

# CONFERENCE

## THE DEVELOPMENT AND PRACTICE OF LAW IN THE AGE OF THE INTERNET

April 12, 1996

Nabil R. Adam	Mark H. Hellmann	Peter Martin
James B. Altman	Ethan Katsh	C.F. Muckenfuss
Clifford J. Brody	Eleanor Kerlow	Daniel Nyhart
Thomas R. Bruce	Jon E. Klemens	Ira H. Parker
Mary J. Culnan	John M. Kuttler	Ronald Plessner
Robert Gellman	Ronald D. Lee	Randy V. Sabett
Claudio Grossman		Rosemary Shields

### TABLE OF CONTENTS

Welcoming Remarks . . . . .	328
I. The Internet: The Law Firm Technology of the Future . . . . .	329
II. Introducing Lawyers to the Internet . . . . .	338
A. Actual and Potential Attorney Use of the Internet . . . . .	338
B. Concerns Regarding Attorney Use of the Internet . . . . .	352
III. Connecting Law Students and Lawyers Through the Internet and Online Services . . . . .	363
IV. The Shape of the Internet in the Twenty-First Century . . . . .	368
V. Freedoms v. Restrictions on the Internet . . . . .	382
VI. Doing Business on the Internet . . . . .	413
VII. The Impact of the Internet on the Development of Law . . . . .	443
Appendix: Participants . . . . .	465

## WELCOMING REMARKS

DEAN GROSSMAN: I am here to welcome you all to the new home of the Washington College of Law on the occasion of our Centennial.

As you might know already, we were the first law school in the world that was created by two women who believed that human beings could make a difference through the rule of law. They saw that the study of law for both men and women was an essential component of freedom and a requirement to advance essential values of human dignity.

I would like to say that I am very pleased to be here on behalf of the law school and to express the support of our administration for this important Conference, which is, as many of the things that we do here, the result of our students' initiative.

The Washington College of Law has been blessed by a student body that is extremely entrepreneurial and active, and as some would say, one that doesn't give us a moment of respite. Every year, I see that the students are more active, and I wonder what we are doing to attract them? I am sure, however, that we will continue to do so.

Some of the things we do here are the result of either the students' initiative or the joint initiative of the faculty and the students. The Center for Human Rights and Humanitarian Law, for example, is the result of such a joint effort. The first cases that were brought to the Inter-American Court on Human Rights in this hemisphere were the result of students and faculty working together.

Our student publications also are very impressive. For example, *The American Jurist* is an independently created journal that reflects the views of the students. I think it is extremely important that the students continue endeavors such as this student publication that keeps all of us on our toes.

Finally, this Conference on the Internet and the Law is the result of the students' hard work. All of us at the Washington College of Law are pleased to have you here. We are pleased to see that the Conference has attracted to our law school some renowned personalities that will assist us in exploring important issues and enable us to fulfill our educational mission.

If we feel the presence of the future anywhere, we feel it in the Internet. The Internet has enhanced our ability to communicate with others; it has changed our notions of space and time, and it has created challenges for teaching and in the pursuit of scholarly

activities. As a school, we believe that we are prepared to meet these challenges. We have a brand new state-of-the-art facility that affords our students the best academic opportunities available through technology. But technology is only a vehicle. At this Conference, we hope to explore the right path that will allow us to understand and to project what this school is all about—the promotion of important values and principles that constitute a sound legal education. We think that the law school should be anchored in reality, in the concrete concerns and aspirations of individuals and the needs of our time. We see the Internet as an important area in which to prove our commitment to the needs of our era.

I would like to welcome you all, to thank our students for producing this important Conference, and to promise to you that the use of technology will be an ongoing process in which the law school will spare no effort to commit our resources and our thinking.

Thank you very much.

#### I. THE INTERNET: THE LAW FIRM TECHNOLOGY OF THE FUTURE

MS. SHIELDS: Good morning. I'm slightly in awe of the group I have here. I appreciate being here, and I think you have an excellent cast of characters coming up for the day. I can't remember when a group like this has been assembled at one place.

I will try to set the stage for the rest of the day. I have to tell you that in my world, with all of the different work that I have done, even as Director of the Center for Law and Computers, I am only a user of technology. I don't do programming; I don't install more memory; I don't develop applications. What I do is use the technology to get the job done. I will show you what law firms are doing with technology at this moment, where they are going with their technology in the future, and how they are setting up their lawyers to do work.

For those of you who are old enough to remember, going back to the practice of law in the early 1980s, if there were computers in law firms at all, they were only in what we call the "back office" for doing time and billing. Word processing, which I think most of you do yourselves, was a back office job. Women were the word processing experts in those days, not men. In the early 1980s, personal computers were considered unprofessional. Attorneys, mostly men, never would put their hands on a keyboard because it was not considered a lawyerly thing to do.

In those days things like LEXIS<sup>1</sup> and Westlaw<sup>2</sup> were only in their second decade, and they were still bleeding money like crazy. Please don't expect me to admit to predating fax machines. If you can, think back to those slimy pieces of paper we thought would never catch on.

Let me tell you about law firms today. Word processing is everywhere; it is on lawyers' desks. Computer-assisted legal research like LEXIS and Westlaw are on personal computers. I'm not telling you anything you don't know. Time and billing are on laptop computers. Attorneys are using artificial intelligence to draft documents.

How do I know all of this? Every year for the past eleven years, I have conducted a survey of large firms. I pick large firms for two reasons: (1) they have more money; and (2) they tend to talk more about themselves.

(Laughter)

So it's a little bit easier to figure out what they're doing.

I was in law school in 1985 when I conducted the first survey. In 1986, 7% of the attorneys in the group that responded—and I get a more than a 20% response rate—had some type of computer on their desk. Last year it was 83%. So there are computers on their desks.

These attorneys probably have been connected to a network for years. E-mail is one of the biggest uses for computers today. That's not a surprise. It just verifies what we already know. Internet e-mail, in 1995, was used by 68% of the firms in this group.

Now, let's figure out what that means. Let's assume that there are desktop computers everywhere in law firms, because the survey tells us that 99% of those firms are networked. Sixty-eight percent of the firms that responded deliver Internet e-mail to the desk. Almost everyone now can be connected.

In addition, 30% of the firms are using things like Lotus<sup>3</sup> and

---

1. LEXIS is a commercial, full-text legal information service that began providing subscribers with information in 1973. See LEXIS-NEXIS, *LEXIS-NEXIS Background* (visited Oct. 30, 1996) <<http://www.lexis-nexis.com/lnc/about/background.html>> (on file with *The American University Law Review*). The LEXIS-NEXIS databases currently contain more than 11,000 sources and provide over 953 million documents online. See *id.* More than 779,000 people currently subscribe to LEXIS-NEXIS services. See *id.*

2. Westlaw is a computer-assisted legal research service containing more than 9000 databases. See West Publishing, *West Publishing: Homepage* (visited Feb. 15, 1997) <<http://www.westlaw.com/>> (on file with *The American University Law Review*). Westlaw was introduced in 1975 as the only computer-assisted legal research service offering synopses, headnotes, and key numbers. See West Publishing, *West Publishing History* (visited Nov. 5, 1996) <<http://www.westlaw.com/htbin/htimage/about.conf?47,240>> (on file with *The American University Law Review*).

3. Lotus SmartSuite is an integrated package of applications including a word processor, database, scheduler, spreadsheet, and presentation maker, which allows users to share resources



WordPerfect Office.<sup>4</sup> And 61% of the firms deliver schedules across the network.<sup>5</sup> That's pretty amazing.

Today, 92% of the firms have a setup that lets attorneys call into the office computer.<sup>6</sup> I find that phenomenal, but I also find it pretty scary. I don't know about the rest of you in this room, but I have been working too hard at the office. I thought computers would make my life easier, but it turns out that we are bringing them home. We are setting up a culture where the line between work and home is not just blurred, it is disappearing. I worked last night and this morning on my large firm survey. I work on that all the time. It goes with me everywhere. This cute little laptop travels in that little black backpack every place I go. I can connect at the hotel to my office computer and get e-mail. I can send faxes. There is no more down time in my day. I am not sure that is good or bad. I do know that if you read some of the articles on law firm culture, you will find that the students coming out of law school are interested in a better quality of life.<sup>7</sup> They are not interested in spending 2300 billable hours in the firm. But is it any better that technology now allows them to bring all of the work home with them?

