ON REGULATING THE INTERNET: USENET, A CASE STUDY

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The Internet is becoming a regulated space. Recent laws—state, federal, and international—govern the economic, social, and political structure of the information infrastructure. But when should government regulate this space? The first step in analyzing such a new law should be to examine how much harm it will cause to the Internet. In this Comment, Paul Ohm takes a close look at this step: How can we predict the online harm that regulation will cause?

To assess the damage that regulation can cause, Ohm focuses on a subset of the Internet: Usenet. Usenet is an interesting corner of cyberspace that can serve as a laboratory in which to test our hypotheses about the entire Internet. The users of Usenet have clashed with one another throughout the history of the space, but Usenet has rarely been subject to government regulation. Instead, Usenet users have regulated themselves by establishing informal norms and by changing the underlying technology. Through shifting norms and technologies, Usenet has matured. A grown-up Usenet may soon be ready for outside regulation.

From this case study, Ohm speculates that regulation least harms the most developed Internet spaces. By tracing the development of Usenet, he identifies evolutionary "signposts" that indicate a space's maturity. Lawmakers should look for these signposts to identify the harm that future regulation may cause.

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INTRODUCTION

The frontier is being tamed—government regulators are trying to bring order to the Internet. Their efforts have been criticized by Internet users who call for deference and restraint,[1] but opposing these voices are concerned

1. "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." John Perry Barlow, *A Cyberspace Independence Declaration* (last modified Feb. 9, 1996) <http://www.eff.org/pub/Publications/John_Perry_Barlow/barlow_0296.declaration>.

A note on citation: Because of the subject matter of this Comment, I often cite to World Wide Web documents for support. Internet documents make very poor sources for long-lived scholarship. *See* Brewster Kahle, *Archiving the Internet* (last modified Nov. 4, 1996) <http://www.archive.org/sciam_article.html> ("[T]he average lifetime of a document [on the Internet] is 75 days and then it is gone."). The chances are that by the time this Comment is published, some of the sources cited will no longer exist. The latest version of the Bluebook advises that "[b]ecause of the transient nature of many Internet sources, citation to Internet sources is discouraged unless the materials are unavailable in printed form or are difficult to obtain in their original form." THE BLUEBOOK: A UNIFORM SYSTEM OF CITATION 124 (16th ed. 1996).

Different proposals have been made to remedy this problem. One idea is periodically to save "snapshots" of all of the public data that are available on the Internet in a "digital library." *See* Internet Archive, *Building a Digital Library for the Future* (visited July 2, 1999) <http://www.archive.org>. Another approach is to revise the citation system. *See* Peter B. Maggs, *The Impact of the Internet on Legal Bibliography*, 46 AM. J. COMP. L. 665, 665 n.2 (Supp. 1998).

Because no solution yet exists for this problem, I present a stopgap solution. As a modern-day version of the venerable "on file with author" citation form, I will maintain a web page that lists every Internet source cited in this Comment, with a link to a current version of each source. This web page can be found at <http://www.breadboard.com/pubs/law/46UCLA-usenet.html>. I recognize

parents, teachers, and politicians who insist that we regulate now to save our children and ourselves from the dangerous dark corners of the new online world.[2] Neither approach seems sophisticated enough to guide the careful lawmaker. If we must regulate, when is best? Is it sometimes better to defer? No one has provided the analytical tools to answer questions such as these.

The problem may be that lawmakers often regard the Internet as a single entity and therefore attempt to govern it as a whole.[3] But the Internet is better thought of as consisting of parts. The different parts of the Internet each have distinct histories; no two parts were created in the same way, and no two parts have evolved identically. Perhaps our rules of governance should recognize the diversity of those parts.

This Comment focuses on one such part: Usenet. Usenet is one of the most popular services on the Internet. It brings people together in a new discursive society[4] that lawmakers may want someday to govern. It is also a misunderstood corner of the Internet that does not receive much attention in legal scholarship;[5] it is quite dissimilar from the heavily scrutinized World

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the irony of combating disappearing web pages with a web page, but I will make an effort to ensure that this web page remains up-to-date.

2. "The application of federal obscenity law to the Internet should be broadened .... Being adequately protected from harmful pornography and contact by sexual predators, women and children would be afforded safe access to the world of useful and appropriate knowledge available through the Internet." Family Research Council, *Frequently Asked Questions* (visited June 22, 1999) <http://www.frc.org/faq/faq16.html>.

3. For example, the sweeping language of the Communications Decency Act of 1996 (CDA) purported to restrict any speech by anybody using an "interactive computer service," which was defined elsewhere in the act as "any information service, system, or access software provider that provides or enables computer access by multiple users to a computer server, including specifically a service or system that provides access to the Internet and such systems operated or services offered by libraries or educational institutions." 47 U.S.C. § 230(e)(2) (Supp. II 1996).

4. Howard Rheingold has written eloquently about the emergence of virtual communities through online communication channels such as Usenet. *See, e.g.*, HOWARD RHEINGOLD, THE VIRTUAL COMMUNITY: HOMESTEADING ON THE ELECTRONIC FRONTIER (1993); *see also* ESTHER DYSON, RELEASE 2.0: A DESIGN FOR LIVING IN THE DIGITAL AGE 31–53 (1997).

5. This is not to say that Usenet has been completely ignored by legal scholars. *See, e.g.*, Jeffrey M. Taylor, *Liability of Usenet Moderators for Defamation Published by Others: Flinging the Law of Defamation into Cyberspace*, 47 FLA. L. REV. 247 (1995). For reasons that are discussed throughout this Comment, Usenet has been a famously ripe battleground for online combatants. The legal scholarship often recounts, as examples of other points, the more famous battles that have erupted in this forum. *See, e.g.*, David G. Post, *Pooling Intellectual Capital: Thoughts on Anonymity, Pseudonymity, and Limited Liability in Cyberspace*, 1996 U. CHI. LEGAL F. 139, 163–64 n.54 (describing "Cancelmoose's" war against spam); Charles L. White, *Censorship*, 64 FORDHAM L. REV. 804, 804–05 (1995) (discussing the online vigilantism that followed in the wake of the abuse of Usenet by the Phoenix, Arizona law firm of Canter & Siegel); Brian G. Gilpin, Note, *Attorney Advertising and Solicitation on the Internet: Complying with Ethics Regulations and Netiquette*, 13 J. MARSHALL J. COMPUTER & INFO. L. 697, 716–18 & n.176 (discussing the Canter & Siegel

Wide Web, and comparison of the two can be instructive. Lastly, Usenet has an interesting design feature: It is not controlled by anyone. Because decentralized control is a feature found throughout the Internet, studying this part of it may yield useful conclusions about the whole.

Part I of this Comment introduces Usenet and focuses in particular on the ability of Usenet users to silence the "voice" of other users through a mechanism known as a "cancel message." Part II examines several hypothetical examples of governmental regulation of Usenet. It also surveys and critiques the legal scholarship that urges deference in Internet lawmaking. Part III suggests some ways that lawmakers can assess the harm that laws can cause to Usenet. Part III.A sets up the analysis by defining some key terms, and Part III.B surveys the different ways that laws harm online spaces. Part III.C argues that lawmakers should first look at what alternatives to Usenet parties may choose, and Part III.D looks at Usenet to study how customs and norms are made on the Internet. Part III.E then looks at these choices, customs, and norms and provides a few rules of thumb that predict the damage that legislation can do. The Comment concludes that while there may be no magical set of ground rules to follow when deciding whether to regulate a part[6] of the Internet, current lawmakers are probably not yet asking the right questions.

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incident). At least one other author has cast his eye over the same issue that this Comment addresses, namely, rule making in Usenet. *See* Charles D. Siegal, *Rule Formation in Non-Hierarchical Systems*, 16 TEMP. ENVTL. L. & TECH. J. 173, 181–99 (1998). Interestingly, Charles Siegal does so to compare rule making in Usenet with rule evolution in international environmental law. *Id.*

One reason that Usenet may have been neglected in legal scholarship is that it has not been frequently discussed in judicial opinions. As of June 22, 1999, the word "Usenet" had been mentioned in cases, according to the Lexis "mega;mega" catalog, a mere 21 times. *See, e.g.*, Reno v. ACLU, 521 U.S. 844, 891 (1997); ACLU v. Johnson 4 F. Supp. 2d 1029, 1031–32 (D.C.N.M. 1998); Playboy Enter. v. Webbworld, Inc., 991 F. Supp. 543, 549, 550, 552, 556 (N.D. Tex. 1997); American Library Ass'n v. Pataki, 969 F. Supp. 160, 165, 166, 183 (S.D.N.Y. 1997); Religious Tech. Ctr. v. Netcom On-Line Communication Servs., Inc., 907 F. Supp. 1361, 1365, 1366, 1367, 1368 (N.D. Cal. 1995).

Although legal analysts have not focused on Usenet, commentators in other disciplines have written about it. *See, e.g.*, Peter Kollock & Marc Smith, *Managing the Virtual Commons*: Cooperation and Conflict in Computer Communities (last modified Jan. 31, 1994) <http://www.sscnet.ucla.edu/soc/csoc/papers/virtcomm/Virtcomm.htm>.

6. This Comment looks at the governance of the Internet, but that can mean more than one thing. Much scholarship focuses on the regulation of the nuts and bolts of the Internet. These studies examine, for example, who pays for the Internet, *see* KEVIN WERBACH, DIGITAL TORNADO: THE INTERNET AND TELECOMMUNICATIONS POLICY (Federal Communications Comm'n, Office of Plans and Policy Working Paper No. 29, 1997), and who gets to register domain names, *see, e.g.*, Alexander Gigante, *Blackhole in Cyberspace: The Legal Void in the Internet*, 15 J. MARSHALL J. COMPUTER & INFO. L. 413 (1997). This Comment is not about that kind of governance. Rather, it focuses on governance of the human interaction that the Internet provides. The Internet is a series of "communities"; these are private spaces that allow people (and corporations and computer programs) to interact in previously unavailable ways, with

I. USENET

Consider the following hypothetical: *A new computer owner, Nathen, has just signed up for Internet[7] access with an Internet Service Provider (ISP). Nathen is a shrewd businessman who sells widgets; he has heard the hype about what the Internet can do for small businesses and would like to use it to find new customers. Although the World Wide Web[8] looks like a promising marketing tool, Nathen is discouraged after doing some research. His ISP will charge him an extra monthly fee to "host" the web page. Further, he has heard that he will have to learn a complicated programming language to make the web page,[9] and even then there is no guarantee that others will visit it. In view of these difficulties, Usenet, another service available on the Internet, seems much more promising.*

The term "Usenet" describes a computer network[10] through which people[11] around the world communicate.[12] Communication via Usenet takes the form of extended, open-to-the-public conversations conducted in a

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previously unreachable others. The issue is how, whether, and when lawmakers should govern private, individual conduct in these spaces. In many ways, this is a sociological look at how the relationships between private actors evolve in the Internet.

7. The Internet is big. It has become a celebrated rite-of-passage for legal scholars writing in this field to summarize just how big the Internet may be. These days many law review articles and court opinions contain—usually as a very early footnote—a list of statistics and accompanying web site addresses that estimate how big the Internet is. *See, e.g.*, ACLU v. Reno, 929 F. Supp. 824, 831 (E.D. Pa. 1996) ("It is indisputable, however, that the Internet has experienced extraordinary growth in recent years."), *aff'd*, 521 U.S. 844 (1997); Jerry Kang, *Information Privacy in Cyberspace Transactions*, 50 STAN. L. REV. 1193, 1195 n.2 (noting that there were 16 million hosts in the Internet domain name system as of January 1997); Erik G. Swenson, Comment, *Redefining Community Standards in Light of the Geographic Limitlessness of the Internet: A Critique of* United States v. Thomas, 82 MINN. L. REV. 855, 858–59 & nn.14–19 (1998) (noting that there are over 49 million users from over 96 countries, with growth at a rate of approximately one million users per month). I am satisfied to cite these and to proclaim once again the Internet's bigness.

8. The World Wide Web is just one part of the Internet. The different parts of the Internet are often referred to as "services." A service is a technology that provides for a specific type of data transfer and often for human communication. In addition to the web, other services include file transfer protocol (FTP), telnet, and real-time chat.

9. This is a common misconception. Web pages are written in a language known as "hypertext markup language" (HTML). HTML is not a "programming" language, in any common definition of the term. It is more properly referred to as a "page-definition" or "markup" language.

10. The term "Usenet" does not describe a physical computer network, but rather a logical network built on top of existing physical networks. *See* whatis.com Inc., *OSI (Open Systems Interconnection)* (last modified January 3, 1999) <http://whatis.com/osi.htm>.

11. Computer programs increasingly communicate with one another and with people through the Internet. These programs are sometimes called "bots" or "agents." For an introduction to bots on the Internet, see Internet.com, *Welcome to BotSpot* (visited July 2, 1999) <http://www.botspot.com/>.

12. "Usenet" can also refer to the set of people who exchange articles over the Usenet network. *See* Chip Salzenberg, *What is Usenet?* (Gene Spafford & Mark Moraes eds.) (last modified Jan. 16, 1998) <http://www.cis.ohio-state.edu/hypertext/faq/usenet/usenet/what-is/part1/faq.html>.

"bulletin-board," "post-and-response" format.[13] Each participant composes his thoughts and then sends the message to Usenet, a procedure known as "posting" a "message" (or "article" or "post") which then can be read by other Usenet participants who may choose to post responses. Usenet discussions are separated by topic into thousands of "newsgroups" (or "groups"), each of which carries a discussion regarding a different topic.[14] With so many specialized, ongoing conversations, Usenet is "as diverse as human thought."[15] A user interacts with Usenet by way of an interactive computer program known as a "newsreader."[16]

Nathen subscribes[17] to a few newsgroups related to some of his interests and learns to read and post messages. Another user posts to the newsgroup

13. This is different from real-time communication, such as Internet Relay Chat (IRC), in which responses to messages arrive "instantaneously" when they are posted. *See* Nicolas Pioch, *A Short IRC Primer* (visited July 2, 1999) <http://www.irchelp.org/irchelp/ircprimer.html>. Both of these methods can be contrasted with the World Wide Web model, which consists of a publisher of information providing content in a more static fashion that does not lend itself necessarily to feedback or dialogue. Of course, as with all things digital, these three separate paradigms are beginning to converge, so that some Usenet newsgroups, particularly moderated newsgroups, are more about publication than about dialogue, while most web pages provide for some sort of user feedback.

14. Newsgroups are organized into a hierarchy of very general topics subdivided into levels of increasingly specific subtopics. Each newsgroup has a name signifying its location in the hierarchy and thus its specific topic of discussion. These are multipart names that trace a path down the hierarchy, each subtopic separated from the previous one by a "dot." *See* deja.com, *Internet Discussion Groups Info: IDG Structure* (visited June 9, 1999) <http://www.deja.com/info/idg.shtml> [hereinafter *IDG Structure*]. For example, the newsgroup entitled "comp.os.linux.networking" signifies that posts in that group should concern the task of networking computers that run the linux operating system.

