destructive path does not mean that we should not make an effort to correct all of them. Awareness of the telephony and internet mindsets presents a fascinating opportunity that could allow us, as a nation, to lead the world in encouraging enormous innovation, creative growth, and human collaboration. It is essential that we try.