Forty-six percent of the large firms let others dial into the office computer. This is another phenomenal development. If you thought fax machines increased the demand of your clients on your time, imagine now what it means when your client can dial into the office and access his files.<sup>8</sup> This is happening in 46% of the firms. For

---

across a network and to access instantly the Internet from the application they are using. See Lotus, *Lotus Applications Business* (visited Feb. 15, 1997) <<http://www.lotus.com/smartsuite>> (on file with *The American University Law Review*).

4. Corel WordPerfect Suite 7 (formerly WordPerfect Office) is a set of software applications that includes a spreadsheet, scheduler, word processing program, database, presentation manager, and Internet browser. See Corel, *Corel Word Perfect Suite 7* (visited Feb. 15, 1997) <<http://www.corel.com/products/wordperfect/cwp57/>> (on file with *The American University Law Review*).

5. See *id.* (describing Wordperfect Suite 7's ability to track schedules for entire office).

6. See Mike Buchanan, *Using PCAnywhere for Remote Access* (visited Nov. 5, 1996) <[http://www.iix.com/ams\\_users\\_group/pcany.htm](http://www.iix.com/ams_users_group/pcany.htm)> (on file with *The American University Law Review*) (describing PCAnywhere software that allows users to access office computer networks from home or from any remote location).

7. See, e.g., Richard S. Croft, *Living the Miracle of the Alternative Work Schedule*, COLO. LAW., Feb. 1996, at 17 (discussing largely underutilized labor market of attorneys desiring part-time work in order to maintain family and sanity); David R. Normann, *Walter Bachman's Law v. Life: What Lawyers Are Afraid to Say About the Legal Profession*, 42 LOY. L. REV. 193, 201 n.51 (1996) (book review) (noting student's answer to exam question expressing dissatisfaction with personal and moral sacrifices required by legal profession).

8. Firms with a modem and communications software installed on their networks can provide clients with access to the firms' computers. The system is similar to a commercial online service, except that the client is dialing into the firm's network. The firm's information systems staff must configure the firm network to limit client access. Some firms allow clients access to their files, that is, a directory of files that contain the electronic files of documents, pleadings,

those of you who are technical experts, a whole area of security, privacy, and encryption is becoming very important when we allow our clients to dial into our office computers. We need to make sure that they can't access somebody else's files and that they can't bring down the network.

Sixty-three percent of the firms use wide area networks ("WAN")<sup>9</sup> to connect branch offices together. This means that if you have an office in Los Angeles, you can share files over the network.

Let's talk about the Internet.<sup>10</sup> When I started this survey in 1985, I didn't even ask for any information on the Internet. Who knew? In 1990, I asked a few questions.<sup>11</sup> We've always asked about LEXIS, Westlaw, and Counsel Connect.<sup>12</sup>

Do you remember the years when we thought ABA/Net<sup>13</sup> was going to be our Internet communications vehicle? I work for the ABA/Net, so I'm proud to think that they were that forward-thinking to believe that they could be the Internet for lawyers. They're not. But that's okay. At least they started it out.

and letters. Some firms limit clients to electronic mail access to attorneys only. Whatever access is provided, the Large Firm survey indicates that more firms are creating electronic communications access between clients and the firm.

9. A Wide Area Network ("WAN") is "[a] network connecting [various computer networks] over long distances, typically using a common carrier, such as a telephone line." Robert X. Cringly, *Thanks for Sharing*, FORBES, Mar. 29, 1993, at 49. A Local Area Network ("LAN") operates at a high speed over distances of up to a few thousand meters, whereas a WAN generally covers a large geographical area. See BRENDAN P. KEHOE, *ZEN AND THE ART OF THE INTERNET* 221, 228 (4th ed. 1996). As more LANs become interconnected, they span greater geographical distances and are termed WANs. ROY TENNANT ET AL., *CROSSING THE INTERNET THRESHOLD: AN INSTRUCTIONAL HANDBOOK* 14 (2d ed. 1994).

10. The Internet is the "world-wide network of networks that are connected to each other, using the [Internet Protocol] and other similar protocols." ED KROL, *THE WHOLE INTERNET USER'S GUIDE AND CATALOG* 509 (2d ed. 1992).

11. In the early surveys, even into 1990, the survey included questions on the number of firms that used dial-up services such as ABA/Net, CompuServe, Dow Jones, LEXIS-NEXIS, WESTLAW, Dialog, other commercial electronic information services, and in 1990, one option identified as "Internet/BITNET." The survey invited firms to list other online services not specifically identified. Many firms reported using government online services to access legislative reports and calendars in addition to the better-known commercial services.

12. "Counsel Connect is the largest online service exclusively for lawyers." Counsel Connect, *The Online Legal Network Exclusively For Lawyers* (visited Feb. 15, 1997) <<http://www.counsel.com/inside/>> (on file with *The American University Law Review*). Counsel Connect's features include a searchable Internet directory of all Counsel Connect members, more than 200 practice-specific discussion groups, monthly online seminars, and e-mail. See *id.*

13. ABA/Net was an early American Bar Association communications service offered to ABA members. The system was designed and created with proprietary software. Attorneys who used ABA/Net had to buy and use a specific ABA/Net communications software package that provided access to ABA/Net only. Subscriptions to this early electronic communications system were never high. As the commercial online services, such as CompuServe and America Online, began to offer more features and options, use of ABA/Net dropped. The ABA, however, has continued to explore how the Internet can serve members and now offers a complete suite of services on its home page. See American Bar Association, *American Bar Association Homepage* (visited Nov. 5, 1996) <<http://www.abanet.org>> (on file with *The American University Law Review*).

The funny part about this is, in late 1993, a private company called Counsel Connect was created. Counsel Connect is a communications channel set up to provide electronic communications for attorneys exclusively. Counsel Connect now has some competition.<sup>14</sup> I saw Counsel Connect start back in late 1993, early 1994. I laughed at the people who created it.

I said, "Who's going to pay big bucks to get a communications channel for attorneys only? I can use the Internet. I can use CompuServe,<sup>15</sup> I can use America Online."<sup>16</sup> Well, they are laughing all the way to the bank.

In 1993, I didn't even ask firms if they used Counsel Connect. In 1995, almost 80% of the firms had invested in it. And believe me, it is a significant financial investment. It is like a private club of attorneys. There are chat lines,<sup>17</sup> discussion groups,<sup>18</sup> access to the Web.<sup>19</sup> They do a lot of filtering for articles. What's the point here? The point is that all of your colleagues are putting big money into electronic communications from their desktops.

Use of the Internet by attorneys has grown. In 1992, less than 10% of attorneys or firms had Internet access. In those days it was BITNET.<sup>20</sup> And now that percentage is more than 95%.

What do we use the Internet for? What do we want it for? Well, the funny part is that people don't know what to do with the Internet, but they are afraid not to have it. Seventy-seven percent of the firms

---

14. See, e.g., Lawyer Search, *About Lawyer Search* (visited July 28, 1996) <<http://www.courtly.com/lsearch/hrm/aboutls.html>> (on file with *The American University Law Review*).

15. CompuServe is one of the world's largest online, network, and Internet service providers. See CompuServe, *Online Services from CompuServe* (visited Nov. 5, 1996) <<http://world.compuserve.com/world/online/index.html>> (on file with *The American University Law Review*).

16. America Online ("AOL") is a commercial Internet service provider that allows users to access the AOL network and to use it as a gateway to access the Internet. See AOL, *Welcome to AOL* (visited Nov. 5, 1996) <<http://www.aol.com>> (on file with *The American University Law Review*). Additionally, AOL provides context for its subscribers that it claims is not available on the Internet. See *id.*

17. A chat line is a "service that allows large group conversations over the Internet." KROL, *supra* note 10, at 509.

18. A discussion group is an "electronic message board on an online service." Multi Digital Media, *The Webster Online Dictionary* (visited Nov. 27, 1992) <<http://www.mdmi.com/webs.htm>> (on file with *The American University Law Review*).

19. The World Wide Web is a "hypertext-based system for finding and accessing Internet resources." KROL, *supra* note 10, at 515.