There are nine major topics of discussion at the top of the hierarchy. These include the "Big 8" hierarchies—"comp," "humanities," "misc," "news," "rec," "sci," "soc," and "talk"—and the "alt" hierarchy, for the discussion of alternative topics. Although these nine hierarchies exist worldwide, local hierarchies, restricted to one Internet service provider (ISP), organization, or geographic region, also exist. For example, when I am connected to the Internet through UCLA, my newsreader has access to the ucla.* hierarchy of newsgroups. There can even be local hierarchies within local hierarchies; I can only access the ucla.law.* subhierarchy of newsgroups when I am connected to the network at the UCLA School of Law.

The asterisk is used as a "wildcard." It is a stand-in for any set of characters following the characters "ucla." or "ucla.law." In the latter example, the construction represents every newsgroup name that is in the "law" subpart of the "ucla" hierarchy, such as ucla.law.classes or ucla.law.support.

15. ACLU v. Reno, 929 F. Supp. 824, 842 (E.D. Pa. 1996), *aff'd*, 521 U.S. 844 (1997). The phrase "as diverse as human thought" was first used to describe the content on the Internet in the findings of fact made by the three-judge panel. It was repeated favorably in Justice Stevens's subsequent opinion disposing of the same case. *See* 521 U.S. at 852. The phrase—a marvel of understated hyperbole—wonderfully and succinctly captures the breadth of online discussion.

16. A newsreader is to Usenet as a web browser is to the World Wide Web. Programs that provide a user interface to an Internet service are generically referred to as "clients."

17. A user "subscribes" to a newsgroup when he configures his newsreader to add a new newsgroup to his "active list" of subscribed newsgroups. Once he has subscribed, he can read and post to the newsgroup. Naturally, the act of removing a group from the active list is called

"misc.widgets," describing her need for a type of widget; Nathen thinks one of his products will fill her need. He writes a response that describes his widget, including the price of the product, his business telephone number, and address. Just before posting, as an afterthought, he decides to "cross-post" the message to his other favorite widget newsgroup, alt.widgets.general.

There are two ways to post the same message to more than one Usenet newsgroup. A message may be "cross-posted," which means the writer sends the message once, but targets it to more than one newsgroup.[18] Alternatively, he can send the message separately to many different newsgroups, a technique known as "multiple-posting." A cross-posted message only gets sent to Usenet once, while a multiple-posted message is sent once for each target newsgroup.

The next time Nathen logs in, he is surprised to find eight pieces of electronic mail.[19] *Two messages come from interested widget buyers. Nathen is delighted with his first successful foray into Usenet advertising. He is, however, a bit puzzled by the other six responses. Six different users have written to complain about the post. They each tell Nathen that commercial advertisements do not belong in these newsgroups. Some of the messages are impassioned and angry and, in Nathen's opinion, rude or even abusive.*

Like most of the Internet, Usenet arose from governmental and educational roots. Consequently, Usenet has only recently been used for commercial purposes, and many Usenet users still consider commercial advertising on Usenet an abuse.[20] The Usenet community's tolerance for commercial posts has increased with time, but many still consider them anathema to the spirit of Usenet.

Nathen is a little shaken by the negative responses and does not understand why his act was wrong. He has seen other advertisements posted to these newsgroups, and many of those ads had nothing to do with widgets. He especially cannot understand why some responses were so impassioned; every time he sees

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"unsubscribing." Subscribed newsgroups, however, are just conveniences provided by newsreaders, rather than an inherent feature of Usenet.

18. In the most primitive newsreaders, a user cross-posts a message by typing a list of newsgroup names, separated by commas, into the "Newsgroup:" line of the message header. For a description of headers, see *infra* note 23.

19. Although electronic mail and Usenet are separate Internet services, they are often used in tandem. Rather than respond to a Usenet post by publishing a response on the newsgroup, a user will often send private electronic mail to the post's author.

20. *See* Joel K. Furr, *Advertising on Usenet: How To Do It, How Not To Do It* (last modified July 23, 1996) <http://www.cis.ohio-state.edu/hypertext/faq/usenet/usenet/advertising/how-to/part1/faq.html>; Brad Templeton, *Emily Postnews Answers Your Questions on Netiquette* (last modified May 13, 1995) <http://www.cis.ohio-state.edu/hypertext/faq/usenet/usenet/emily-postnews/part1/faq.html>; *cf.* Salzenberg, *supra* note 12 ("[C]ustom dictates that advertising be kept to a minimum. It is tolerated if it is infrequent, informative, and low-hype.").

an off-topic message, he just clicks the "next" button to move to the next message. And despite the negative reaction, he is still thrilled to have two new potential customers.

Because of the success of the first ad, Nathen decides to broaden his approach. He writes a short widget advertisement and then directs his newsreader to multiple-post the message to every newsgroup it can find. There are thousands of newsgroups in the list.[21] *Nathen happily considers that if one reader in every newsgroup buys one widget, he will be rich.*

Anna Administrator works for an ISP, but not the one to which Nathen subscribes. One of her job duties is to maintain the ISP's Usenet news server.

From an ISP's vantage point, Usenet is a distributed database[22] of messages.[23] Unlike most other Internet services—particularly the World Wide Web and file transfer protocol[24]—Usenet messages are not stored "anywhere," but rather are stored "everywhere." The messages are not kept on one

21. *See IDG Structure*, *supra* note 14 ("[T]here are an estimated 15,000 different Internet Discussion Groups, on a breathtaking array of subjects.").

22. It is important to define what is meant by "distributed database" here. The term means, at least, a set of data that is stored on more than one computer over a network. Data is distributed for many reasons, such as to facilitate growth, to offer fault tolerance and redundancy, and even to enhance performance. Many of the interesting social and legal features of Usenet spring from the fact that the data is distributed.

Other distributed databases exist online, and these might raise similarly interesting questions. *See, e.g.*, G. Peter Albert, Jr., *Eminent Domain Names: The Struggle to Gain Control of the Internet Domain Name System*, 16 J. MARSHALL J. COMPUTER & INFO. L. 781 (1998) (discussing the domain name system); A. Michael Froomkin, *Flood Control on the Information Ocean: Living with Anonymity, Digital Cash, and Distributed Databases*, 15 J.L. & COM. 395 (1996) (discussing personal profile databases).

23. From the news server's point of view, each individual message is a string of characters, like an ordinary text file. *See* M. Horton & R. Adams, *Standard for Interchange of USENET Messages* § 2 (last modified Dec. 1987) <http://info.internet.isi.edu:80/in-notes/rfc/files/rfc1036.txt> [hereinafter *Usenet RFC*] (defining the official standard for the Usenet protocol). Messages consist of two parts, the "header" and the "body." The header consists of a list of "header lines," one per line. A header line is made up of a pair of text strings, separated by a colon and a space. The string on the left side of the colon is the name of the field (field-name) and to the right of the colon is the body of that field (field-body). *See id.* For example, a header line might look like this: Subject: Anna, Will You Marry Me?

The field that is defined by this header line is the "Subject" field, and the subject is "Anna, Will You Marry Me?" The convention is to call this particular line the "Subject line." Similarly, a typical header will include a newsgroups line, a date line, a from line, etc. *See id.*

The body of the message consists of the contents that the author wishes to post to Usenet.

A note on sources: Internet protocols are defined by technical documents known as Request for Comments (RFCs). RFCs are promulgated by a voluntary, international organization known as the Internet Engineering Task Force. *See* RFC Editor, *Request for Comments* (last modified June 22, 1999) <http://www.rfc-editor.org/overview.html>. RFCs are each assigned a unique numeric identifier, and are referred to by number, or by a short, descriptive name such as "the Usenet RFC."

24. FTP is a service for moving files between computers on the Internet. *See* J. Postel & J. Reynolds, *File Transfer Protocol (FTP)* (last modified Oct. 1985) <http://info.internet.isi.edu:80/in-notes/rfc/files/rfc959.txt> (describing FTP).

central computer or central group of computers, but instead are copied, or "propagated," from computer to computer throughout the network.[25] Each computer that propagates and stores Usenet posts is called a "news server."[26]

Every news server maintains a connection to at least one other news server, known as a "neighbor." Messages move through Usenet between neighbors, a process which can be described through the following analogy. Imagine a room full of people each holding a stack of note cards, some that have been written upon, some blank. Every person considers one or more other people in the room their neighbor. The process begins when one person notices that a previously blank note card has been written on. He shows the message on that note card to each of his neighbors in turn. Each neighbor compares the message with his own cards. If one of the cards in his hand already contains this message,[27] he does nothing. If none of his cards matches the message, he copies its contents onto one of his blank cards. He then takes the newly marked card and repeats the process, showing it to each of his neighbors in turn. Slowly, the contents of the original card make their way onto cards in the stack of every person in the room. In this analogy, every person represents a separate news server, the stack of note cards is the storage space on a given news server, and the writing on a card represents a Usenet message.[28]

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25. *See* TIM O'REILLY & GRACE TODINO, MANAGING UUCP AND USENET 145 (10th ed. 1992) (describing briefly the transmission of messages across Usenet as a "flooding routing algorithm"); *Usenet RFC*, *supra* note 23.

26. All that a computer needs in order to be a news server is server software, enough storage space to hold the desired number of messages, and a connection, or "news feed," to at least one other news server.

27. Every Usenet post is assigned a string of characters that are designed to uniquely identify the message. This is referred to as a "Message-ID." This Message-ID is displayed in the header of every Usenet message. *See Usenet RFC*, *supra* note 23, § 2.1.5. A news server can quickly determine if "one of the cards in its hand already contains this message" by comparing Message-IDs.

28. Note that this description of Usenet hides much of the technical detail that is involved in Usenet message propagation. Some detail has been purposefully suppressed to allow for a clearer description. On the other hand, some detail is hidden because Usenet itself is defined to work with many different kinds of underlying computer technologies. Usenet defines the way in which messages are distributed and expired at a high level, but it does not specify how the actual transfer of data occurs. *See Usenet RFC*, *supra* note 23, § 4 ("Usenet . . . is a logical network resting on top of several existing physical networks."). In fact, Usenet can even work with networks that do not use the Internet Protocol. *See id.* Early Usenet news servers were commonly built on top of networks that used Unix-to-Unix copy protocol (UUCP), a pre-Internet network protocol.

Another protocol that is closely related to Usenet is the Network News Transfer Protocol (NNTP). *See* Brian Kantor & Phil Lapsley, *Network News Transfer Protocol: A Proposed Standard for the Stream-Based Transmission of News* (last modified Feb. 1986) <http://www.faqs.org/rfcs/rfc977.html>. NNTP works on a different level of abstraction from Usenet. Whereas Usenet takes a "big picture" view of how posts propagate through the network, NNTP dictates what steps

News servers also play another role. When a user launches a newsreader, the program contacts a prespecified news server—usually the news server that is maintained by his ISP. As far as the user and the newsreader are concerned, that news server *is* Usenet and the messages stored on the news server are the messages of Usenet. If a message written by a user in Seoul has not yet propagated to Nathen's ISP's news server in Los Angeles, from Nathen's point of view there is no such message. If a message written a month ago has been deleted from the news server, it too is not in Usenet.[29]

As a result, no one party or organization controls or can control Usenet. "Every administrator controls his own site. No one has any real control over any site but his own."[30] This decentralized control creates legal problems that will be discussed in the remainder of this Comment.

Anna is one of the first people to read Nathen's ad. After reading the message she concludes that it violates many basic rules of conduct, or "netiquette," that Usenet users obey.

Netiquette dictates that cross-posting and multiple-posting are only considered proper by the Usenet community if the message is highly relevant to the topic of each destination newsgroup, the message is potentially of interest to readers of each newsgroup, and the number of destination newsgroups is kept low.[31] Multiple-posting to an unacceptable number of

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are involved in the actual transfer of messages from a news server. By way of analogy, think of the steps required to drive from downtown Los Angeles to Westwood. Usenet is analogous to the maps and directions that guide the traveler from one place to another. NNTP is like the rules for operating an automobile to take the trip. These include rules for using the steering wheel to turn left and right and the pedals to accelerate and stop.

A common misconception is that Usenet requires NNTP and vice versa. Just as you can get from downtown to Westwood without a car, you can communicate via Usenet without NNTP. *See Usenet RFC*, *supra* note 23, § 4. But most people would not take this trip without a car, just as most people do not use Usenet except over NNTP.

29. No Usenet news server stores every Usenet message. The volume of messages is so large that to archive Usenet fully would require an impractical amount of storage space. Most news servers are configured to "expire," or delete, local copies of Usenet messages that are a certain number of days old. Some servers act as Usenet archival servers. These are databases, usually accessible through the World Wide Web, through which old Usenet posts can be retrieved. Deja.com—formerly dejanews—is a popular example of this kind of service. *See Deja.com* (visited July 2, 1999) <http://www.deja.com> (the deja.com home page).

30. Salzenberg, *supra* note 12.

31. The definition of "low" is imprecisely defined. A cross-post to more than three or four newsgroups will probably be considered excessive. Multiple-posting is generally less acceptable because the reader of a multiple-posted message cannot tell just by looking at the "Newsgroups:" line that the message has been identically posted to other newsgroups. Furthermore, news servers will sometimes save storage space by only storing one copy of a cross-posted message, with pointers to all cross-posted newsgroups, while they cannot do likewise for multiple-posted messages.

newsgroups is called "excessive multiple-posting" or "spam."[32] Spam is "generally accepted as a major threat to Usenet."[33]

To Anna, posts like Nathen's are the biggest abuse of Usenet. She feels commercial spam threatens to drown Usenet under a deluge of off-topic advertisements. Anna exploits a feature of Usenet, the forged, third-party cancel message, to delete Nathen's posts from her own news server. She then propagates the cancel message throughout Usenet, which succeeds in preventing Nathen's message from getting to all but a tiny percentage of Usenet news servers. It is almost as if Nathen's message was never sent at all.

Usenet has a built-in[34] mechanism for removing messages. This was designed to let a user remove his own post from Usenet "so that someone could take back their words, remove information that was no longer accurate, replace inaccurate information, and other, similar purposes."[35] To accomplish this, a user or newsreader simply posts a special Usenet message called, appropriately, a "cancel message" to the news server.[36]

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32. Spam also refers to the act of sending unsolicited electronic mail, usually a commercial advertisement, to an excessive number of electronic mail accounts. The most celebrated act of Usenet spam was also one of the earliest acts of spam. Phoenix, Arizona lawyers Laurence Canter and Martha Siegel decided to advertise their immigration law services by posting an advertisement to more than 5000 different newsgroups. *See, e.g.*, Brad Patten, *Local Lawyers' Ad Stirs Internet Furor*, PHOENIX GAZETTE, Apr. 15, 1994, at A1.

33. Tim Skirvin, *Cancel Messages: Frequently Asked Questions* § 1(E) (last modified Oct. 18, 1997) <http://www.ews.uiuc.edu/~tskirvin/faqs/cancel.html>. Because excessive multiple-posts are usually off-topic to most newsgroups, it decreases the signal-to-noise ratio (a phrase borrowed from electronics to describe the typical amount of relevant news in a Usenet newsgroup—a newsgroup with a high signal-to-noise ratio has many relevant posts (signal) relative to few off-topic posts (noise)) of newsgroups, and thereby lowers the utility of Usenet. Excessive cross-posts (ECPs) are a slightly lesser evil because a reader can quickly tell that a message is an ECP, so they are easier to pick out and ignore.

34. *See generally Usenet RFC*, *supra* note 23, § 3.1.

35. Skirvin, *supra* note 33, § 1(E).

36. There is a bit more to it technically, although it is a relatively simple process: In addition to typical discussion posts, Usenet news servers understand "control" messages. *See Usenet RFC*, *supra* note 23, § 3. These are structurally identical to normal messages, with the addition of a "Control:" field in the header. Rather than store and propagate control messages in the usual manner, news servers perform some action based on the directive following the word "Control:". If the directive is the word "cancel" followed by the unique Message-ID of another message, this is known as a "cancel message." Upon receiving a cancel message, the typical news server behavior is to check if it has stored a message bearing that Message-ID, and if so, to delete the message. *See* Skirvin, *supra* note 33, § 1(A). However, system administrators can easily configure a news server to refuse to honor cancel messages. *Cf.* Shaun Davis-Gluyas, *The Bincancel FAQ* (last modified Aug. 6, 1997) <http://www.southcom.com.au/~geniac/binfull.txt> (describing how to configure the popular InterNetNews (INN) news server software to ignore cancel requests). This function can be used indiscriminately, or it can be configured to work selectively, for example, to ignore cancel messages issued from a particular site. *See* Mark Eckenwiler, *Usenet Death . . . PICS?*, Post of Mark Eckenwiler on Cyberia mailing list, Aug. 8, 1997 (on file with author) (discussing several ways in which cancel messages can be ignored). However, the ability to screen selectively is not really very selective; once a site's cancel messages are ignored by a news server, the server will also

The rules of Usenet state that "[o]nly the author of the message or the local news administrator is allowed to send [a cancel] message."[37] This edict works in theory, but not in practice; these rules require only that the cancel message[38] be addressed by the same user who posted the original message. Because it is relatively easy to forge such addresses,[39] any experienced user can cancel another user's newsgroup posts.[40] In this way, any experienced user can silence the voice of another. No user can post a message to Usenet unless each and every experienced user refrains from canceling. This ability for every member of the society to silence another's speech is startlingly different from the ability to silence speech in the real world.

Nathen logs back in to his system, unaware of Anna's cancel message. Instead of dozens of new customers, Nathen finds only a few angry pieces of hate electronic mail sent by users who read his post before Anna canceled it.[41] *Nathen's administrator also receives complaints and Nathen is soon kicked off the system. Weeks pass before Nathen learns that his post was never widely read. After much more research he learns about Anna's role. Infuriated, Nathen hires a lawyer and sues Anna. He charges her with trespass, intentional infliction of emotional distress, destruction of property, and theft. In her answer, Anna files a counterclaim as a member of Usenet against Nathen for the damage he caused through commercial spam. Nathen also writes a letter to state and federal legislators, urging them to write a law that will end disruptive Usenet message cancellation.*

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refuse benign or useful cancel messages from that site. Furthermore, constantly reconfiguring news servers to ignore every rogue canceler that comes along can be a time-consuming task. *See id.* ("The problem with . . . ignoring cancels is the relative burden on thousands of news administrators as compared to the ease of generating abusive cancels.").

37. *Usenet RFC*, *supra* note 23, § 3.1.

38. For a description of cancel messages, see *supra* notes 34–36 and accompanying text.

39. The technique used to forge a news message is similar to the steps required to forge electronic mail. Forgery of electronic mail has been discussed extensively in legal scholarship. *See, e.g.*, Post, *supra* note 5, *passim*.

40. Cancel messages are taxonomically classified by the relationship between the person who posted the original message and the person who canceled the message. A cancel message sent to cancel one's own post is called a "first-party" cancel. A "second-party" cancel occurs when a system administrator cancels a post written by a user on a network or computer administered by that administrator. Lastly, a message canceled by anyone other than the original writer or the original writer's system administrator is a "third-party" cancel.

41. Remember that messages take time to propagate through Usenet. There is a delay between the time Nathen posts a message to his news server and the time the message arrives on Anna's news server. Furthermore, an additional delay occurs before Anna's cancel message can propagate. In the meantime, other news servers would have received the post, and other users could have read the post.

II. USENET REGULATION?

Should Congress or some state legislature pass a law banning Usenet cancellation? Specifically, assuming that such a law is prudent and enforceable, what kind of harm might it cause to Usenet?

Drafting laws to regulate the Internet is a daunting task. If Congress tries to regulate Usenet message cancelers, the conditions of Usenet may shift and may render the regulation useless, or, worse, the regulation may disrupt the evolution of Usenet. Such a law thus can fail in many ways.[42]

Imagine that Congress writes a statute that bans all non-first-party cancellations.[43] It might, for example, define a new crime punishing the removal of a message "written by another" from a Usenet news server. If the congressman who writes the law has done a minimum amount of research, the statute will probably provide a defense to system administrators who remove messages from their servers as a regular act of system maintenance. Any law that punished such acts would be strongly resisted.[44]

However, such a statute's approach to ending harmful cancellations is still overinclusive. Many Usenet users believe that third-party cancellation

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42. This part of the Comment presumes that legislators are willing to write laws to end Usenet message cancellation. The initial question of whether lawmakers *would* write such laws is separate from this analysis, but I would like to comment on it briefly. Without delving too deeply into when and why legislative bodies decide to regulate, it seems unlikely that an anti-cancel-message law will soon be passed by Congress. First, Congress would want to know how often messages are cancelled. Is it a theoretical harm that rarely really occurs, or is it an every day happening? Second, the harm complained of is intangible and abstract. The service affected, Usenet, is a bit obscure and relatively unknown. Third, as with most Internet regulation, Congress may be wary of regulating because of the tricky First Amendment issues that would be raised.

Any debate by Congress about Usenet cancellation will probably resemble the ongoing debate over whether to ban commercial spam sent via electronic mail. *See also* David E. Sorkin, *Unsolicited Commercial E-Mail and the Telephone Consumer Protection Act of 1991*, 45 BUFF. L. REV. 1001 (1997); Joshua A. Marcus, Note, *Commercial Speech on the Internet: Spam and the First Amendment*, 16 CARDOZO ARTS & ENT. L.J. 245 (1998). *See generally* Coalition Against Unsolicited Commercial Email, *Pending Legislation* (visited July 2, 1999) <http://www.cauce.org/legislation.html>.

As unlikely as it is that Congress will regulate (and punish) small-time Usenet cancellation, federal legislators may be persuaded to regulate cancellation to prevent larger-scale abuse. For example, Usenet Death Penalties (UDPs) are a dramatic form of large-scale message cancellation that will be discussed later. *See infra* notes 126–127 and accompanying text.

43. For a definition of "first party" cancellation, see *supra* note 40.

44. For example, system administrators configure news servers to expire old messages. *See supra* note 29. This form of message removal is a necessity, given the finite storage space that exists on any one news server.

Note that Anna's cancellation described in Part I would not fall under the defense to this statute. She did not cancel a message on the news server that she administers; she propagated a cancel message that removed Nathen's message from all news servers.

is sometimes appropriate. For example, an active group of longtime Usenet users, known as despammers, cancelers, or antispam activists, constantly monitor Usenet, looking for and deleting spam.[45] This loose-knit volunteer group has written computer programs that automate the process of spam detection and cancellation.[46] Although some users find even this cancellation improper,[47] many feel that Usenet would be buried under the weight of spam if not for this group.[48]

The weakness in this hypothetical law reflects how difficult it is to regulate an Internet space. Usenet evolves. Actions that seem abusive when legislation is drafted may later seem benign or beneficial because of shifting user attitudes. Changes in technology can make old modes of abuse impossible, or create entirely new methods of abuse. Laws written by people that do not appreciate and anticipate such changes might cause unintended consequences.

Thus, writers of legislation need to be able to track the moving target of Usenet. It is not enough to understand how Usenet works at any moment in time—it is vital also to comprehend how Usenet has developed, and to foresee how Usenet might change.

One specific reason why this kind of regulation is so hard to create is that policymakers have no theory to describe *when* to regulate an Internet service. Internet services have lifelines—they are born, they grow to maturity, and they die—and regulations that govern them may succeed or fail depending on when in the lifeline they are enacted. Laws that regulate too early in the lifeline may stunt the growth of the service. Likewise, laws

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45. *See* Mark Frauenfelder, *Usenet's Etiquette-Enforcement Agency*, WIRED NEWS (visited July 2, 1999) <http://www.wired.com/news/news/wiredview/story/5262.html>; *see also* SPUTUM, *sputum.com: Anti-Spam Tactical Operations HQ* (visited July 2, 1999) <http://www.sputum.com> (the home page for a group of antispam activists calling themselves the "SubGenius Police, Usenet Tactical Unit (Mobile)").

46. These programs are commonly called "cancelbots" and are programmed to automatically search out and cancel Usenet messages that fit a certain profile. For a general discussion of bots, see *supra* note 11.

47. For example, a group calling themselves the "Freedom Knights of Usenet" campaign against any kind of third-party cancellation. *See* Dave Hayes, *Freedom Knights of Usenet* (visited July 2, 1999) <http://www.jetcafe.org/~dave/usenet/> (the Freedom Knights' home page); Dave Hayes, *The USENET Site of Virtue FAQ* § 3(1)(a) (visited July 2, 1999) <http://www.jetcafe.org/~dave/usenet/virtue.html> ("A Freedom Knight -never- issues cancel messages, except for his or her own postings."). The Freedom Knights recommend that followers who run news servers agree never to cancel posts unless the cancel request can be cryptographically verified to be from the original message's author. *See id.* § 3(2)(e).

48. *See, e.g.*, *And the Winners Are . . .* (visited July 2, 1999) <http://www.sputum.com/suitsite/gma2.html> (praising the efforts of a prominent Usenet spam canceler, Chris Lewis, for working "tirelessly to ensure the continued existence of the original Usenet through the years of hard work by his cancelbots").

that govern at the end of the service's life may come too late to be effective, or may be rendered obsolete by changes in the service. Unfortunately, instead of a thoughtful debate about the importance of timing, the parties involved—legislators, cyberlibertarians, and legal scholars—have taken extreme positions that do not adequately address this issue.

The lawmaker's instinct is to regulate first and ask questions later. Statutes are inspired by the passions of the moment and are not often carefully timed to maximize effectiveness. The Communications Decency Act of 1996 became law shortly after the popular media convinced the public of the pervasive and destructive nature of so-called cyberporn.[49] Gun control legislation was hurriedly pushed through the Senate following the school shootings in Littleton, Colorado.[50] Because legislators are pressured to act quickly, and because there is no theory of "ripeness" in this field, laws are sometimes enacted before they are needed, or prudent.

The cyberlibertarian critique seeks to convince governments of the impropriety and futility of government regulation.[51] Governments should refrain from enacting Internet-regulating laws. The first element of the critique is simply that the Internet cannot be governed. This is primarily because the network, by design, is decentralized, and power is likewise dispersed. Usenet is a classic example. In order to construct a flexible and extensible service, Usenet's architects provided for distributed control in the hands of every news server administrator. Because no individual controls Usenet, centralized control over it is difficult. The Internet

> is asymmetrical in the way it gives power to the powerless. That is, it undermines central authorities whether they are good or bad, and it helps dispersed forces to act together whether *they* are good or bad. In other words, it's a feeble tool for propaganda, but it's perfect for conspiracy.[52]

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49. On June 3, 1995, *Time* magazine ran a cover story by Philip Elmer-Dewitt detailing the growing problem of online "cyberporn." Philip Elmer-Dewitt, *On a Screen Near You: Cyberporn*, TIME, July 3, 1995, at 38. The story and the law review article from which it derived much of its information, Marty Rimm, *Marketing Pornography on the Information Superhighway: A Survey of 917,410 Images, Descriptions, Short Stories, and Animations Downloaded 8.5 Million Times by Consumers in Over 2000 Cities in Forty Countries, Provinces, and Territories*, 83 GEO. L.J. 1849 (1995), has since been largely discredited. *See* Project 2000, *The Cyberporn Debate* (visited June 28, 1999) <http://ecommerce.vanderbilt.edu/cyberporn.debate.html>. During the floor debate over the CDA, two proponents of the bill, Senator Grassley and Senator Exon, read portions of the law review article into the congressional record. *See id.*

50. *See* Frank Bruni, *Senate Votes Gun Curbs, Hours After School Shooting*, N.Y. TIMES, May 21, 1999, at A1.

51. *See, e.g.*, Barlow, *supra* note 1.

52. DYSON, *supra* note 4, at 8.

Another reason that the Internet allegedly cannot be governed is that enforcement and detection are difficult, if not impossible.[53] Decentralization gives Internet users many dark corners in which to hide from the law. Internet traffic adapts to flow around government-monitored bottlenecks; in a world of code, scofflaws can use technology to evade government traps.

A second libertarian argument is that governments have no moral authority to rule, primarily because the governed do not consent. "Governments derive their just powers from the consent of the governed. You have neither solicited nor received ours."[54] Moral authority, instead, is vested in the Internet's internal (and often informal) rule-making bodies.[55] "These communities' laws actually have higher moral authority than those of countries or most other governments, since their members join voluntarily and are free to go."[56]

Finally, according to these critics, when government does choose to craft laws regulating the Internet, it usually does a poor job. This is because government bodies do not understand online culture, ethics, or unwritten rules.[57] Prior experience at governing does not translate well to the online world.[58]

The cyberlibertarian critique has begun to influence legal scholars. According to the scholarship, the responsible thing to do is to do nothing: Deference is the repeated mantra. Lawrence Lessig has warned that "[i]t would be best, therefore, for [lawmakers] to be extremely deferential to the actions of democrats here. Deference means standing out of the way, and letting ordinary practice and understandings catch up to the technology."[59] Trotter Hardy argues for a "presumption of decentralization," which means "the first answer to how a legal problem in cyberspace should be solved is to 'do nothing.'"[60]

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53. *See* Barlow, *supra* note 1 ("[N]or do you possess any methods of enforcement we have true reason to fear.").