20. BITNET is an acronym for "Because It's Time NETwork." See *What Is BITNET?* (last modified Jan. 4, 1996) <<http://rudolph.la.psu.edu/ocala/latips/bitnet.html>> (on file with *The American University Law Review*). BITNET originally existed as a means for researchers to better communicate with one another, and in this way BITNET helped shape the Internet into what it is today. See *id.* BITNET offers mail, mailing lists, and some file transfer but cannot support remote login. See KEHOE, *supra* note 9, at 7.

use the Internet for legal research. In 45% of the firms, attorneys have World Wide Web ("Web" or "Net") access.<sup>21</sup> Now we don't know exactly what they do in their offices when they close the door.

(Laughter)

For all we know, they may never touch it. We call these expensive paperweights. But we know that the firm is giving them a computer and is connecting them to a network. So, Web access is coming right to their desktop. Twenty-four percent of all the attorneys on this survey have World Wide Web or Internet access. But MIS directors and managing partners have said, "I don't know how to set up a firewall,"<sup>22</sup> so I don't want all my attorneys on the Internet." Or, they have said, "I don't want my attorneys surfing the Net and wasting billable hours."

Anyway, in the big firms that are connected to the Internet, 24% of their attorneys are connected. That is phenomenal. The number of attorneys with access at their desks is 19%. I don't think that result is right. I think that people got tired at the end of the survey and didn't answer that question correctly. I really think that there is a higher percentage of Internet access at the desktop, but either the attorneys don't know it or they don't have a password. I think if the survey result is true, it is an access problem.

Nineteen percent of the firms in 1995 had a uniform resource locator ("URL"),<sup>23</sup> or an Internet address. That means they have a home page.<sup>24</sup> What are they doing with it? They don't really know. I'm not trying to kid you here. The point is that the Internet is so important that these firms think they have to be there. That 19% is phenomenal.

---

21. See *supra* note 19 for definition of World Wide Web.

22. A "firewall" is a single boundary machine, or gateway, that connects an internal network to the Internet. See G. BURGESS ALLISON, *THE LAWYER'S GUIDE TO THE INTERNET* 333 (1995). The firewall protects the internal network from unauthorized intrusions and security attacks by blocking the passage of unauthorized messages. See *id.* For instance, some firms may have a firewall that permits only e-mail traffic into its network but allows internal users to access the Internet. See *id.*

23. A URL is the Internet's system of citation or the "addressing scheme used to identify the specific location of Internet resources." ALLISON, *supra* note 22, at 60, 339. Virtually every file, database, and resource on the Internet is identified by a URL. See *id.* at 60. The basic structure of a URL is the name of the Internet service, http or ftp for example, followed by the username and password, which usually are omitted. See *id.* The third part of the URL is the host computer's address, which is followed by the path to the specific item. See *id.* Thus, the URL for *The American University Law Review* is <http [service]://www.wcl.american.edu [host computer's location]/pub/journals/lawrev/aulrhome.htm [path to homepage]>.

24. See CII, *Law Firms on the Net* (visited Nov. 5, 1996) <<http://www.law.cornell.edu/focus/lawyers.html>> (on file with *The American University Law Review*) (providing list of law firms with homepages on the Web).

Now, let's go on with what is happening in the firm. In these large firms more than 99% use computers in some way for litigation. Litigators have used computers forever. In the old days, when I started this survey, litigators would contract with Price Waterhouse or Arthur Andersen<sup>25</sup> to scan and index all of their documents. Now it's being done on a PC. My students think they now can be as effective working in a small firm or on their own as they would be in a large firm because everything comes on a laptop. They don't need to be in a large firm, and they believe that they can compete successfully with large firms.

Attorneys use computers to automate their practice. A lot of them use plain old word processing. That's a no-brainer. But they also use document generator programs. Generally, automated document assembly programs capture attorney expertise and provide a vehicle for attorneys to reuse that expertise electronically, such as word processing templates created for simple documents. Document generator programs allow attorneys to instruct the computer to choose appropriate text for a specific client, to retain answers for use with the same client at a later time, and to build client databases for gathering and reporting on client information. Capsoft is an example of a document generator program.

These programs use a little artificial intelligence. Attorneys are trying to find ways to get more work done in the same amount of time. Document generator programs allow you to take what you know as a lawyer and put it in a document generator. In estate planning, for instance, you take all that expertise of how to draft good wills and trusts, put it into a document generator, and leverage it down to a lower-level associate, or even to a paralegal. You meet with the client, but then someone else puts the documents together. The use of these programs is growing phenomenally.

Document management also is growing phenomenally. Document management programs create a structure in which computer users create documents. When a document management software program is integrated into a firm's word processing program, users who create documents must identify a client, matter, supervising attorney, type of document, and other information before they can begin typing or editing. The document management software creates an index of the

---

25. Price Waterhouse and Arthur Andersen would scan and index all of a firm's documents so that they could be searched by computer. See *Price Waterhouse Home Page* (last modified Apr. 8, 1996) <<http://www.pw.com/default.htm>> (on file with *The American University Law Review*); *About Arthur Andersen* (visited Sept. 12, 1996) <[http://www.arthurandersen.com/firmwide/about\\_aa/about.htm](http://www.arthurandersen.com/firmwide/about_aa/about.htm)> (on file with *The American University Law Review*).

identifying information. After the document is created, other users can search for the document by any of the identifiers. This process makes it easy for attorneys, paralegals, and secretaries to find documents they have created in the past and to find documents created by anyone else on related matters. Although the software creates an orderly system for finding and reusing the firm's intellectual product, the programs are burdensome, "horrible" to some, because they require all users to follow a fixed process for creating, retrieving, and editing documents.

All right, let me tell the attorneys in the room what to expect from people graduating from law school. Let me tell you about the players coming out to compete in your ball park. These men and women are past computer literate and are into being computer comfortable. They are going to compete with us on a level that is unprecedented. They have experience with computers, document generators, file management, and the Internet that the rest of us are just beginning to get a handle on.

How do you fight this? I don't think you should. I say, make them your colleagues and learn from them. What I do is hire students any time and every time I can to do Internet HTML coding,<sup>26</sup> to do writing, to do editing, to do work at the TECHSHOW.<sup>27</sup> Get these students on your team; you're going to need them.

At Chicago Kent College of Law one year ago, we put students' case books in a computer.<sup>28</sup> So thirty students in 1994 and 100 in 1995

---

26. Hypertext Markup Language ("HTML") is the tagging format that instructs a Web browser, such as Netscape Navigator, available at <http://home.netscape.com/comprod/mirror/index.html> or Microsoft Internet Explorer, available at <http://www.microsoft.com/ie/ie.htm>, how to display text and images and identifies which images or pieces of text are linked to which other items. See ALLISON, *supra* note 22, at 334. The mechanics behind the links created by HTML are seamless to the user but are identified by bold, underlined, or colored text for instant recognition. See TENNANT ET. AL., *supra* note 9, at 105.

27. TECHSHOW<sup>TM</sup> is one of the nation's largest legal technology conferences and exhibit halls for the legal professional. It is held annually in Chicago during the Spring and is sponsored by the ABA Law Practice Management Section. See Law Practice Management Section of the American Bar Association, *TECHSHOW '96* (visited Aug. 11, 1996) <<http://www.abanet.org/techshow/home.html>> (on file with *The American University Law Review*).

28. The individual casebooks were obtained from each publisher as an electronic file. The Center for Law and Computers staff and students converted each casebook into a hypertext format using Folio VIEWS. The staff and students added links across the text to references of statutes, other cases, and law review articles. The set of casebooks then was installed on the hard disk of each student's personal laptop computer. For a list of the casebooks that were converted to electronic form, see Richard A. Matasar & Rosemary Shiels, *Electronic Law Students: Repercussions on Legal Education*, 21 VAL. U. L. REV. 909, 921-22 (1995).

In 1994, 30 students volunteered to use the casebooks and their laptop computers in class. Many of the students read the cases directly from their laptops adding notes and highlighting as appropriate. Many brought their laptop computers to class and participated in class discussion by referring to their notes and highlighted material in electronic form. The students

brought their casebooks to class on their laptops. They had things like their justice book, legal writing book, and criminal law book on the computer. They could put notes in it. They could highlight it, because in case you didn't know, you can't learn the law unless you can turn it yellow.

(Laughter)

What else do law schools do? With the Internet they have ways of drawing together lawyers and professors from all over the world. So all of a sudden, the students in this law school can talk to the firm across the street or across the world.

In 1992, I helped organize an international conference of lawyers and legal educators from around the world.<sup>29</sup> People came from South Africa, Norway, Sweden, and Canada, for instance. I could only survive the planning by dealing with them on the Internet.