54. *Id.*

55. *See, e.g., id.* ("Where there are real conflicts, where there are wrongs, we will identify them and address them by our means.").

56. DYSON, *supra* note 4, at 9.

57. *See, e.g.*, Barlow, *supra* note 1 ("You do not know our culture, our ethics, or the unwritten codes that already provide our society more order than could be obtained by any of your impositions.").

58. *See id.* ("Your legal concepts of property, expression, identity, movement, and context do not apply to us. They are based on matter, There is no matter here.").

59. Lawrence Lessig, *Reading the Constitution in Cyberspace*, 45 EMORY L.J. 869, 907 (1996). Lawrence Lessig was writing specifically about courts, but his arguments are equally applicable to the role of legislatures.

60. I. Trotter Hardy, *The Proper Legal Regime for "Cyberspace,"* 55 U. PITT. L. REV. 993, 1054 (1994).

Meanwhile, David Johnson and David Post argue that the law should do more than merely defer; they would have government treat the Internet as a separate place that can create its own laws.[61] External governments would then exert influence over this "place" by following the same rules of diplomacy and comity that they use for foreign states:[62]

> This new boundary defines a distinct Cyberspace that needs and can create its own law and legal institutions. Territorially based law-makers and law-enforcers find this new environment deeply threatening. But established territorial authorities may yet learn to defer to the self-regulatory efforts of Cyberspace participants who care most deeply about this new digital trade in ideas, information, and services.[63]

Neither the legislators', the cyberlibertarians', nor the legal scholars' approaches to government regulation can suffice to assist the careful lawmaker. Each approach relies on valid arguments, but each is too extreme. Lawmakers often regulate too early and write laws that result in unintended consequences. Likewise, the libertarian policy of absolute deference underutilizes the power of government. Careful, deliberative, well-timed governance can help solve online problems that seem intractable otherwise. We thus need to move towards a deeper understanding of the development of online communities.

I will next propose a model that legislators can use to decide when to regulate an Internet space like Usenet. Specifically, the model provides a way to measure how much harm a law will cause to an Internet space. The reader should note that only the harmful effects of a law, not the benefits, are discussed. I chose this focus because this is the step that legislators need to undertake first. As a rule, lawmakers should always analyze the harmful effects of an Internet law first.

Another reason to focus on harms is that they are the most difficult to predict. When lawmakers weigh the benefits of their Internet laws, they can borrow from their experiences in other fields. In contrast, the damage that laws cause the Internet is less well understood.

This Comment will provide a temporal model of the lifeline of Internet spaces; the model will be used to set out a theory of when to regulate. Part III will attempt to two-dimensionalize the parts of the Internet. Lawmakers need to understand both (1) how parts of the Internet such as Usenet are created, and (2) how these parts develop. If we look at both creation and development simultaneously, we can better understand the harm that

61. *See* David R. Johnson & David Post, *Law and Borders—The Rise of Law in Cyberspace*, 48 STAN. L. REV. 1367 *passim* (1996).

62. *See id.*

63. *Id.* at 1367.

regulation can do. This understanding might then lead to a more nuanced understanding of what Usenet is and what it might become.

III. THE "SPACE" MODEL OF INTERNET GOVERNANCE

A. "Space" Defined

The model I develop in this Comment provides a taxonomy for organizing the different parts of the Internet. Legislators seeking to regulate a part of the Internet should understand where that part fits within the taxonomy. The model will help lawmakers compare the part to other parts, understand its past evolution, and ultimately predict the harmful effect, if any, of a new law.

Recall the sea of Internet services that confronted Nathen. The term "Internet service" is a bit imprecise, and I henceforth dispense with vague references to different Internet "services," "parts," or "methods of online communication." The model will refer to parts of the Internet as "spaces."

By "space," I mean an option for communication that is different from other options—other spaces—in at least one way that is important to would-be communicators. Users can choose between two spaces because they differ, by definition, in the communicative experience that they provide.[64] If a communicator—a speaker or a listener—dislikes a particular feature of one space, he or she can opt for a different space that does not suffer from the flaw. Communicators select the space that most closely matches their preferences.

What are the ways in which spaces might differ? There are as many possibilities as there are human preferences: for example, the ability of a speaker to silence another; the number of listeners; the topic of discussion; the age, gender, ethnic, or racial make-up of the listeners; the ability to read archived conversations; and the ease of use. Differences arise because spaces have different ground rules, structures, technological underpinnings, or subscriber lists.

64. A space is different from a community; the latter is simultaneously more and less broad than the former. Communities are sets of people who communicate with one another. While individual spaces like Usenet can be made up of many communities, individual communities can contain multiple spaces (e.g., people who use the Linux operating system—a community—discuss Linux in dozens of newsgroups—individual spaces). Nor is a space simply a "service," as that term is used to describe the different parts of the Internet. Two different web pages might be different spaces, despite the fact that they are written in HTML. Likewise, two distinct Internet hosts might together comprise one space: News servers are generally indistinguishable from one another and deliver content for the same space, Usenet. Web page mirrors are delivered by computers on opposite sides of the globe but contain identical content and thereby act as a single space.

A few examples illustrate the definition. Television is a space. It competes with other spaces such as radio, newspaper, and the Internet. A consumer of communication can distinguish between these in important ways. If communicators demand video, they might choose television or the Internet, but not radio or newspaper.

Some examples of Internet spaces are Usenet, Yahoo's Discussion Groups, America Online's (AOL's) message boards, and Internet Relay Chat (IRC). Each of these is a distinct space because consumers can distinguish between it and the other spaces. Usenet messages propagate slowly through the network unlike IRC's real-time chat. AOL charges a monthly fee and requires users to sign a contract to access its message boards, while Usenet newsgroups are freely available to all comers. Yahoo's groups are read using a web-based interface that is unlike Usenet newsreaders. Because a computer user can distinguish between these four modes of communications in significant ways, they constitute distinct spaces within the Internet.

This definition of space serves as the building block for the typology that this Comment develops. Initially, the definition is important because it helps us elaborate on the libertarian fear of governance.

B. How Does Regulation Hurt the Internet?

What harm can regulation cause the Internet? Before a road map can be drawn for potential lawmakers, we must understand the terrain. What concerns underlie the libertarian fear? There are at least four different (perhaps overlapping) fears.

1. Unnecessary Regulatory Solutions

Government should not impose regulation for problems that would be solved without regulation—the machinery of government should only be deployed to solve problems that the private sector cannot solve on its own. When government action solves a problem that could have been addressed otherwise, the government effort is wasted. This philosophy may reflect a suspicion that regulators will solve the problem inefficiently, or that they will not really solve the problem at all. Even in cases where regulation is more efficient than private action, so long as the private alternative is reasonably efficient, government action is best directed at other problems that the private sector could never remedy.

It may seem unusual to think of public action that could have been obviated by private action as a "harm." So long as the public regulation solves the problem, what is the injury? First, when we engage legislators in the

lawmaking process, we divert their attention from other issues. Regulation that addresses what the private sector could have dealt with on its own is thus a loss to society. Similarly, government action has the effect of distorting the private "market" for self-regulation. Private actors no longer need to solve a particular problem once the government regulates the relevant activity. While this may free up private actors to solve other problems, the private actors will then invest resources in ways that do not accurately reflect nongovernmental market forces; this imbalance can lead to inefficiency.

2. Destructive Regulation

Regulators also may harm the Internet when they ignore the informal rules and norms that have developed within Internet spaces. When established norms are ignored, the population that is governed will question the legitimacy of the new laws. Additionally, when the government ignores norms, it disregards a useful tool that can be used to craft better laws. Finally, by preempting the development of norms, laws take away from the feeling of community that norm development may foster.

Laws that lawmakers attempt to impose on Internet activity may conflict with established norms developed from within. When faced with such conflicts, Internet users may ignore the laws and continue to adhere to the norms, which will prompt more active—and perhaps more invasive—laws and law enforcement. Alternatively, people might choose to obey the laws—perhaps because of the government imprimatur—and abandon the norms. This might be an intentional result: The government often passes laws with the hope of destroying or altering existing norms. For example, laws that restrict smoking in public places, in addition to their beneficial effects on health and welfare, may be aimed at changing our normative views of smoking.[65] However, lawmakers who draft norm-defying laws should consider the costs: People are likelier to suspect the legitimacy of a law that defeats existing norms. Internal norms possess moral authority that external laws do not.[66] And worse yet are laws that destroy norms unintentionally.

Moreover, regulations that are written after a study of norms are often better regulations. The governed are likelier to obey such laws when they

65. *See* Anita Bernstein, *Better Living Through Crime and Tort*, 76 B.U. L. REV. 169, 178 (1996) ("[R]esearchers who studied public reactions to new government measures against cigarette smoking in the 1960s and 70s found that each change increased the percentage of people who regarded cigarette smoking as deviant.").

66. *See supra* notes 54–56 and accompanying text.

realize that the underlying norms were products of their own collective making. Additionally, norms reflect the shared wisdom and experience of the population. This population usually understands the technology and the policies better than any legislator can.

Finally, even when laws are more effective than norms would be, the community loses something by not developing its own solutions. Governance from without may solve the problem, but the community does not get to share as intimately in the deliberation.[67] Without this process, members lose the feeling of being personally invested in the well-being of their space.

3. Regulation That Reduces Participation

In the online context, users can often "opt out" of a government regulation by switching to similar but differently regulated space. Online membership is a slippery concept. Users can switch into and out of spaces with ease. An unpopular regulation can kill a space by pushing users into alternative services. Of course, the lawmaker's goal in passing a regulation may be to kill a space, though it strains the imagination to think of a government interest that is so compelling as to justify such a goal. In general, governments must strive to prevent the accidental destruction of Internet spaces through regulation.

Not all spaces have viable alternatives, and those are the ones most injured by odious legislation. The harm to the Internet is greatest when a user is faced with a choice between using a space with a bad regulation and using no space at all.

4. Technological Ignorance and Technological Change

Finally, legislators often simply misunderstand technology. Internet technology changes quickly, and its descriptions are often rife with complex acronyms and arcane networking concepts. Lawmakers who do not understand the Internet space that they are regulating tend to write laws that either fail to solve the problem or injure the regulated space.

Furthermore, lawmaking is a slow process that has trouble keeping pace with the rapid shifts in technology. Regulations are often rendered moot when the problems that they address are solved by changes in the technology.

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67. *See* DYSON, *supra* note 4, at 43 ("Government can play a divisive role vis a vis communities. Often, the more government provides, the less community members themselves contribute. For example, parents tend to identify less with a government-provided school than with a private school they raise money for and oversee themselves." (footnote omitted)).

C. Space Building

1. Choices

The first step on the road to regulating Usenet is to look at its alternatives. Lawmakers should not try to resolve conflicts between Usenet's users until they understand what other choices those users had.

Why is choice important? By understanding the choices available to users, lawmakers can better assess whether regulations will bring about the kinds of harms described in Part III.B. First, by understanding choice, regulators can better predict the effects of their rules. Will users submit to the regulations or will they flee to the next best alternative? If there is no comparable alternative, will users be forced to accept the regulations?

Studying choice is also educative. By looking at alternative spaces and how they were created, lawmakers can better learn about the relevant technology. Usenet makes more sense structurally when it is compared to mailing lists and web-based discussion groups. Regulators who understand technology better will make wiser choices and will be more capable of defending their decisions.

Finally, government regulators may want to encourage the creation of new spaces. To do so, they must study the way that the available spaces were created. Perhaps the government can then create new alternatives of its own.

Unlike the real world, the Internet makes the choice between alternate "societies" easy. "[T]here is an infinite amount of space, and movement between online communities is entirely frictionless."[68] In comparison, there is a lot of friction in moving between real-world communities. "Those [online] who find the rules oppressive or unfair may simply leave and join another community (or start their own.)"[69]

What choices do users have online? How were these choices created, and when are they destroyed? Let us turn once again to Usenet.

2. The Choice to Use Usenet

There are many alternatives to Usenet. Usenet is essentially just a means for communicating with other people. The simplest alternative is not to use a computer at all. Nathen could have looked for new customers face-to-face, by telephone, or by television advertisements. He could have explored an

68. David G. Post, *New World War*, REASON, Apr. 1996, at 28, 33.

69. *Id.*; *see also* DYSON, *supra* note 4, at 9 ("These communities' laws actually have higher moral authority than those of countries or most other governments, since their members join voluntarily and are free to go.").

online-but-not-Internet space such as a dial-in bulletin board, or AOL.[70] Once on the Internet, Nathen might have surfed the World Wide Web, joined a Yahoo community, or subscribed to mailing lists, rather than posting and reading Usenet messages.[71] Chat rooms and private electronic mail were additional options.[72]

Anna and Nathen were also brought together by the choices they made once they started to use Usenet. There are thousands of newsgroups within Usenet.[73] Assume Nathen only spammed the "alt.widgets.*"[74] hierarchy of newsgroups. If Anna had chosen not to read the alt.widgets.* hierarchy, or if her ISP had decided not to carry the alt.widgets.* hierarchy, the conflict would not have occurred.

As a final example, what if Anna knew in advance that Nathen's ISP did a poor job of combating its users' abuses? In that case, she might have been using her newsreader's "kill file" before Nathen spammed. A user keeps in his kill file a list of "filtering rules" that specify categories of messages that the user would not like to be shown.[75] Anna could have specified in her kill file not to display any messages from Nathen's ISP. If she did that, then whenever her newsreader encountered a message from that address, it would not display the message; Anna would never have known that Nathen's message had been posted.[76]

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70. Of course, America Online (AOL) is now a superset of the Internet. AOL provides its own content and "spaces," but it is also a full ISP. Likewise, many dial-in bulletin boards also provide Internet and Usenet access.

71. Note, however, that for advertisers, Usenet is often the most cost-efficient choice. The cost to place a post is minimal—all that is required is a connection to the Internet and some rudimentary training. With costs diminishing to zero, any response means a rapidly returned yield. Moreover, efficient advertisers need not attack all newsgroups at once with an easily detected and defeated excessive multiple-post. Usenet's specialized subject matter hierarchy allows advertisers to target each ad carefully.

72. What kinds of factors led Nathen to communicate over Usenet instead of an alternative? There are many factors that he may have considered, but they tend to fall into two categories: utility and burden. Utility factors benefit the user's experience. These factors include profitability, the format of the communication, the quality of the debate, the richness of discussion topics, and the number of other users using the service. Burden factors detract from the quality of debate. These include the abuse that can occur on the service, the off-topic noise, and the level of top-down censorship. Each user must weigh the utility against the burdens of all the choices, and, in a marketplace of services, must choose the best service for her needs.

73. *See supra* note 14 and accompanying text.

74. For an explanation of the * wildcard, see *supra* note 14.

75. The important difference between kill files and cancel messages is that kill files only act locally. A user with a kill file will not see "killed" messages, but those messages will still exist on his ISP's news server, and that message will still propagate to the rest of Usenet.

76. Kill files, however, do have several shortcomings. The main disadvantage is that every Usenet abuser gets one free shot at abuse before users know to make a new entry in a kill file. Additionally, kill files are all-or-nothing fixes, and nonabusive messages from the same address will also be ignored. Finally, abusers can constantly alter the format of their posts to get around

Thus, there are many alternatives to Usenet, but a simple laundry list does not tell us enough; we need to dig deeper. We know that Anna and Nathen had alternatives, but how attractive were the alternatives? Did they really have a choice but to meet when and where they did? Lawmakers need, it seems, to understand where Usenet alternatives on the Internet come from, and what new alternatives might be available in the future.

3. How Internet Spaces Are Created

Who creates new Internet spaces, and who decides whether a new Internet offering survives? What follows is the story of how Internet spaces are created. It is in part a historical and sociological look at where alternatives to Usenet have come from, as well as an attempt to develop an analytic structure and a taxonomy for the processes of Internet service creation.

Before investigating the creation of spaces, the previous definition of "space" must be refined. Note that spaces can be identified at different levels of specificity. An entire communications medium—such as television or radio—is a space that is distinguishable from other communications media. After a speaker or listener chooses such a medium, he is faced with further choices within that space. A space can be made up of other spaces, or "subspaces." The Internet is made up of many subspaces: Usenet, IRC, and the web are just a few. Likewise, the Internet is a "superspace" to Usenet. Usenet is further made up of subspaces: Each newsgroup is a space that can be distinguished from other newsgroups on the basis of topic. And Usenet can be divided into subspaces in other ways. For example, "newsgroups in which commercial solicitation is permitted" is a space that can be distinguished from "newsgroups in which commercial solicitation is banned."

Because spaces can be nested inside one another like the parts of a stacking Russian doll, an analyst of spaces should focus on one level at a time. When spaces that are defined on different levels are compared, confusing results occur. For example, if we compare Usenet to printed newspapers, we may focus on differences that could just as well distinguish radio from the Internet, but that do not rely on Usenet's unique characteristics. And it never makes sense to compare a space to one of its subspaces. Usenet cannot sensibly be compared to the misc.widgets newsgroup.

When discussing spaces, it is thus important to focus on one level at a time. This Comment focuses on Usenet and its alternatives without focusing on Usenet's subspaces. I chose this focus because my immediate goal is to

kill files. Ultimately, this may result in something analogous to an arms race between the posts of Usenet abusers and the kill files of Usenet readers.

help lawmakers decide whether to regulate Usenet as a whole. A law regulating Usenet cancellation, for example, will apply to all of Usenet, not just to the misc.widgets.* hierarchy. When one seeks to regulate Internet spaces, one will almost always target one level of the space hierarchy to the exclusion of others. That level of the hierarchy should, as a practical matter, be the focus of any space analysis.

The important thing about spaces that compete with Usenet is that there are only a small number of them. Nathen thus did not have thousands of similar spaces to choose from to post advertisements and messages. He could have used Usenet, message boards on AOL or Yahoo, one of the dozen or so dial-in bulletin boards in his area, or one of a handful of other similar spaces. He could post advertisements but not engage in conversations using an auction service such as Onsale or eBay. If he wanted to use another kind of communication—perhaps real-time chat—there might have been more spaces to choose from, though there might have been fewer.

Each space is qualitatively different, but how did they become that way? To understand the choices that users make, lawmakers need to understand three things: (1) how spaces are created, (2) why they are created, and (3) what they must do to survive or prosper.

There are several ways to create a new space. One way is to create new technology.[77] Computer programmers continually dream up new spaces called servers, daemons, and hosts. Tim Berners-Lee, when he conceived of the World Wide Web, created a new space, one that would be used to create countless new subspaces.[78]

A second way to build a new space is to manipulate relationships between different users or between users and administrators, for example, through legally binding contracts. AOL provides message boards, a Usenet-like space. To use the space, a user must first sign a contract with AOL, and its terms might restrict what the user can do or say in the space. Additionally, and unlike Usenet, AOL centrally controls the servers that host the message boards. Thus, as compared to Usenet, these message boards offer a different communication experience, a unique space.

Having answered the easier question of how spaces are created, we turn to why they are created. The impetus is conflict. Conflicts, as the term is used here, need not be adversarial. It is a conflict when users want to do something that technology prevents them from doing.[79] The Internet is an

77. *See* Lessig, *supra* note 59, at 895–906.

78. *See Tim Berners-Lee* (last modified June 15, 1999) <http://www.w3.org/People/Berners-Lee-Bio.html/> (the Tim Berners-Lee homepage).

79. As an example, a Usenet user cannot authoritatively verify that a Usenet post was really written by the claimed author. A user who needs to do this confronts a conflict with

ever changing place, and these changes are motivated by conflicts between users. One user will do something, such as post commercial Usenet spam, that other users will dislike, perhaps because they regard it as abusive or hostile. Individual users, groups of users, and administrators each try to resolve the conflict. One way to respond to a conflict is to create a new space.

Consider a simple example. Suppose an engineer, Judy, designs widgets for a living. She wants to use the Internet to talk about the art of widget design with other widget designers. She first turns to the Usenet newsgroup sci.widget.engineering but dislikes the conversation. The group is spammed constantly. The few nonspam posts Judy reads focus more on building rather than designing widgets. A few people discuss design but tend to be years behind in their techniques, and a few of the users are simply annoying people. These are a few very common Usenet conflicts. Among other less drastic solutions to these conflicts,[80] Judy can try to create a new space. For example, she can start a mailing list devoted to widget design; by focusing the conversation on design, this might cure the problem of off-topic posts.[81] She could also set up a World Wide Web page that allows post-and-respond communication similar to Usenet. This space would give her much less control over membership than a mailing list, but it would probably be less susceptible to spam attacks.[82]

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technology. There are other kinds of conflicts as well. The desire to make money off of the Internet can be classified as a conflict. So too can the boredom and intellectual curiosity of college students sometimes be a conflict. All of these things inspire or force Internet users to change the way the Internet works.

80. Some will be discussed *infra* Part III.D.

81. Furthermore, unlike a newsgroup, the subscription list will be centrally controlled by Judy, and she can decide to keep out users she does not like.

82. There is a sort of "network effect" for computer abuse such as spam. The more systems that any particular technique can attack, the more it is worth any individual attacker to invest the time to learn that technique. Spammers spam Usenet because they can easily automate spam to many newsgroups at once. A Usenet attack can reach 15,000 different newsgroups, so a little knowledge goes a long way. On the other hand, it would not be worth a spammer's time to attack individual web-based discussion groups that operate using proprietary or home-grown software. Not only must attackers find out the addresses of these discussion groups—they must also invest time to figure out what must be done to automate the process of message posting to each.

For example, one popular strategy for computer abuse is to create a virus that will search a victim's personal hard drive for personal information. *See, e.g.*, Nick Wingfield, *Intuit Warns Against ActiveX*, CNET NEWS.COM (Feb. 17, 1997) <http://www.news.com/News/Item/0,4,8015,00.html> (describing an ActiveX virus written by a German hacker group). Popular targets for such attacks are files that store a user's financial records. Because of network effects, more of these viruses probably attack files that work with Intuit's Quicken than files that work with Microsoft Money. More people use Quicken, *see* Intuit Inc., *Research Released by Intuit Discredits Microsoft Claim: Data Proves Money 98 Failing to Attract Quicken Users* (last modified Feb. 11, 1998) <http://www.intuit.com/corporate/press_releases/021198.html> (citing statistics released by Intuit supposedly demonstrating Quicken's market dominance), and a hacker can maximize the destructive effects of his efforts by attacking this file format.

The third key to understanding space building is that spaces not only need to be created but also have to be accepted. New spaces by definition are different from their predecessor spaces. The difference may be dissimilar technology: World Wide Web discussion pages work very differently from Usenet newsgroups. The user interface and experience may differ: Newsgroups are read through a newsreader, while mailing lists are read through electronic mail. Cost is another key difference. AOL charges a monthly fee to access its message boards. Every user's experience will be different, and each will value the new space more or less than they did the old space.

What emerges is a marketplace in spaces. This is a marketplace for membership, not for money. After a space is created, users must agree to these contracts and download, use, or buy these new technologies. Except when the new technology or agreement is forced on users,[83] the success of a new space depends on whether users like and use it. Every user has a finite amount of time to devote to online spaces.[84] A newly created, popular space may siphon users away from another preexisting space.

We can now begin to see why space creation is so rare. First, only a small percentage of Internet users can create spaces. The process requires the technical ability to create new communication options and legal relationships. Second, spaces take a long time to create. Legal solutions, such as contracts, involve negotiation, research, and, by definition, more than one party. Technological solutions can take even more time—software development, for example, is a notoriously slow process.[85] Finally, spaces not only need to be created but also have to be accepted; while space building is limited to a small technocracy of programmers, space survival depends on democratic acceptance by many everyday users.

Usenet has served as an arena for many conflicts.[86] Some of these were resolved through the creation of new spaces. Users who were aggrieved by the conflict could join the new space and stop using Usenet. New spaces sometimes would not suffer from the old conflict but were saddled with

83. For example, an employer or university can mandate that its users must use certain Internet applications. Even then, unhappy users can pay outside service providers for the right to use different technology. This is one example of a "marketplace of solutions" available to prospective Internet users.

84. Esther Dyson asks, "Can a single person in fact be a member of twenty different communities, with each getting his attention fifteen minutes a day (for a total of five hours online)?" DYSON, *supra* note 4, at 32.

85. This is especially true with the Internet, considering that a lot of Internet technology is developed by groups of researchers all of whom have other projects and are often inspired by curiosity or a sense of competition or community, rather than a drive for profits.

86. *See, e.g.*, *supra* note 5.

different conflicts; some of these new spaces were created and introduced but never attracted enough users to survive.

One example of a Usenet conflict that led to space creation is the problem of message archival. News servers have a finite amount of storage capacity for Usenet messages. Older messages are "expired" from a server to make room for newer messages. Expired messages can no longer be retrieved by a newsreader. As a result, Usenet is a memory-less space; old conversations are irretrievable after they expire.[87] In response to this conflict, newsgroup subscribers began to save all of the messages posted to certain newsgroups. They would publish these messages in archives on the web and provide the ability to search for old posts.[88] Each individual archive was a new space, albeit a space tied closely to Usenet. Users could only use these archives to read and search old messages, not to post new messages; to post, they had go directly through Usenet.

Individually maintained archives suffer from various flaws: Because they are maintained by different volunteers, they are idiosyncratic and lack a uniform user interface. They are kept up to date only at the whim of their creators, and they are hard to find, as they are dispersed throughout the world at different web addresses. In response to these conflicts, several different parties tried to archive all of Usenet and to provide a single, consistent user interface.[89] Perhaps the most useful of these is Deja.com.[90] Deja.com provides a single interface to an archive of more than 300 million Usenet posts dating back to March 1995.[91]

87. *See supra* note 29.

88. *See* Network Engineered Solutions, *A List of Archives of Newsgroup Traffic* (visited July 2, 1999) <http://starbase.neosoft.com/~claird/news.lists/rootnewsgroup_archives.html> (compiling links to newsgroup archive web pages).

89. In addition to full-Usenet archives, users have tried to resolve these conflicts in other ways. Software designers have written programs that enable users to automate newsgroup archival in a consistent manner. *See, e.g.*, Benjamin Franz, *Usenet-Web 1.0*, (visited July 2, 1999) <http://www.nihongo.org/snowhare/utilities/usenet-web/>; Gerald Oskoboiny, *The Hypertext Usenet Reader & Linker* (last modified June 3, 1999) <http://impressive.net/software/hurl/>.

90. *Deja.com*, *supra* note 29. At least three other web sites provide searchable Usenet archives. *See Excite* (visited July 2, 1999) <http://www.excite.com/> (the Excite home page); *Altavista* (visited July 2, 1999) <http://www.altavista.com/> (the Altavista home page); and *Infoseek* (visited July 2, 1999) <http://infoseek.go.com/> (the Infoseek home page).

91. *See* Deja.com, *Frequently Asked Questions* (visited July 2, 1999) <http://www.deja.com/help/faq.shtml>.

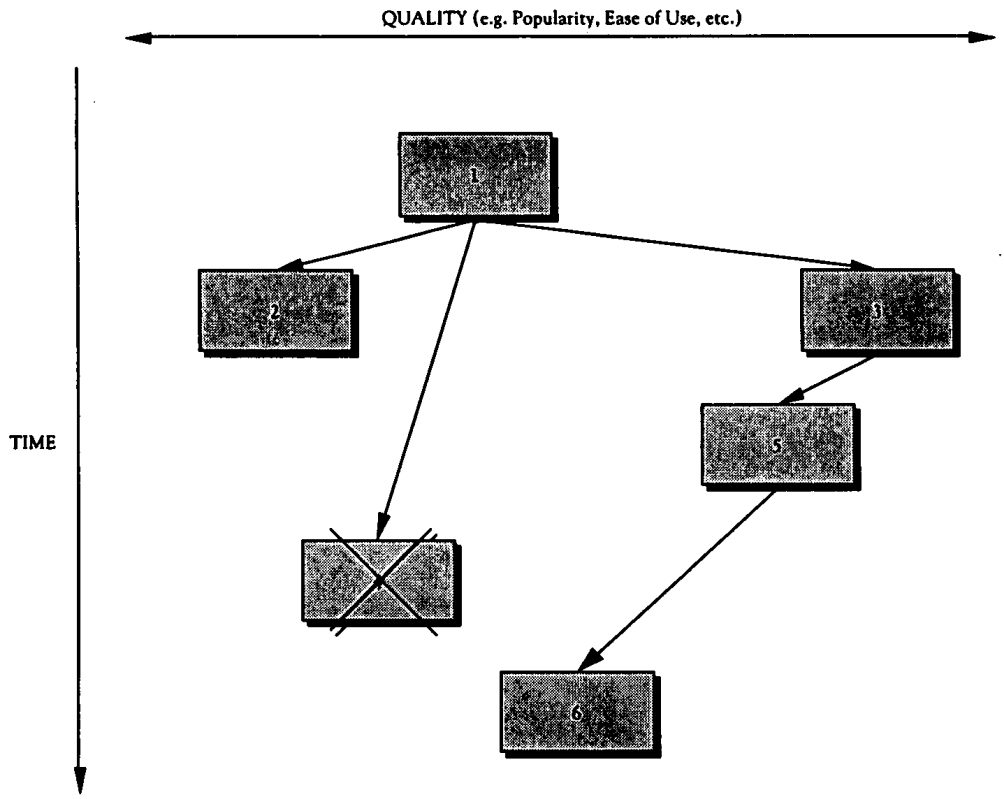

Figure 1

4. Diagramming Space Creation

It might help to represent the process by which spaces are created diagrammatically. In Figure 1, each box represents a separate space. The vertical axis of the diagram represents time moving forward down the diagram. The horizontal axis relates spaces to one another qualitatively. It is meant to represent any single quality that can be used to compare spaces, for example, how much control over the posts of others a space allows. The left end of the axis might represent a decentralized space like Usenet in which any user can silence another, while the right end might represent a mailing list that gives users no control over what messages can be unsent.