I must tell you what the ABA is doing. The ABA is trying to help you with the two things you need to know. When you go out and practice law, you must learn two things: (1) you have to get clients, or else you can't pay the bills; and (2) you have to get the bills out or the clients will not pay. I hate to tell you the reality of life. Lawyers are doing a lot of it on the Internet.

The Law Practice Management Section of the ABA has magazines;<sup>30</sup> it has the TECHSHOW;<sup>31</sup> it has books.<sup>32</sup> Someone laughed at me the other day and called me a road warrior because I use a laptop computer. I got up to do a presentation at the TECHSHOW, which I find very stressful, and the computer wouldn't work. We discovered that the cable had been cut. I guess I caught it in the door or something. So later, at a cocktail party, with a friend

---

were required to purchase the print copy of each casebook, although many of the students put the print versions aside after becoming comfortable with the electronic versions. Many of the students also used the Folio VIEWS software to build individual full-text databases of cases downloaded from LEXIS-NEXIS for their legal writing assignments. *See id.* at 921-28.

In 1995, the project grew to 100 students who volunteered to experiment with these books. Although the experiment began as a private venture, LEXIS-NEXIS now has developed, published, and started marketing electronic casebooks for a number of substantive areas. Other legal education publishers are beginning to produce and market similar electronic casebooks.

29. Second International Conference on Substantive Technology in the Law School, Chicago, Ill., July 30-Aug. 1, 1992.

30. *Law Practice Management Magazine* (USPS 009635) is published eight times a year as a service to its members by the American Bar Association Law Practice Management Section, 750 N. Lake Shore Dr., Chicago, IL 60611-4497.

31. *See* Law Practice Management Section of the American Bar Association, *supra* note 27 (describing TECHSHOW).

32. The ABA Law Practice Management Section is the largest publisher of books on practice management and development. Recent books include: BURGESS G. ALLISON, *THE LAWYER'S GUIDE TO THE INTERNET* (1995); DANIEL S. COOLIDGE & MICHAEL J. JIMMERSON, *A SURVIVAL GUIDE FOR ROAD WARRIORS* (1996); ERIK J. HEELS, *THE LEGAL LIST* (1995); GREGORY H. SISKIND & TIMOTHY MOSES, *THE LAWYER'S GUIDE TO MARKETING ON THE INTERNET* (1996).

of mine, I stripped down the cable like you used to do the old stereo equipment, remember that? I happened to be carrying electrical tape. Ask me why I carry electrical tape—I don't know. And so we patched it all together, and I was fine—I mean, as fine as I could be doing a presentation like this.

Maybe next year when we have this conference, none of us has to be in this room. Why not just pick this up on the Internet? For that matter, we could do video conferencing to the desktop. Why not have that little camera on your desktop computer and see me speak from there? And I could be in my office in Chicago; I could be at home.

I urge all of you to ask questions. What are the cultural issues that we're facing with widespread use of the Internet? How is the practice of law going to change? How can we keep up with it? And what do we not want as we go into the 21st Century?

Thank you very much.

(Applause)

## II. INTRODUCING LAWYERS TO THE INTERNET

### A. *Actual and Potential Attorney Use of the Internet*

MR. KUTTLER: I'd like to welcome all of you to this session on "Introducing Lawyers to the Internet." I'd also like to thank the Washington College of Law for inviting me to speak here today. I want this session to lay the foundation for the rest of the day. I am sure that some people in the audience have a lot of experience with the Internet and others have very little. So as an introduction, I will cover some of the basics. Hopefully, even those of you that have spent some time surfing the Web will come away from this session learning something new.

I was very interested in Ms. Shiels' statistics from the Chicago Kent survey.<sup>33</sup> Although 68% of the big law firms that answered Ms. Shiels' survey may make Internet access available at least for e-mail,<sup>34</sup> I am sure that *actual* use of Internet e-mail is nowhere near that number. One thing that I challenge all of you to do is to increase that percentage. By having and attending seminars like this and by

---

33. See *supra* Part I (summarizing statistics regarding large firm computer and Internet use); see also Rosemary Shiels, *Technology Update: Attorneys' Use of Computers in the Nation's 500 Largest Law Firms*, 46 AM. U. L. REV. 537 (1996) (analyzing trends in computer and Internet use by attorneys).

34. See *supra* Part I, at 330.



going forth and telling your friends and your peers, we increase attorney use of computers and technology like the Internet.

My objective for today is to convey an understanding of the basic services available on the Internet. We also will discuss ways that lawyers can use the Internet in their practice.

What is the Internet? The Internet is a very big WAN, connecting millions of computers worldwide.<sup>35</sup> It is not so different from the networks you might have within your law offices or connecting your office to other branch offices around the country, except in scale. It has millions of computers.

I brought a prop, G. Burgess Allison's *The Lawyer's Guide to the Internet*.<sup>36</sup> I think all lawyers will find this book most helpful in understanding the Internet. I have the book. This is the ABA's best selling publication, I believe. In fact, it may even be back-ordered if you tried to order one today, but I recommend it highly. What I'm going to show you today will only barely scratch the surface of what is out there in terms of the Internet and what is of interest to lawyers. This book goes into more detail. I encourage all of you to explore it at your leisure.

The Internet is an outgrowth of ARPAnet, which was a Defense Department project that started back in 1969 with the goal of networking computers at universities and Defense Department centers in such a way that the network could withstand a massive failure.<sup>37</sup>

---

35. See ALLISON, *supra* note 22, at 173 (positing that more than 4.8 million host computers are attached to Internet and that each of these host computers may have thousands to millions of users). Estimates of the number of people using the Internet vary widely. See *Afraid to Ask? All You Ever Wanted to Know about Counting the Web-Heads*, NEW MEDIA AGE, Mar. 14, 1996, at 8 (explaining difficulty of accurately estimating number of Internet users). Conservative estimates put the number at seven million. See Michael J. Miller, *Internet Growing Pains*, PC MAG., Apr. 9, 1996, at 29. On the other hand, a study by Computer Intelligence estimates that there are 15 million Internet users in the United States. See *Surfing Stats: Computer Intelligence Internet Survey*, PC WK., June 3, 1996, at E6. Mid-range estimates calculate the number of U.S. and Canadian users at 24 million, according to a study by Nielsen Media Research. See *It's Tough Counting*, CREDIT CARD MGMT., Feb. 1996, at 74. High-end figures estimate 56 million users. See Leigh Gallagher, *Net Profits: Internet and the Sporting Goods Industry*, SPORTING GOODS BUS., Feb. 1996, at 74 (citing study by International Data Corp.). The Chairman of NYNEX, Ivan Seidenberg, reports that there may be as many as 77 to 80 million Internet users globally. See Ivan Seidenberg, *Road Maps for Top Line Growth*, Address Before the Strategic Management Conference (Jan. 17, 1996), in VITAL SPEECHES, Apr. 1, 1996, at 363.

36. See ALLISON, *supra* note 22.

37. ARPAnet ("Advanced Research Projects Agency") was created by the U.S. Department of Defense in 1969 to provide a means of uninterrupted communication in time of war. See *id.* at 31. The ARPAnet was designed to withstand partial outages so that the network could continue to function even in the event of a global nuclear war. See *id.* The technology sends information by disassembling it into smaller packets that are then sent along numerous channels to reach the appropriate destination. See *id.* Upon reaching the destination, the packets reassemble to form the original piece of information. See *id.* If any element of the network is disabled, the packets of information are rerouted until they reach their destination. See *id.*

If 80% of the computers were unavailable, the network still would function. And the little mishap they were planning for was global thermonuclear war.<sup>38</sup> Fortunately, they never have had a test to see if the Internet would keep running in that circumstance. But that is where it had its roots. And it certainly has come a long way since then.

What are the services that are available? The basic service, the one that many of you are familiar with, is e-mail. E-mail has improved productivity over the past few years. For instance, if you work in a legal department and are communicating with outside counsel, you no longer must wait for that FedEx<sup>39</sup> delivery or for the fax machine to receive drafts of documents to review and edit; you simply exchange e-mail. But e-mail is not without some difficulties. I still talk to lawyers who say, "Well, I was using the Internet to exchange documents and what I got was in Greek. It was all encoded. It was MIME encoded."<sup>40</sup> I needed to find someone in MIS to decode it for me." So there are still some bumps along the way. But these issues can be dealt with through training and through system administrators in law firms, who enable their systems to decode and encode documents automatically.