Other qualities could also be mapped on the horizontal axis.[92] The important thing about the horizontal axis is that it lets us compare spaces in terms of their similarity to one another. Two spaces that are close to one another horizontally are similar in the quality graphed, while two spaces

92. Some other examples are ease of use, the ability of the space to handle nontextual communication, and the time delay between the posting of a message and its propagation to the rest of the world.

that are far apart are unlike one another.[93] For the purpose of the examples to follow, assume that the horizontal access represents each space's "circulation" (i.e., number of readers). The left part of the graph includes small communities, perhaps specialized mailing lists. Moving right, we might find mailing lists with broader appeal and longer membership lists, while on the right side of the graph are well-read, worldwide forums such as Usenet.

An arrow between spaces shows that one space generated, in effect, the other: If space A was created in response to a conflict in space B, an arrow will move from B to A. Returning to our previous example involving Judy, the widget designer, assume the box labeled "1" in Figure 1 is Usenet and box 2 in the diagram represents the widget designers' mailing list. Box 3 is a World Wide Web discussion page that someone else created. The arrow moving from box 1 to box 2 tells us a few things. First, the mailing list was created in response to some conflict in Usenet that Judy wanted to resolve. Second, the mailing list was created around the same time the web page was created and before spaces 4, 5, and 6 were created. Third, the mailing list has fewer readers than Usenet.[94]

Box 4 represents another space that was created to solve a conflict in Usenet; it is closer in size to Usenet than the mailing list is.[95] As indicated by the cross through this box, for some reason the space did not survive.[96]

5. Using the Diagram to Analyze the Choices Made

Figure 1 is useful because it answers questions that lawmakers should ask about the choices that Internet users make. If Congress is motivated by

93. Sometimes these diagrams will be used in this Comment without defining what quality is mapped on the horizontal axis. In these cases, the axis will describe more generally which spaces are similar and which spaces are different.

94. For this example, the horizontal axis could have signified other metrics such as the size and complexity of the software a new user needs to download to use the service. The mailing list is to the left on this axis because most electronic mail software is small and easy to use for new users. Usenet is further to the right because while news-reader software is readily available, it is often slightly more complex than electronic mail software. The World Wide Web solution is off to the right end because web-browser software is usually much more complex and larger than mail and newsreaders.

95. Along the quality axis, space 4 is more Usenet-like than the mailing list is, hence the movement along the axis back to the right. Perhaps a user tried to create a new Usenet, consisting of a network of news servers that traded messages with one another using the Usenet protocol, but not with the original Usenet. This is not a purely hypothetical example. One group has proposed a new Usenet, Usenet II, to replace the current infrastructure. This group, which will use almost the same technology as the current Usenet, will rely on a codified set of rules, as well as banishment for violators, to reduce the current problems of abuse. *See Usenet II: What is Usenet II?* (last modified Nov. 18, 1998) <http://www.usenet2.org>.

96. Most likely, it could not attract enough users to survive.

the conflict and lawsuit between Nathen and Anna to regulate third-party cancellations, its members should ask four questions that the diagram can be used to answer. For purposes of this discussion, assume that box one represents Usenet. First, how many other choices did the users have? In our simplified model, boxes 2, 3, 5, and 6 were alternatives. Box 4 was not, because it no longer existed.

Second, what were those alternatives like? Were the other choices attractive alternatives? Assuming still that the horizontal axis tracks circulation, we may not fault Nathen for choosing Usenet over box 2, perhaps a tiny dial-in bulletin board system with twenty-five users. But we may wonder why he did not instead choose box 3, 5, or 6, each of which had more users. We can reevaluate Nathen's choices several times, with the horizontal axis representing a new quality each time.[97]

Third, when were the alternatives created? The answer to this question can give lawmakers a sense of whether they are dealing with a dynamic part of the Internet. Users of a dynamic Internet space—one that is spawning new alternatives frequently—may create new spaces to resolve conflicts without governmental assistance. Space builders tend to focus their efforts on new spaces that are popular or cutting edge. People are much more likely to write a new web page these days than a new type of text-based gopher server.[98] Lawmakers should defer most when faced with frequently changing spaces, to give space builders the first crack at any problems that develop; government is less likely to interfere with space builders when they regulate older, more static spaces that will likely not spawn new spaces. In Figure 1, the cluster of spaces 3, 5, and 6 show recent space-building activity; there are likely to be more new spaces like these in the near future. In contrast, the branch containing space 2 is more static; conflicts in this branch will not likely lead to new spaces.

Finally, lawmakers should look at failed spaces such as box 4. By looking at what has been tried and has failed, lawmakers can better craft laws to avoid the mistakes of the past.

6. Empirical Observations About Space Creation, and Unanswered Questions

From the preceding analysis, we are left with two empirical observations: (1) The presence of many recently created spaces that are similar to

97. Of course, every time a new quality is mapped, the boxes will shift positions in the diagram.

98. Gopher was an Internet information service that predated the World Wide Web. It was a purely textual service that had a distributed, hierarchical format that might be regarded as the precursor to the web's hyperlinks.

the space from which the dispute arose suggests a rapidly changing part of the Internet into which a lawmaker should avoid intruding. (2) The absence of many recently created alternatives may suggest that a space is old and neglected, or it may suggest that it is new and has not yet had the chance to generate alternatives.

But by focusing solely on choices and how spaces are created, we are left with many questions: Does the lack of recent new spaces mean that the space is old, stagnant, and ready to be regulated, or, conversely, is it so new that space builders have not had time to create new spaces? Looking at choice alone tells a lawmaker *when* to create a law, but reveals nothing about *what* an Internet regulation should do. Will some minor change in a space be more effective than a new law? Some of these questions are answered by studying the way spaces evolve.

D. Space Evolution

Whereas Part III.C focused on the "birth" of Internet spaces, this part focuses on the growth of those same spaces. The Internet is a living laboratory of rule creation and evolution. Every Internet space has its own rules: behavioral protocols, standards of operation, and membership requirements, to name a few. Some of these rules exist when the space is first created, but most of them arise gradually and evolve over time.

1. Customs and Norms in the Internet and in the Real World

Why should lawmakers care about norms? Some answers have been provided by legal scholars who have begun to turn their collective eyes to the study of norms.[99] As Richard McAdams has said, "one cannot correctly assess the effect of formal, state-enforced rules without understanding the informal rules also at work."[100] State-enforced rules may destroy norms, or they may create or bolster norms. Lawmakers should recognize this power and try to improve their understanding of informal rules. Perhaps legislators should think of the study of norms as a critical fact-finding step that precedes any regulation of a norm-heavy space. Norms often reflect the expressed will of the community, and by respecting norms, lawmakers

99. *See, e.g.*, Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338, 343–54 (1997) (surveying the literature that has been written regarding law and norms, a "burgeoning new subfield of legal studies"). Richard McAdams's discussion unwittingly anticipates this Comment's focus on the evolution of norms in Usenet. *See id.* at 392 n.183 ("These large-scale social changes are matched by equally significant shifts within smaller groups . . . not to mention entirely new collections such as internet newsgroups.").

100. *Id.* at 346.

increase the legitimacy with which their laws will be regarded. As with a study of choice, an investigation of norms plays an educative role: Legislatures can better understand the structure and society of complex, norm-conscious spaces in this way. Online norm development and problem solving can differ fundamentally from those activities in the real world,[101] and it is important that lawmakers understand these differences.

There are at least three ways in which Internet custom making differs from other examples of norm development. First, the Internet has few clear inherited norms. The Internet is a constructed space of recent vintage. Its few historical spaces have roots in academia, science, or an anarchical hacker culture. People from separate cultures come to the Internet and bridge their differences by inventing a new common culture.[102] The Internet defies old understandings about personal space, travel, communication, and borders. The result is a new libertarian society that values freedom, decentralization, and the avoidance of prior customs and legal systems.[103]

The second way in which Internet rule making is different from rule making in the outside world is that the Internet historically has been governed by few state-enforced regulations. Because Internet users are citizens of different sovereignties, difficult questions of jurisdiction and choice of law hinder any attempt to inject real-world law into this space. Ideas such as communication, location, and movement are so different that analogs from a real-world set of substantive laws do not often make sense. This lack of prior regulation has two effects: First, users are more likely to "start from scratch" when developing Internet customs. Second, governments have difficulty influencing the Internet custom-making process. Because of the long history of government noninterference, governments have trouble interfering, and Internet users are free to shape customs based only on their own needs.

One final difference distinguishes Internet problem solving from problem solving in the real world: the role of technology. In the real world, technology plays an important but limited role in defining conflicts and making tools available to cure conflicts. In contrast, in the Internet, technology is intertwined with the society. Technology defines the rules of communication, and it governs all relationships between parties. You cannot say or do anything on the Internet unless the software—the code—says you can. Changing the technology changes the very nature of the world, and

101. Other scholars have focused on the evolution of norms online. *See, e.g.*, Siegal, *supra* note 5.

102. Actually, many separate cultures have been invented.

103. *See, e.g.*, Barlow, *supra* note 1.

the relationships within the world. Power is held by people who make new technology.

Thus lawmakers must understand Internet custom making before crafting laws. Analogs to current laws are incomplete. Enforcement mechanisms that work in the real world are nonexistent or of limited efficacy in the Internet. In sum, this world is very different and very difficult to understand.

2. Space Development

In Part III.C we saw that Internet spaces are created in response to conflicts that arise in other spaces.[104] Space creation is a rare response to a conflict; users more commonly deal with conflicts through simpler solutions. Usually users try to change the space just enough to resolve the conflict, end the abuse, or solve the problem without destroying the utility of the space.[105] If the solution succeeds, other people will accept it, and the subtle change will slightly redefine the space. If the solution does not succeed, other people will ignore it, if they can. If they cannot ignore it, the change will become a new conflict, and the process will begin again. When conflicts cannot be ignored or cured through the process just described, users will vote with their virtual feet and leave the space for another space, if one exists.[106]

One conceptual difficulty must be addressed at this point. Recall the Russian-doll feature of space.[107] Spaces are options at different levels of specificity. Usenet is a space on one level, while every individual Usenet newsgroup is a space when viewed at a more specific level. The problem is that space development at a higher, less specific level might look like space creation when viewed at a more specific level. For example, new Usenet newsgroups can be

104. *See supra* notes 79–82 and accompanying text.

105. Some solutions do not change the space at all—some responses are unilateral and solve problems for individual users without helping other users who may be troubled by the same conflict. The kill file is an example of that. *See supra* notes 75–76 and accompanying text. A user who decides to stop using the space is another example. If a user is unhappy with Usenet newsgroups that are swamped with off-topic commercial messages, the easiest thing he can do is stop reading Usenet news all together. This solves the problem of off-topic spam for him but does not help any other user.

106. *See* DYSON, *supra* note 4, at 50.

> The answers to these questions are norms, not laws. Usually a community can handle them for itself. People chide one another; others complain; leaders calm things down. Over time, people in a group learn how to live together—or they go off in search of more compatible (for them) communities.

Id.

107. *See supra* Part III.C.3.

created.[108] From the vantage point taken in this Comment—looking at Usenet as a space compared to other spaces such as IRC—the creation of another newsgroup is an act of space development. Usenet becomes a richer space because it hosts more topics of conversation. At the same time, to an observer focusing on each separate newsgroup as a distinct space, this is a clear example of space creation.

Because of this difficulty, it may seem odd to draw sharp distinctions between space creation and space development. Nevertheless, within a single level, the two processes are distinct. By fixing the analysis at the level of Usenet as a whole, space creation and space development are clearly different events. Still, lawmakers have to become skilled at moving up and down these levels of specificity. After drafting a Usenet-specific law, it makes sense to question whether the law should just regulate certain newsgroups or hierarchies. At every level of space specificity, space creation and space development have to be reexamined.

Usenet has developed throughout its existence. Usenet abuse constantly threatens the nature and utility of Usenet. Users and administrators have responded with small tweaks to the software or to the rules of Usenet. This process of development has slowly redefined what Usenet is.[109]

Early Usenet users realized that the customs of communication used in face-to-face, telephonic, and even electronic mail conversations did not work in Usenet. Because the audience was larger and because the medium was textual, people chose to express themselves in different ways.[110] Some of these different ways were thought reasonable and embraced by many. Others were unnecessary or awkward and were abandoned. The loose group of customs that survived became known as "netiquette." Netiquette changed Usenet. While technologically unchanged, it was socially a significantly different place once people started to agree to follow these rules.

One conflict that was addressed first through netiquette is the ongoing issue of quality control. Users struggle to insure that newsgroup conversations are useful, interesting and nonrepetitive. One threat to the quality of

108. *See, e.g.*, David Barr, *So You Want to Create an Alt Newsgroup* (visited July 3, 1999) <http://www.cis.ohio-state.edu/~barr/alt-creation-guide.html>.

109. By tracing Usenet problems and solutions, I do not suggest that this is the exact order in which events occurred. Rather, this is a simplified history that exemplifies how the Internet works to solve problems and make rules. For another exposition of this history, see Siegal, *supra* note 5, § II.D, at 198 ("[I]n the face of what long-time Usenet participants see as something of an invasion of barbarians, Usenet has moved from the *politesse* of assuming that everyone will obey good netiquette, to taking actions, even actions apparently antithetical to some of the underlying assumptions of Usenet, to protect itself.").

110. As a case in point, consider "smileys." *See, e.g.*, ELECTRONIC FRONTIER FOUNDATION, *The Unofficial Smiley Dictionary*, *in* EFF'S (EXTENDED) GUIDE TO THE INTERNET . . . (visited July 2, 1999) <http://www.eff.org/papers/eegtti/eeg_286.html>.

Usenet conversations are the posts of new users (or "newbies") who have never posted before. Newbies ask questions that have been asked before and are ignorant of the rules that have been established.

One solution to this problem is the creation by users of files that contain the answers to frequently asked questions (FAQs). Newbies that ask such questions are told (politely or otherwise) to read this file. FAQ files become important archives of institutional history, as well as attempts to codify informal norms. Another typical netiquette solution is to require detailed subject lines.[111] Most newsreaders index messages by subject line. If these subjects are descriptive, users can scan the index to separate the chaff from the wheat. Users that write vague subject lines are chastised by other members of the group. If simple warnings do not solve the problem, a newsgroup's membership might develop formal rules governing the content of subject lines. For example, when many different subtopics are discussed in one newsgroup, users often require that every post's subject line must reflect the subtopic discussed.[112] Other subject line rules are so useful that they have been adopted by many newsgroups. For example, newsgroups that discuss episodic subjects, such as television shows or computer games, often require the word "spoiler" in the subject line of a post that discloses information about a future episode. Similar keywords are often required for posts by users who seek to sell something ("FS," which is short for "for sale") or buy something ("WTB," for "want to buy"), and for messages that are off topic ("OT").

When these measures have failed, people have developed more powerful weapons, such as moderated newsgroups. When a user posts a message to a moderated newsgroup, the post is not immediately available to other readers but is instead sent by electronic mail to another user who serves as the moderator. The moderator evaluates the post according to a set of rules that have been established by the other readers and posts the message to the newsgroup only if it meets the group's criteria.[113] Note that under this

111. Every Usenet message contains a header called the "subject line" header. *See supra* note 23. It contains a brief description of the contents of the message.

112. Readers of rec.arts.tv.soaps, for example, can read just those posts discussing a particular soap opera by looking for a particular abbreviation at the beginning of the subject line. *See* Melissa Wanford, *Rec.arts.tv.soaps Posting Guidelines* (Margaret D. Gibbs ed.) (visited July 2, 1999) <http://www.cis.ohio-state.edu/text/faq/usenet/tv/soaps/abbrevs/faq.html>.

113. Newsgroup moderation is an interesting response. Moderation is not an example of technology that prohibits certain specific abuses, nor is it a tool with which abuse can be stopped or detected. Rather, moderation uses technology to change the relationship between parties. It allows a sort of social contract, backed by technology, in which users submit to the censoring role of the moderator. Some newsgroups, such as high-traffic newsgroups, are unmoderatable. Furthermore, some users may dislike agreeing to submit to third-party censorship. Thus moderated newsgroups exist side-by-side with unmoderated groups, and users can select one or the other or both.

Comment's definition of "space," moderated newsgroups are not new spaces, but rather represent a technological shift in the old space. Usenet changed from being a space without moderators to a space with at least some moderator oversight.

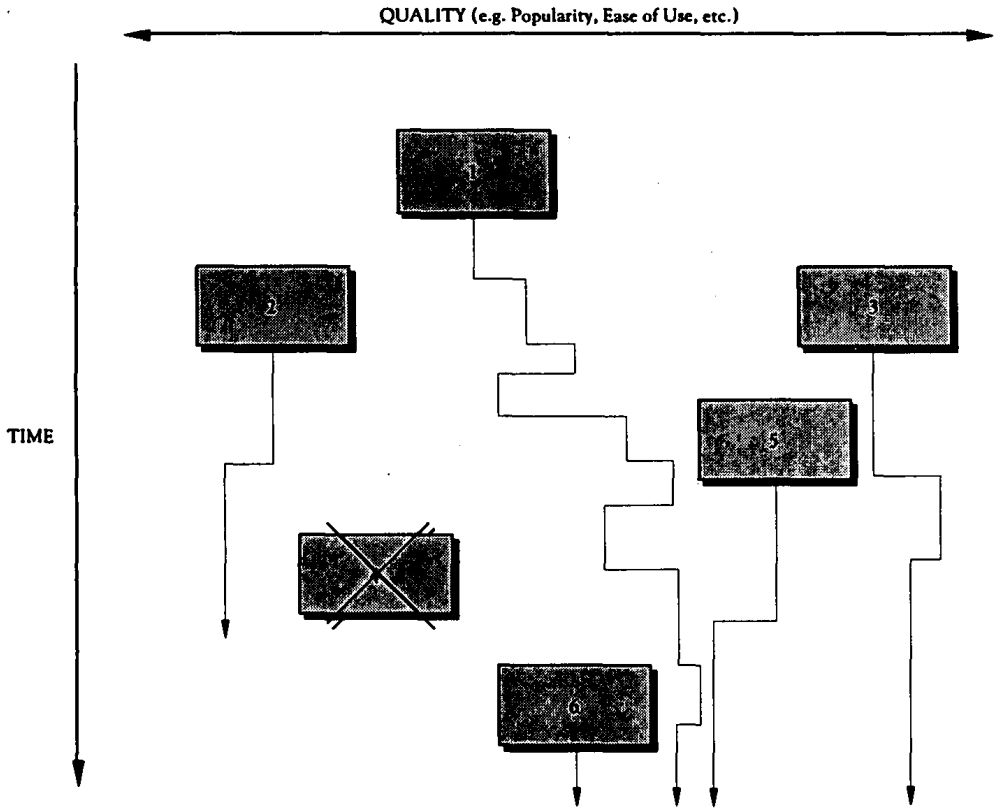

Figure 2

3. Diagramming Space Evolution

The development, or definition, of an Internet space can be diagrammed using the same axes as in Figure 1. In Figure 2, the vertical axis is still time, and the horizontal axis again describes a "quality" of the space. A line moving

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At least one newsgroup, comp.infosystems.www.authoring.cgi, has adopted a solution that is a cross between traditional moderation and files containing answers to frequently asked questions (FAQs). The method, called "self-moderation," consists of a computer program that maintains a list of every user who has ever posted to the newsgroup at least once. If a post is sent to the newsgroup from someone who is not in the list—i.e., a "newbie"—the user is sent a message that explains the ground rules of the group. The newbie's message will not be posted to the group until that user reads the welcome message and takes affirmative steps to submit the post. *See* Thomas Boutell, *Saving USENET and Then Some: A Call to Action* (visited July 2, 1999) <http://www.boutell.com/boutell/usenet.html>.

down from a space signifies the evolutionary problem-and-solution process described above. As long as new conflicts occur, and as long as people try different responses to resolve those conflicts, the line continues to grow. A line that has stopped progressing down the diagram, such as the line emanating from box 2, depicts a space that no longer has conflicts, or that still has conflicts that users have learned to live with and have given up trying to solve.

Shifts in a line represent solutions that change the nature of the space. For example, assume the horizontal axis represents the "ability to silence others" quality, increasing from left to right. If space 1 is Usenet, then the first sharp turn in the line to the left is a solution that made it harder to silence others, for example the advent of moderated newsgroups. Small movements in the line represent small shifts in the ability to silence. Large hops by the line represent significant redefinitions of the service. For example, the first time someone used a forged third-party cancel, a large hop in the line occurred; this event dramatically redefined Usenet as a place where messages could be deleted by anyone.

4. Using the Diagram to Analyze How Internet Spaces Evolve

A lawmaker trying to make sense of any part of the Internet should learn a lesson from the evolution of Usenet. Relationships and norms in Usenet change at a much faster rate than relationships and norms change in the real world, and any legislature that tries to regulate an Internet space should appreciate this phenomenon. The Usenet of tomorrow will not look like the Usenet of today.

Another very important empirical observation is that Usenet's norms and customs have become more developed and formalized through the nongovernmental problem-solving process. Netiquette began as a very loose and informal discussion about what behavior is proper in Usenet; today it is a coherent and largely codified[114] body of popularly agreed-upon norms. For

114. *See, e.g.*, Jerry Schwarz et al., *Answers to Frequently Asked Questions About Usenet* (Gene Spafford & Mark Moraes eds.) (last modified Jan. 16, 1998) <http://www.cis.ohio-state.edu/text/faq/usenet/usenet/faq/part1/faq.html>; Furr, *supra* note 20; Mark Horton, *Rules for Posting to Usenet* (Gene Spafford & Mark Moraes eds.) (last modified Jan. 16, 1998) <http://www.cis.ohio-state.edu/text/faq/usenet/usenet/posting-rules/part1/faq.html>; A. Jeff Offutt VI, *Hints on Writing Style for Usenet* (Gene Spafford & Mark Moraes eds.) (last modified Sept. 29, 1997) <http://www.cis.ohio-state.edu/text/faq/usenet/usenet/writing-style/part1/faq.html>; Aliza R. Panitz, *How to Find the Right Place to Post (FAQ)* (last modified Jan. 7, 1997) <http://www.cis.ohio-state.edu/text/faq/usenet/finding-groups/general/faq.html>; Chuq Von Rospach, *A Primer on How to Work with the Usenet Community* (Gene Spafford & Mark Moraes eds.) (last modified Sept. 23, 1996) <http://www.cis.ohio-state.edu/text/faq/usenet/usenet/primer/part1/faq.html>; Salzenberg, *supra* note 12; Templeton, *supra* note 20; Edward Vielmetti, *What is Usenet?*

example, a legislator who tried to write a Usenet regulation one year ago would have found a more informal, less codified body of customs and norms. A lawmaker who writes a Usenet law one year from now will find the norms and customs to be more formal and structured.

Is this observation about Usenet's evolution generalizable to all informal norm evolution in Internet spaces? Does a prolonged period of informal rule making inevitably lead to rationality and coherence? It is reasonable to expect that most norms become, when viewed over long stretches of time, more rational and coherent,[115] if not just and fair. This rule has common-sense appeal and a common-sense explanation: Each new norm or rule builds on the rule development that has come before. We learn from our mistakes. Like a market that replaces inefficiencies with efficiencies, norm development replaces bad rules with better rules.[116] Of course, in order to learn from what has come before, a space must have institutional memory. Most Internet spaces do maintain either a written history (often in the form of FAQ files) or preserve institutional history through the story-telling of elder members. In addition to this "reverse-entropic" process of rule evolution, informal rules are often rational and coherent because they are usually the product of focused deliberation.

Figure 2 is a useful model to answer questions a lawmaker should ask. As the line emanating from a space grows, customs and norms evolve; the more time the line has to grow, the more coherent and rational the body of norms will be. Lines with many sharp turns represent spaces that keep getting redefined through the problem and solution process. A lawmaker should be hesitant to act if a naturally developing change might solve the conflict. Lines that have not grown or shifted horizontal positions in a while may represent more stable spaces. These are spaces a lawmaker can more ably regulate.

A *Second Opinion* (last modified Apr. 23, 1999) <http://www.cis.ohio-state.edu/text/faq/usenet/usenet/what-is/part2/faq.html>.

115. It is very important to note that I am presuming that a "more formal" rule is necessarily a "better" rule. I recognize that the two are not necessarily the same, and that this part of my analysis may therefore be criticized: Just because the norms are more developed, that does not mean they are more just, or that they deserve the attention of lawmakers. My response is that lawmakers cannot even begin to understand these spaces unless they can objectively assess the norms that spontaneously develop.

116. The same critique that is lodged against efficient-market theories can apply to the theory that I present here. Informal rule development may fail to protect the interests of minorities. This all turns on the definition of "better" rules. Of course, because disgruntled minorities can easily switch to other spaces, the risk to minority interests is smaller than it might otherwise be.

5. Empirical Observations About Space Development, and Unanswered Questions

In summary, lawmakers should study space development because this can reveal several truths: (1) Customs and norms become more coherent and rational over time. (2) Spaces that have undergone recent drastic modifications are probably poor candidates for legal regulation because such spaces are likelier to be harmed by regulation. (3) A space that has seen little or no recent development or modification is less likely to be harmed by regulation.

As with the analysis in Part III.C, this raises new questions. Lawmakers should wait until a space is stable, but when is that? How long is long enough to let customs develop? The solution may be to analyze the lessons of space creation and space evolution simultaneously; the solution is to think two-dimensionally.

E. Building and Evolution Combined—The Lifelines of Spaces

Lawmakers thus have two separate yet intertwined metrics for assessing the damage that will be done when they regulate Internet spaces like Usenet. Legislators should weigh whether the users of the space could meaningfully choose alternatives, and they should study how the space has evolved.

Both analyses raise similar questions. What is a "recently" created alternative space? When has a space's development slowed "enough"? How can one tell whether a lack of new alternatives is a sign of "stagnation" or "newness"? In the face of such difficult questions, it is unsurprising that scholars have suggested cautious deference.

The way out of the quagmire is to make a key observation that links the two metrics together: Space development almost always takes place before new space creation. Space development is an ongoing and continuous process that begins right after a space is created; space creation is a rare occurrence that will not occur until some time after a new space is created. This observation makes sense as a matter of logic. When faced with a conflict, rule making requires less action—and thus can be prompted by less dissatisfaction—and less time than space creation. Every Internet user can play a role in the former, while the latter is left to the inner sanctum of Internet institution builders.

The observation can be illustrated historically. Immediately after Usenet was created, conflicts such as commercial posts arose. Individual users first tried to solve the problem through unilateral space-developing solutions such as mail-bombs and third-party cancellation. Meanwhile, rules of netiquette evolved through debate and trial and error. Only after Usenet had

evolved a bit did new spaces begin to appear. It took time for programmers to program and organizers to organize alternative spaces.

With this observation—that space development usually occurs before space creation—we can answer the difficult questions of Parts III.C and III.D by combining the two. The creation of a new space can be seen as a timing signpost that might answer questions raised about space development. Likewise, a space's maturity can provide solutions to tough "creation of alternatives" puzzles. Here then, are two corollaries to the key observation: If a new space has been created, that is a signpost that at least some custom and rule development has occurred. Likewise, we can tell whether a lack of alternatives means stagnation or newness by looking at how developed the space's customs and rules are. Just as looking at the size of the rings in the trunk of a tree can reveal the amount of rain in a given year, each half of this analysis provides hints of chronology for the lawmaker.

Lawmakers now have two reasons to look at space creation and space development. Looking at each metric individually allows for better predictions of the harm that regulation may cause. Second, looking at the two measures simultaneously provides a more complete picture.