File transfer protocol ("ftp")<sup>41</sup> is a way of downloading information. Most of these services are seamless to you. If you were using the Internet a decade ago, you may have had to master some arcane commands to upload and download files, but now it is fairly seamless, which I think is the reason for its success among lawyers.

Telnet is a way of remotely logging onto other computers.<sup>42</sup>

---

38. See *id.*

39. See FedEx, *Welcome to FedEx* (visited Jan. 21, 1997) <<http://www.fedex.com>> (on file with *The American University Law Review*).

40. Multipurpose Internet Mail Extension ("MIME") "is an e-mail transfer protocol that supports the transfer of 8-bit files (as attachments to e-mail) rather than the 7-bit transfers normally supported by Internet-based e-mail." ALLISON, *supra* note 22, at 335. Rather than exchanging plain text e-mail messages, MIME users can create and read e-mail messages that contain, among other things, multiple fonts, enriched texts, images, audio, and video. See Rodney Campbell, *What is MIME?* (last modified Sept. 2, 1994) <<http://www.telstra.com.au/rodney/papers/mm/mimewhat.html>> (on file with *The American University Law Review*).

41. File Transfer Protocol ("ftp") is a software utility that is included with most Internet access services that provides an interface allowing a "user on one computer to log onto, review, and transfer files to and from another host computer over a network." ALLISON, *supra* note 22, at 333; see also KEHOE, *supra* note 9, at 27-40 (setting forth basic commands necessary to operate ftp session).

42. Telnet is the basic service that allows a user to logon to a remote host computer "and use it as if the local computer were a terminal of the remote machine." TENNANT ET AL., *supra* note 9, at 65. When using ftp, or e-mail, the local computer moderates the user's interaction with the remote machine. See *id.* Telnet, on the other hand, is wholly interactive; after the local computer connects with the remote host, "the local system becomes transparent and you work

There are newsgroups<sup>43</sup> out there that are of interest to lawyers.<sup>44</sup> Wide Area Information Servers ("WAIS")<sup>45</sup> is a service that assists the user in searching for and locating information in a vast number of databases on the Internet.<sup>46</sup> There are some law firm directories available as WAIS databases. However, the utility of WAIS databases has been vastly exceeded by web-based data sources such as Martindale Hubbell<sup>47</sup> and West Legal Directory.<sup>48</sup>

Gopher<sup>49</sup> is a kind of a precursor to the World Wide Web. It is a more menu-oriented version of the Web. When surfing the Internet, you occasionally may come across a Gopher site, where you will see the files and directories listed in a menu system. The name Gopher was developed at University of Minnesota—the Golden Gophers. If

---

as if you were directly attached to the remote system." *Id.* Many library catalogs have open Telnet access. *See id.* at 70-72 (listing "selected resources available for open telnet access"); KEHOE, *supra* note 9, at 65-76 (describing various telnet resources).

43. A newsgroup is a discussion area or a collection of messages regarding a certain topic. *See* KEHOE, *supra* note 9, at 41. "There are newsgroups on thousands of topics. Most of the topics have been carefully screened to make sure that discussion groups are created only on topics where there is sufficient interest." ALLISON, *supra* note 22, at 336. Unlike mailing lists or listservs, *see infra* note 51 and accompanying text (defining and describing listservs), messages posted to a newsgroup are not distributed to subscribers. *See* KEHOE, *supra* note 9, at 42. Rather, the messages are stored in a common area, and the user must come to that location to read and post messages. *See id.*; ALLISON, *supra* note 22, at 336.

The term Usenet sometimes is used interchangeably with newsgroups. *See id.* at 46, 336, 339. Others refer to Usenet as its own network that contains the aforementioned newsgroups. *See* TENNANT ET AL., *supra* note 9, at 146; KEHOE, *supra* note 9, at 223 (referring to Usenet as area in which newsgroups are located).

44. For two examples of such newsgroups, *see infra* notes 58-59.

45. A WAIS provider establishes a database, and a WAIS server allows any user on the Internet to conduct a full-text search of one or more WAIS databases. *See* ALLISON, *supra* note 22, at 67; KEHOE, *supra* note 9, at 101.

46. *See* ALLISON, *supra* note 22, at 67; KEHOE, *supra* note 9, at 110. Unlike ftp, *see supra* note 41 (describing ftp), which requires the user to download each file in order to read it, "and [the] only browsable hint as to the content of each file comes from . . . the file name," WAIS allows the user to browse the full text of the file without downloading the information. *See* ALLISON, *supra* note 22, at 67-68. "The WAIS servers receive client search requests, run them against the databases they oversee, and forward search results. The data available on WAIS databases include documents, images, sounds, and other types of data, and are indexed extensively by the server software." TENNANT ET AL., *supra* note 9, at 123.

47. Martindale-Hubbell, *About Martindale-Hubbell* (visited Jan. 21, 1997) <<http://www.martindale.com>> (on file with *The American University Law Review*).

48. West Publishing, *West's Legal Directory* (visited Jan. 21, 1997) <<http://www.wld.com>> (on file with *The American University Law Review*).

49. Gopher is "a simple menu-based information service that makes collections of information available across the Internet. It allows gopher clients to access information from any accessible gopher server, in which connections from one server to the next are handled entirely as background operations—transparent to the user." ALLISON, *supra* note 22, at 333-34. Gopher menu options may take the user to documents stored on the host computer or to other gopher sites on other host computers. *See id.* at 68. Additionally, gopher browsers provide access to WAIS, *see supra* notes 45-46 and accompanying text; ftp, *see supra* note 41 and accompanying text; and telnet, *see supra* note 42 and accompanying text. *See* ALLISON, *supra* note 22, at 71.

you develop a system, you have the privilege of naming it. So that is where the term "Gopher" came from.

Finally, the World Wide Web is the graphical portion of the Internet.<sup>50</sup> It is the portion I assume most of you are experienced with, and it is what this talk will focus on.

But to spend a little bit more time on areas other than the World Wide Web that have information useful to lawyers, I'll give you some examples of listservs.<sup>51</sup> There are some that list expert witness biographies that litigators can browse.<sup>52</sup> If you are a bankruptcy lawyer, there is an interesting petitions mailing list.<sup>53</sup> There is also a mailing list oriented toward EPA if you are an environmental lawyer,<sup>54</sup> and there is a health law mailing list.<sup>55</sup> And for those of

#### 50. The Web

is based on the concept of hypertext, where one document can have links to a number of other documents that have related information. In the case of the World-Wide Web, these documents often exist on computers in many other locations around the world, and by using the World Wide Web one can transparently jump from document to document without knowing anything about the remote computer that is providing the information.

TENNANT ET AL., *supra* note 9, at 105. The Web is user friendly, due to the use of HTML, supports multimedia sources, and can be used to invoke other software. See ALLISON, *supra* note 22, at 339; KEHOE, *supra* note 9, at 77.

51. Listserv lists are electronic discussion groups that are maintained automatically by the sponsoring computer, or listserver. See ALLISON, *supra* note 22, at 65; KEHOE, *supra* note 9, 18. Unlike Usenet, in which each time the user wants to participate in a newsgroup discussion, he or she actively must search for one, see *supra* note 43 and accompanying text (describing newsgroups), with listservs, the user subscribes to a particular discussion group, and each message posted to the group is delivered to the user's e-mail box. See ALLISON, *supra* note 22, at 65; KEHOE, *supra* note 9, at 18. There are thousands of discussion groups covering many different topics. See KEHOE, *supra* note 9, at 18. For a comprehensive listing of law-related discussion groups, see Lyonette Louis-Jacques, *Law List Info* (last modified July 10, 1996) <<http://www.lib.uchicago.edu/~llou/lawlists/info.html>> (on file with *The American University Law Review*); American Bar Association, *Discussion Groups Catalog* (visited on Aug. 5, 1996) <<http://www.abanet.org/discussions/home.html>> (on file with *The American University Law Review*).

52. See, e.g., Consolidated Consultants Company (last modified Apr. 30, 1996) <<http://www.lawinfo.com/biz/ccs>> (on file with *The American University Law Review*) (providing free expert witness referral service); Legal Research Network, *LERN* (visited July 31, 1996) <<http://witness.net>> (on file with *The American University Law Review*) (using online technology to network attorneys and experts in attempt to reduce cost of finding best expert for case).

53. See, e.g., Law Journal Extra, *Bankruptcy Law News* (visited Jan. 21, 1997) <<http://www.ljx.com/practice/bankruptcy>> (on file with *The American University Law Review*); Advice & Counsel Corp., *The Expert Pages: Bankruptcy* (visited Aug. 5, 1996) <<http://expertpages.com/ban010.htm>> (on file with *The American University Law Review*).

54. See American Bar Association, *ABASONREEL* (visited Aug. 5, 1996) <<http://www.abanet.org/discussions/open.html>> (on file with *The American University Law Review*) (operating as forum for people "to discuss environmental law issues, natural resource issues and energy issues").

55. See, e.g., *Healthlaw-1 Listserv Subscription and Archives Information* (visited Aug. 5, 1996) <<http://www.law.pace.edu/science/medical/health-law/healthlaw-1.html>> (on file with *The American University Law Review*) (instructing users how to subscribe to listserv); *Healthlaw-L* (visited Aug. 5, 1996) <<http://lawlib.wuacc.edu/washlaw/reflaw/reflisthea.ann>> (on file with *The American University Law Review*) (stating that listserv is managed discussion list for current health

you in the audience who are MIS directors or law firm administrators, there are discussion forums centered around law firm administration.<sup>56</sup>

I also want to tell you how to subscribe to one of these lists. You typically just send an e-mail to the listserver, and as part of your message you type: "Subscribe, [the name of the service]," and then your e-mail address. You usually get a confirmation back. You also usually get instructions on how to remove yourself from the list if, over time, you find it is not meeting your needs. Listservs are one way to receive information in your practice area.

Usenet, another portion of Internet, contains discussion groups called newsgroups.<sup>57</sup> Newsgroups exist on many topics, including, for example, intellectual property law<sup>58</sup> or more general miscellaneous legal groups.<sup>59</sup> I would encourage you to check out some groups that are of interest or of use to you.

Back to the World Wide Web. The World Wide Web is a fairly new phenomenon, which is surprising given all the media attention that it has received. It was first invented in 1989.<sup>60</sup> To access the Web you require a piece of application software called a Web browser.<sup>61</sup> Netscape Navigator is by far the most popular Web browser.<sup>62</sup>

The World Wide Web is easy to use primarily because it takes advantage of a graphical user interface such as Netscape Navigator or Microsoft Internet Explorer.<sup>63</sup> It makes good use of hypertext links<sup>64</sup> between pages. That is what the Web is, a series of hypertext

---

law topics and setting forth subscription instructions).

56. See Lomex, *Law Office Management Exchange* (visited Feb. 18, 1997) <<http://www.lomex.com/>> (on file with *The American University Law Review*).

57. See *supra* note 43 and accompanying text (providing description and definition of Usenet newsgroups).

58. See Chicago-Kent College of Law, *misc. int-property* (visited Jan. 21, 1997) <[http://www.kentlaw.edu/cgi-bin/idn\\_news/-T+misc.int-property](http://www.kentlaw.edu/cgi-bin/idn_news/-T+misc.int-property)> (on file with *The American University Law Review*).

59. See Chicago-Kent College of Law, *misc.legal.moderated* (visited Aug. 5, 1996) <[http://www.kentlaw.edu/cgi-bin/idn\\_news/-G+misc.legal.moderated](http://www.kentlaw.edu/cgi-bin/idn_news/-G+misc.legal.moderated)> (on file with *The American University Law Review*).

60. See Ben M. Segal, *A Short History of Internet Protocols at CERN* (last modified Apr. 1995) <<http://www.cern.ch/pdp/ns/ben/TCPHIST.html>> (on file with *The American University Law Review*) (stating that Tim Berners-Lee and his team at CERN Physics laboratory in Geneva, Switzerland, developed and named Web in 1989); see also TENNANT ET AL., *supra* note 9, at 105 (describing invention of the Web).

61. See KEHOE, *supra* note 9, at 78-79 (stating that Web browsers such as Netscape Navigator and Microsoft Internet Explorer are available commercially, via anonymous ftp, or are provided by Internet Service Provider).

62. See Netscape Communications Corp., *Welcome to Netscape* (visited Jan. 20, 1997) <<http://www.netscape.com>> (on file with *The American University Law Review*).

63. See *supra* note 26.

64. Hyper-Text Markup Language ("HTML") allows the author of a Web site to design certain graphics, words, or phrases within the document that will link the user to related

links from one document to another. It is seamless to the user on whose computer these things reside. During my first exposure to the Web, I was fascinated that, with a few clicks of the mouse, I would go from a home page that was in the United States and then very seamlessly go to one that was in Russia. It is a very powerful concept.

Most Web pages today include more than just text. They include graphics; they may include sound files or even moving pictures. All of this actually is driving the need for more bandwidth.<sup>65</sup> If you are accessing the Web today on a 14.4 or 28.8 modem, and you access a page that has video or a lot of graphics, the download speed goes down. So there is a real need for higher bandwidth connections to the Internet. Fortunately, for those of you that live in this area, Bell Atlantic<sup>66</sup> has a fairly attractive ISDN Anywhere program<sup>67</sup> that can provide you with an ISDN connection<sup>68</sup> linking your house to an Internet provider. The ISDN connection will get you a little bit better bandwidth, a little bit better response time.

In fact, one New York law firm's only remote access for lawyers to their law firm is through ISDN. They thought it might make their

information within the site or elsewhere on the Web. See ALLISON, *supra* note 22, at 70. The hypertext links allow the user to click on marked text and jump seamlessly from one part of the Web to another. See *id.* at 70, 148 (describing how HTML coding creates hypertext links); Segal, *supra* note 60 (defining hypertext links). By facilitating the cross-referencing of information, hypertext links have established the Web as a user-friendly interface to the Internet. See KEHOE, *supra* note 9, at 77.

65. Bandwidth is the term used to describe the capacity and speed of the links between computing devices. See TENNANT ET AL., *supra* note 9, at 23. Bandwidth is measured by megabits per second ("mbps"); the higher the number, the better the connection. See Rob Pegoraro, *The FFWD Directory of the Internet Service Providers*, WASH. POST, Sept. 26, 1996, FFWD Magazine, at 3. A T-1 line is an average speed connection for an office environment, carrying data at 1.5 mbps. See *id.* A T-3, also known as the DS-3, line is faster, at 45 mbps. See *id.* T-1 and T-3 lines are practical mostly for office use. See William Casey, *The Inside Line on Going Digital: ISDN Brings Internet Connection up to Speed*, WASH. POST, Sept. 23, 1996, Washington Business Section, at 18. For home use, many people use ISDN connections. See *id.* at 17-18; *infra* note 67-69 and accompanying text (describing ISDN connections).

66. See Bell Atlantic Communications, Inc., *A Different Long Distance Company* (visited Jan. 21, 1997) <<http://www.callbell.com>> (on file with *The American University Law Review*).

67. "ISDN, which stands for integrated services digital network, is a system of digitizing phone networks . . . [that] allows audio, video, and text data to be transmitted simultaneously across the world using end-to-end digital connectivity." *What is ISDN?* (visited Aug. 12, 1996) <<http://www2.echo.lu/eiuf/en/whatis.html>> (on file with *The American University Law Review*). Bell Atlantic's ISDN Anywhere program offers subscribers within a certain distance of central office low-cost access to ISDN service. See Bell Atlantic Corp., *Bell Atlantic Residential ISDN—Deployment* (visited Aug. 5, 1996) <<http://www.bellatl.com/isdn/consumer/graphic/html/order/deploy>> (on file with *The American University Law Review*).

68. An ISDN connection is four or more times faster than a 28.8 kbps modem. See Casey, *supra* note 65, at 18. The ISDN line supports two data channels, each of which moves data at 64 kbps and therefore has a theoretical capacity of 128 kbps. See *id.* "ISDN brings up most Web pages promptly, if not exactly instantaneously." *Id.* "Most of the time . . . there doesn't seem to be a readily discernible difference between [ISDN and T-1 lines]," although T-1 speed is at least 10 times faster than ISDN. See *id.*

network a bit more secure, given that most of the people who break into systems still use analog technology.<sup>69</sup> In the short run, having ISDN as the only means to dial into their network might give that firm some measure of security.