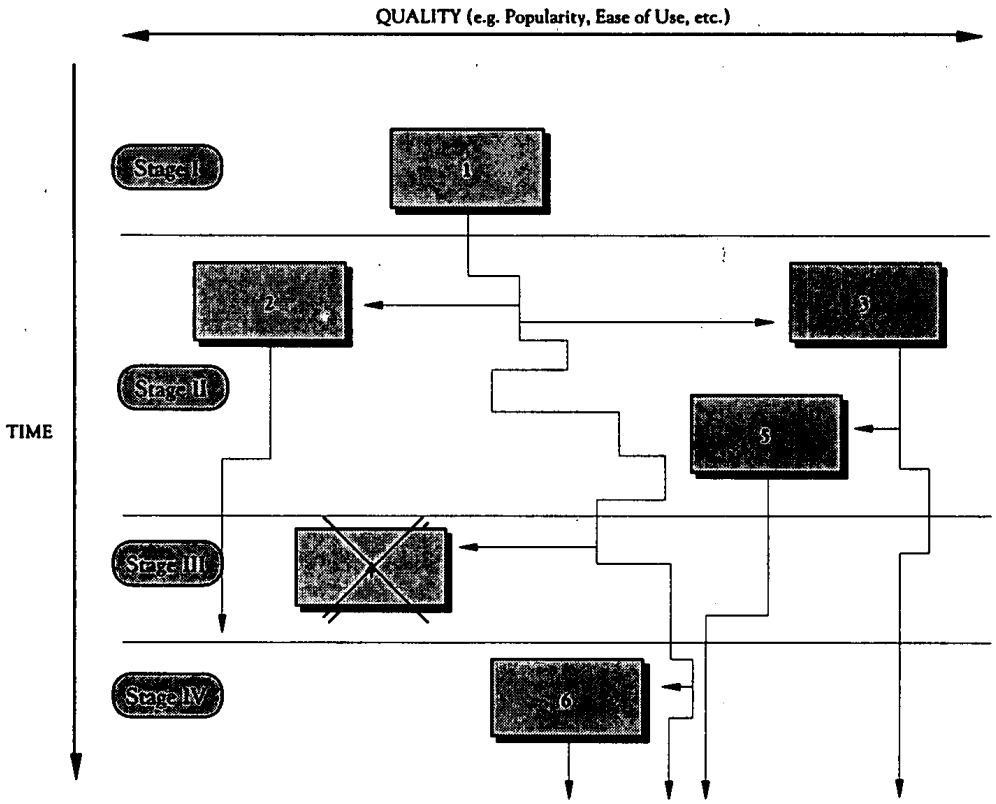

Figure 3

Let us turn one last time to the diagrams. Figure 3 is a combination of Figures 1 and 2. It uses the arrows of Figure 1 to show the creation of spaces and it uses the winding lines of Figure 2 to track the evolution of each particular space. These spaces grow in a tree-like pattern.

The final step in the analysis is to divide the tree into four stages. These stages are defined on the basis of the amount of space development and space creation that occurs, and may give insight into the harm that regulation can do. Stage I spaces—in the diagram, the top fourth of the tree—are young spaces. Stage I is defined as the time before any new spaces have been created. When the first new space is created, Stage II begins. Stage II represents a time of increased activity and transition for space 1. New spaces are spun off and more significant changes to the original space occur.

The line between Stages II and III is more difficult to define. New spaces emerge in both stages, but Stage III is a time of maturity. The space 1 line shifts less as customs and rules begin to mature. New spaces are spun off, but not as frequently as in Stage II. There is still conflict in this period, but these are probably conflicts that people have learned to tolerate. Stage IV begins when space creation has slowed and space development is minimized. Stage IV marks stability and possibly decline. The space is more venerable, and users no longer try to make it evolve. Customs are clear, and when they are broken, there are some mechanisms for punishment. New spaces are rarely spun off in Stage IV, as programmers have begun to focus on something new.

Each space evolves differently and each space progresses through the stages at a different rate. For example, in spaces where users have no control, the first stage may be very short. A good example of this is a web page. A single, central entity controls a web page. Individual users who find conflicts with a web page cannot change it.[117] If a user has a conflict, rather than try to change the web page, she will probably seek out another page—another space. Thus, Stage II begins almost immediately and the tree looks "bushier."

Usenet presents the opposite situation. Because of the distributed design of Usenet, users and administrators have a lot of control over how Usenet works, and many users can influence and change Usenet. When Usenet was young, there was no pressure to create alternatives to it, because users felt that they could cure conflicts by modifying Usenet. Because of

117. In fact, the only influence they probably have is by sending feedback to the "webmaster" via electronic mail. Of course, any administrator who wants his page to succeed will heed this feedback.

this control, very few attempts have been made to offer alternatives to Usenet, and Usenet has enjoyed a long, slowly meandering Stage I. If diagramed, Usenet's tree would have a long, branchless trunk.[118]

This analysis suggests two additional rules of thumb for lawmakers. First, regulation will very likely harm spaces in Stage I. The users in these spaces have not had enough time to try to develop their own customs and rules; a lawmaker cannot discover what the other users of the space think about conflicts because there will not be a clear consensus. Furthermore, new spaces and alternatives will probably someday be available, thus resolving some conflicts.

The second rule is that laws will often not harm spaces in Stage IV. These spaces have better-developed customs; people using these spaces understand their relationships with one another. New spaces and changes in the current space are not likely to occur.

As for spaces in Stages II and III, the advice is somewhere in the middle. Stage III spaces have more developed rules than Stage II spaces. Meaningful alternatives will likely exist for both stages. Some Stage II spaces may be injured by governmental regulation, while others will not. There are definitely Stage II and III spaces for which lawmaking could be catastrophic.

What about Usenet? To determine where it fits in the diagram, we need briefly to retell part of the story of Usenet's development. Rather than focus on space development or space creation alone, we should look at both acts simultaneously.

Let us return to the problem of commercial posts and third-party cancellation. Early in Usenet's development, people agreed it was proper netiquette not to post commercial posts. Another rule from netiquette is the prohibition on spam.

A few rogue users flouted these rules of netiquette, such as the ban on commercial posts. In response, other users tried first to educate these people either with polite reminders[119] or through angry, often personal, attacks known as "flames." If this failed, angry users turned to more drastic unilateral

118. Other factors can change the topology of the tree: If programmers believe that riches or fame will come to the first person who can resolve a conflict, new spaces may sprout off immediately; if space creation is easy and accessible to all users, not just to programmers, Stage II would also start earlier; if a space is created for a narrow purpose and has a narrowly defined population, there may be few conflicts, and Stage IV could start quickly.

119. A common method for educating new users was the creation of FAQs. *See* Russ Hersch, *FAQs about FAQs* § 1.3 (last modified Nov. 17, 1997) <http://www.netannounce.org/news.announce.newusers/archive/faqs/about-faqs>. Many FAQs contain so much valuable information that they are considered required reading for new users. *See id.* at § 1.4.

law-enforcing acts such as "mail-bombs,"[120] the creation of new newsgroups, and boycotts of products advertised in commercial posts. When unilateral solutions did not succeed, users worked together to redefine their spaces, for example, by establishing moderated newsgroups.[121]

Another solution to the problem of Usenet abuse was the third-party cancel. Unfortunately cancellation, while effective, was easily abused. Third-party cancelers could cancel messages they merely disagreed with, or messages written by someone they did not like. A Usenet solution became a Usenet problem.

In response to this new conflict, the process began to repeat itself. First came deliberations about when it was appropriate to execute a third-party cancel.[122] This matured into a well-defined set of customs. These rules were sometimes broken, which led again to responses like mail-bombs. It also inspired interesting technological innovations, with colorful names like Lazarus[123] and Dave the Resurrector.[124]

Most recently, two significant new weapons have been employed in the war between spammers and cancelers. First, Usenet's antispam cancelers have begun to attack entire ISP's for supposedly failing to prevent the propagation of spam. Cancelers alert ISP administrators when a large volume of spam originates from the ISP's Internet nodes. If these alerts are ignored, cancelers threaten the Usenet Death Penalty (UDP). A dramatic remedy, a UDP consists of "cancelbots"[125] that are trained to cancel all Usenet posts originating from the targeted ISP, spam or not. Any message posted by a user of that ISP during a UDP will never distribute through

120. A "mail-bomb" occurs when angered users, working independently or in concert, send electronic complaint mail to the system administrator, the abusive user, or both. The ostensible purpose is to alert the system administrator, who has the most direct control over the user's access to Usenet. In turn, the administrator can talk to the user and try to come to some contractual understanding with the user, or may expel the user. The real purpose is often to send so much electronic mail that it cripples the system administrator's network and storage space, leaving the system administrator no choice but to take action against the user.

121. *See supra* note 113 and accompanying text.

122. Another example of rule making through deliberation comes from Esther Dyson. She describes a discussion among the members of "the Online Europe list" over whether comments sent to the list could be used elsewhere without permission. *See* DYSON, *supra* note 4, at 38–42.

123. When messages began to be canceled anonymously from the alt.religion.scientology newsgroup, a user wrote a program called "Lazarus" that posted an announcement any time a control message regarding alt.religion.scientology appeared. Because cancel messages are a type of control message, "[t]he basic effect of this [was] that all cancels [were] *very* visible." *See* Skirvin, *supra* note 33, § 8(A).

124. Dave the Resurrector is one of a class of computer programs called "resurrector bots." *See supra* note 11. These programs respond to cancel messages by reporting and reposting the canceled message. Dave the Resurrector reposts any message removed from the news.admin.net-abuse.* hierarchy. *See* Skirvin, *supra* note 33, at app. A(1).

125. *See supra* note 46.

Usenet—that ISP will be removed from the distributed database. The UDP has been threatened rarely[126] and in every case, the threatened ISP was spared the penalty by taking active steps to combat spam.[127]

The second technique is a new technology called NoCeM[128] (pronounced "no see um"). It deals with spam without modifying the messages on the server. Rather than canceling a message, a Usenet despammer issues a warning about a particular post. If a user configures his newsreader to trust warnings from that despammer, the user will never see the message; it will be as if the message had never been sent. NoCeM masks messages for individual users but does not delete messages from news servers. Although this seems to be a superior solution, it could still be abused.[129] Clearly, many Usenet battles are still being actively waged.

In addition to these attempts to cure Usenet, some speakers and listeners have abandoned Usenet for other spaces. For example, a few have designed what they call "Usenet II."[130] This is a network of news servers that uses the same technologies as the original Usenet. What is different is that Usenet II administrators and users agree to follow a set of behavioral

126. At least three ISPs have had UDPs threatened against them. A UDP was threatened against PSINet on October 28, 1998. *See* Cabal Network Security, *PSINet UDP HQ* (visited July 2, 1999) <http://www.cabal.net/psi/oldindex.html>. Other UDPs were threatened against Netcom on February 14, 1998, *see* Cabal Network Security, *The Historical CNS Netcom Usenet Death Penalty Site* (visited July 2, 1999) <http://www.sputum.com/cns/netcomudp1.html>, and against UUNet on August 1, 1997, *see* SPUTUM, *News Flash! The UDP Against UUNet Was Cancelled on 6 August 97* (visited July 2, 1999) <http://www.sputum.com/suitsite/uunetudp.html>.

127. PSINet, Netcom, and UUNet capitulated to some of the cancelers' demands in time to avert the penalty. *See* Janet Kornblum, *Death Penalty Lifted Against UUNet*, CNET NEWS.COM (Aug. 6, 1997) <http://www.news.com/News/Item/0,4,13122,00.html>; *Netcom Spared Death Penalty*, WIRED NEWS (Feb. 24, 1998) <http://www.wired.com/news/news/technology/story/10506.html>; Cabal Network Security, *PSINet UDP HQ* (visited July 3, 1999) <http://www.cabal.net/psi>.

128. NoCeM was written by Cancelmoose, an anonymous Usenet citizen who was one of the first cancelbot writers. *See supra* note 46. NoCeM defines a sort of "conditional cancel message" by defining a new type of message known as "NoCeM notices." Any user can issue a NoCeM notice when they see a Usenet post that they do not think should have been posted. Usenet readers can use NoCeM-capable news clients to always read or to never read messages that have associated NoCeM notices. The user can specify that all NoCeM messages of a certain type, or messages that are issued by a specific user, should be selectively honored or ignored. In this way "the weight the notice carries will be no greater than the poster's net.reputation. If people agree with the issuer's criteria AND also feel that this person is a good judge of that standard then they will accept his/her notices." *See* Cancelmoose, *The NoCeM FAQ*. v0.93 (visited July 2, 1999) <http://www.cm.org/faq.html>. System administrators can also take action based on NoCeM messages, such as canceling (removing from the news spool) messages in response to NoCeM notices. *See id.*

129. For example, if a particular despammer develops a widespread reputation as a reliable source, and if many NoCeM users trust his advice, he can prevent any message he wants from being seen by many Usenet readers. Of course, if this power is abused, the despammer's reputation will likely wane.

130. *See supra* note 95.

rules and agree to be subject to the power of hierarchical officers. Usenet II's rules ban, among other things, cross-posts to more than three newsgroups, subject lines beginning with "Re:" that are not follow-ups, cross posts to the original Usenet, and the posting of encoded binary messages.[131] Other alternatives to Usenet include new mailing-lists and web page discussion sites.

Thus, Usenet is neither in Stage I nor in Stage IV. As described above, Usenet's distributed model of control kept it in Stage I for a relatively long period. New spaces did not spin off because users dealt with conflicts by modifying the space itself. Nor can Usenet be considered a Stage IV space, because new spaces have been spun off and new spaces are still being proposed. Because space creation is still actively occurring, Usenet is probably more of a Stage II than a Stage III space.

Still, Usenet's long Stage I stint means it has more developed customs and rules than most spaces in Stage II. Netiquette predominates on Usenet, and new users like Nathen learn the rules just as soon as they log in. This suggests that Usenet may have a very short stay in Stages II and III.

So it is a close call whether lawmakers should try to craft laws to solve the problems of Usenet commercial spam and third-party cancellation. In my view, it is still too early for a legislature to intervene. Because Usenet is in Stage II of its development, there is still very active problem solving taking place among Usenet members. Usenet is a very dynamic part of the Internet. Nevertheless, the foregoing analysis suggests that a lawmaker would not err grievously by trying to govern Usenet today.

CONCLUSION

The structure laid out in Part III of this Comment is not the only structure a lawmaker can use when assessing the harm that regulation will cause the Internet. The point of the model is rather to illustrate the kind of thinking legislators must do and to suggest the types of questions they should ask when making these decisions.

Lawmakers are generally reluctant to try to regulate the Internet. Much of this reluctance probably reflects the fact that Internet users do not want to be externally governed. This is all very new to our lawmakers, and it is understandable that they are loathe to govern people who resist being governed. Much of the legal scholarship cautions lawmakers to proceed slowly.

131. *See Usenet II Rules* (last modified Feb. 4, 1998) <http://www.usenet2.org/rules.txt>.

I would suggest that some of this fear is misguided. It is true that if lawmakers step into part of the Internet too early, they might damage these vibrant spaces. This is not because legislatures cannot understand the Internet, but merely because parts of the Internet move and change so quickly that they defy easy analysis. There are very few universal rules that govern all of the separate parts of the Internet, so it is better to look at each of the different parts one at a time. And, when looking at the different parts, lawmakers should ask the kinds of questions raised here. Where did this space come from? What kinds of customs govern it? Could a lawmaker fairly create laws to govern this place at this time, given the history of the space?

While it may be true that most spaces in the Internet are not yet ready for legal intervention, some, such as Usenet, are close. Even if intervention would be premature today, if lawmakers consider and openly discuss why it is premature, they will be better prepared to identify when the time is right.