If you are exchanging information over the Internet that is not necessarily confidential, you do not have to worry about this. But, if you want something to remain confidential, and you want to send it over the Internet, you should make it your practice to encrypt the information.<sup>70</sup> There are some options for doing encryption; one is PGP, or "Pretty Good Privacy,"<sup>71</sup> and your firm can license this software. The software is still a little bit clumsy. You will have both a public key and a private key, assigned to you. You'll have to exchange public keys with all the people that you do correspondence with. You also have to take great care that when they send you their public key that the person you think sent it to you is, in fact, the person who actually sent it to you, and not some person who is trying to intercept your mail. Therefore, it can be a little bit clumsy. But, it does offer you a fair measure of protection. I think, given the maximum key length that you can create, it would take a series of computers one hundred years of trying to break your code to read your e-mail message.<sup>72</sup> Hopefully, by that time it wouldn't be relevant anymore.

You can access the other services I described—Telnet<sup>73</sup> and ftp,<sup>74</sup> for instance—through the World Wide Web, and usually it is seamless to you. This downloading and uploading of files occurs in the background. The seamlessness of the Web is its whole advantage and what makes it easy to use.

---

69. ISDN is a digital connection that needs special "digital modems" to communicate. ISDN connections are not very common at present.

70. For a full discussion of encryption technology, see *infra* Part II.B, at 359-61. For a general discussion of cryptography, see BRUCE SCHNEIER, *APPLIED CRYPTOGRAPHY: PROTOCOLS, ALGORITHMS, AND SOURCE CODE IN C* (2d ed. 1996); Robin Whittle, *Cryptography for Encryption, Digital Signatures, and Authentication* (June 19, 1996) <<http://www.ozemail.com.au/~firstpr/crypto/#PKAF>> (on file with *The American University Law Review*) (providing tutorial on public key cryptography for encryption, discussing government regulation of cryptography, and compiling bibliography of cryptography references). For a discussion of the legal issues surrounding encryption, see *infra* Part V.

71. For more information regarding PGP, see *MIT Distribution Site for PGP* (visited Aug. 12, 1996) <<http://web.mit.edu/network/pgp.html>> (on file with *The American University Law Review*).

72. A. Michael Froomkin, *The Metaphor is the Key: Cryptography, the Clipper Chip, and the Constitution*, 143 U. PA. L. REV. 709, 893 (1995) ("At the current state of the art . . . the logarithmic computation would take a powerful computer a quintillion (a billion billion) years") (citation omitted).

73. See *supra* note 42 and accompanying text (describing Telnet).

74. See *supra* note 41 and accompanying text (describing ftp).

How do you refer to a specific Internet site? That's the URL or uniform resource locator.<sup>75</sup> You see URLs cropping up in our popular culture all the time. Even the *Washington Post* Food Section<sup>76</sup> gives the URLs of Web sites for different restaurants around town.<sup>77</sup> In the registration materials you received for this Conference, there was the URL for the Web page announcing this seminar.<sup>78</sup> An example of a different kind of URL is my own e-mail address. To send me a message, you type, "John\_Kuttler@notes.pw.com".<sup>79</sup> These are fairly typical. I am sure that most of the business cards you are exchanging with people these days have your Internet addresses on them. Another example is the site for the Legal List.<sup>80</sup> It's a very nice, complete resource for information of interest to lawyers.

How many of you, when you received the promotional materials, actually went to the Web page to check out the seminar? A few? So Web pages are a new way of marketing and announcing seminars. They are not wholly going to replace receiving a nice brochure in the mail, but they are certainly a means of receiving more detail.

There is one point I really want to emphasize with the Internet. Because no one maintains it or centrally administers it, things can get out of date and things can move. Information you researched and relied on one week will not be there another week.<sup>81</sup>

---

75. See *supra* note 23 and accompanying text (defining URL).

76. See *Washington Post, Restaurant Guide* (visited Jan. 21, 1997) <<http://www.washingtonpost.com/wp-srv/searches/restrant.htm>> (on file with *The American University Law Review*).

77. See, e.g., *Au Bon Pain* (visited Jan. 20, 1997) <<http://www.boston.com/aubonpain>> (on file with *The American University Law Review*); *Clyde's Restaurants Homepage* (last modified June 21, 1996) <<http://www.digitalcity.com/clydes/home.htm>> (on file with *The American University Law Review*); *Houston's Restaurants* (visited Jan. 20, 1997) <<http://www.houstons.com>> (on file with *The American University Law Review*).

78. See *The Development and Practice of Law in the Age of the Internet* (last modified Apr. 12, 1996) <<http://www.wcl.american.edu/pub/other/wcl-internet-con.html>> (on file with *The American University Law Review*).

79. "John\_Kuttler" represents the username; "notes" refers to Lotus Notes which is connected to Price Waterhouse's Internet gateway; "notes.pw.com" is the domain name, which is an integral part of a URL.

80. See Lawyers Cooperative Publishing, *The Legal List* (visited Feb. 15, 1997) <<http://www.lcp.com/The-Legal-List/TLL-home.html>> (on file with *The American University Law Review*).

81. *The American University Law Review* has supplemented the *Bluebook* citation to Internet sources because of the transient nature of the medium. See THE HARVARD LAW REVIEW ASSOCIATION, A UNIFORM SYSTEM OF CITATION 124 (16th ed. 1996) (setting forth citation format for Internet sources which includes author, title or top level heading, URL, and date of publication, modification, or visitation). *The Law Review* retains file copies of all Internet sources so that readers may obtain sources that may have been online at the time an article was published, but that may no longer be available at a future date. All Internet cites are easily accessible through the online version of this Conference available at <<http://www.wcl.american.edu/pub/journals/lawrev/internet.htm>>.



How do attorneys use the Internet? Not surprisingly, they make good use of the e-mail portion, as we saw with Ms. Shiels' statistics.<sup>82</sup> Law firms have for many years established direct e-mail connections with their institutional clients, and those connections have a lot of potential advantages. The Internet is, however, the lowest common denominator in terms of setting up an e-mail connection. You can set up somewhat richer connections using a gateway. A gateway is the front door to a network. It can connect one network to another network or a network to the Internet. It thus acts as the port through which data initially enters a network. For example, if you're a law firm using cc:Mail,<sup>83</sup> and your client uses cc:Mail or Notes,<sup>84</sup> the type of mail you send back and forth can include "rich text," meaning fonts, colors, and graphics. But, if e-mail simply goes through the Internet, barring the use of special software, it is going to come out as just plain text. You also get an added measure of security by setting up gateway connections because they are private networks as opposed to the Internet, which is a very public forum. If you have information that you want to keep secret, and you send it over the Internet, there is at least some risk—the risk may be overstated—that someone could intercept your message and do damaging things with it.

The disadvantage of going the gateway route is that you have to call someone in MIS to establish the private e-mail connection, and it may take some time. The advantage of the Internet connection is that just by having a person's URL or e-mail address, which usually is available on a business card, you can start a dialogue or send messages and documents to your clients without any action on the part of MIS.

Some attorneys use the Internet for legal research. I would not say that it is a full-blown replacement for LEXIS or Westlaw because those systems are very complete and very organized. Someone is administering those systems. The Internet is much more wild and woolly. I mean, you undoubtedly will find useful information out there, but nobody is really chartered with maintaining it or making sure that it is available all the time. Nobody is giving all the cross-references and doing cite checking that occurs on those other services. The Internet,

---

82. See *supra* Part I, at 330 (stating that 68% of large firms that responded to Chicago-Kent survey provide Internet e-mail to their attorneys' desktops).

83. See Lotus, *Welcome to cc:Mail* (visited Jan. 21, 1997) <<http://www.ccmil.com>> (on file with *The American University Law Review*).

84. See Lotus, *Lotus Notes Products* (last modified Dec. 24, 1996) <<http://www.lotus.com/comms/notes.htm>> (on file with *The American University Law Review*). Lotus Notes and cc:Mail are e-mail computer programs that allow users to electronically send and receive documents. See *id.*

therefore, is not a replacement for LEXIS or Westlaw. First, the information that you receive is incomplete and can be difficult to find. Second, information providers can be undependable; what was there one week could be gone the next. Third, my clients often wrestle with the question of whether lawyers should spend their time navigating the Web, or whether locating information on the Web is better left to the people in the library, who are more expert at knowing which forum is the right one to check and who can conduct the research at a lower billing rate. I do not dispute that getting Web access and usage up is a good thing, and I think attorneys should do some of their own Web research. There are just complicated issues that law firm administrators and lawyers are wrestling with. Nonetheless, you will find some good information out there. I have found that the Internet is an excellent source of information regarding the federal government.<sup>85</sup> It is very easy to criticize the federal government, but one area in which they have excelled is making information available out on the Internet.

The Internet is also a good source for international information.<sup>86</sup> For those of you who have corporate clients that are establishing a presence on the Web, being familiar with their homepage and the information they make available on it is a good way to keep tabs on your clients or even to communicate with them. Certainly, firms are hoping to gain some marketing advantages by having a presence on the Web. As Ms. Shiel's statistics demonstrated, 19% of the large firms that responded to her survey have home pages.<sup>87</sup> I think a much greater percentage probably have them under construction.

---

85. See *The Federal Web Locator* (last modified Sept. 9, 1996) <<http://www.law.vill.edu/Fed-Agency/fedwebloc.html>> (on file with *The American University Law Review*) (listing 74 government agency Web sites).

86. See, e.g., *International Lawyers Co.* (visited Jan. 21, 1997) <<http://www.lawlistil.com>> (on file with *The American University Law Review*); *Pace University School of Law Institute of International Commercial Law* (last modified Sept. 1996) <<http://cisgw3.law.pace.edu>> (on file with *The American University Law Review*); *International Court of Justice Homepage* (visited Jan. 21, 1997) <<http://www.law.cornell.edu/icj>> (on file with *The American University Law Review*).

87. See *supra* Part I, at 334.

Finally, some attorneys are using intranets.<sup>88</sup> Intranets are receiving a lot of media attention. You may be reading about it in the *Wall Street Journal*<sup>89</sup> or in *Business Week*.<sup>90</sup> Intranets use Internet technology, such as the Web browser, e-mail, and other technologies I have discussed, internally within a firm or organization. The law firms that are using intranets are trying to achieve the benefits of collaboration and shared discussion that you might find when using a groupware tool like Lotus Notes.<sup>91</sup> By setting up these intranets, they are achieving the same results as the groupware tools, but with more industry standard and less expensive technology.<sup>92</sup> Lotus Notes is still more functional than an intranet, but intranet tools are getting added all the time, and I think they will become a very effective alternative to groupware packages.

What are attorneys using intranets for? They are setting up discussion forums. I have seen a law firm use intranets for litigation support. They were indexing their deposition transcripts and making them available through these intranets. They were taking key discovery documents, imaging them, and making the images and the coded text available on these intranets. They were really taking a little bit of a different spin on your classic litigation support tools and using intranet tools to make the information widely accessible throughout their firm.

My last point focuses on marketing. There are two elements of marketing. First, there is intrusive advertising, and that's generally not recommended. Most of you probably have read about the Green Card Incident. It involved two Arizona Green Card lawyers who were advertising their immigration services to nearly all of the Usenet

---

88. "Intranets are private Web-based networks, usually within a corporation's firewalls, that connect employees and business partners to vital corporate information." Mary E. Thyfault, *The Intranet Rolls In*, INFO. WK., ¶ 4 (Jan. 29, 1996) <<http://techweb.cmp.com/iw/564/64iuint.htm>> (on file with *The American University Law Review*). Many companies, after seeing the Web's success with information retrieval and the promotion of company products and services, are creating intranets. See Amy Cortese, *Here Comes the Intranet*, BUS. WK., Feb. 26, 1996, at 76. Through the construction of firewalls, see *supra* note 22 and accompanying text, these companies are using Web technology for an inexpensive and powerful means of internal communications. See *id.* Intranets also allow employees to use the Net, while at the same time block unauthorized users from entering the intranet. See *id.*

89. See Bill Richards, *Selling in Cyberspace: Inside Story*, WALL ST. J., June 17, 1996, at R23; Bart Ziegler, *The "Intranet"*, WALL ST. J., Nov. 7, 1995, at A1.

90. See Paul M. Eng, *Now, An Intranet in a Box*, BUS. WK., Mar. 18, 1996, at 112; Cortese, *supra* note 88, at 76.

91. See Lotus, *supra* note 84.

92. See Cortese, *supra* note 88 (stating that Web is inexpensive alternative to other forms of internal communication).

groups.<sup>93</sup> I do not know how many millions of people actually were forced to read this material while checking their newsgroups. This type of advertising or marketing actually has a slang term: "spamming,"<sup>94</sup> and it violates "netiquette," which is the unwritten, unenforceable code of the Internet.<sup>95</sup> One of netiquette's tenets is that you just don't send your unsolicited materials to everyone.<sup>96</sup> Needless to say, the Green Card lawyers' conduct made lots of people angry. They eventually were kicked off their Internet provider, but they just moved on to the next one. Spamming probably is not the recommended course of action.

A more subtle or nonintrusive way of marketing is simply to have your firm set up a home page that makes available a lawyer directory, descriptions of services, and any newsletters or articles your lawyers have written.<sup>97</sup> Content is key. The way you'll distinguish your firm from another firm is by the home page's intellectual content, not its flashiness. The main thing is that setting up these home pages is not incredibly expensive. I think there is a mentality out there of, "Well, you know, if it only costs us \$50 a month to maintain this presence on the Web, and a little bit of investment time thinking about the content, we'll go ahead and do it because all the other firms down the street are doing it."

The other way you can market yourself is to monitor the relevant newsgroups<sup>98</sup> and occasionally contribute comments. You never know what may result. You do have to walk the fine line, however, between simply participating in a discussion and giving legal advice. But making some thoughtful comments may catch someone's eye and may lead to some business opportunities. I do not try to over-sell the

---

93. See ALLISON, *supra* note 22, at 40-43 (stating that Green Card lawyers posted off-topic advertisements for legal services to several thousand Internet newsgroups and were unrepentant for this violation of Internet's "leave-me-alone" ethic); Philip Elmer-Dewitt, *Battle for the Soul of the Internet*, TIME, July 25, 1994 (describing how an Arizona law firm used the Internet to send unsolicited e-mail advertisement to millions of computer users).

94. "Spam" is unsolicited advertisements that are broadcast to hundreds or thousands of discussion groups, listservs, or individual e-mail accounts at one time. See ALLISON, *supra* note 22, at 338.

95. See Jerry Hoover, *User Guide to Netiquette* (last modified Mar. 28, 1996) <<http://www.pepperdine.edu/ir/UserServices/helpdesk/userguide/netiquet.html>> (on file with *The American University Law Review*) (defining netiquette as "set of informal guidelines that should be followed by everyone who electronically communicates or shares computer resources with other people").

96. See ALLISON, *supra* note 22, at 141 (positing that sending "unsolicited advertisements, solicitations, or notifications" to people's individual e-mail addresses violates fundamental netiquette principle).

97. See, e.g., Gordon & Gluckson P.C. (last modified Jan. 20, 1997) <<http://www.ggtech.com>> (on file with *The American University Law Review*); Venable Homepage (last modified Jan. 11, 1997) <<http://www.venable.com>> (on file with *The American University Law Review*).

98. See *supra* note 43-44 and accompanying text (discussing newsgroups).

marketing elements of the World Wide Web, but I have heard of a few instances in which the Web has led to some business for some firms.

Just to wrap up, if you are wondering how to get started on the Web, there are a number of options. You can have a shell account<sup>99</sup> or a PPP account.<sup>100</sup> If you buy Windows 95,<sup>101</sup> the Microsoft<sup>102</sup> network comes bundled with a PPP account with which you can access the Internet. Most of the online service providers, America Online,<sup>103</sup> CompuServe,<sup>104</sup> and Prodigy,<sup>105</sup> offer some level of Web access. If you have been reading the *Washington Post* business section,<sup>106</sup> you'll see that Erol's<sup>107</sup> is back.<sup>108</sup> But, Erol's isn't selling VCRs and TVs; it now is an Internet service provider.<sup>109</sup> And from the looks of the pricing, it seems to be a fairly cost-effective one. As for other online services there is Counsel Connect, which is targeted specifically to lawyers.

(Applause)

---

99. A user with a shell account uses a modem and standard phone line to dial into the Internet service provider's Internet-connected host computer. See ALLISON, *supra* note 22, at 103-04. The vendor's software acts as the shell on which the user has an account. See *id.* Through this account, the user is connected to the Internet and is able to log onto other host computers. See *id.*; see also *id.* at 104-05 (commenting on advantages and disadvantages of shell accounts).

100. A user with a Point-to-Point Protocol ("PPP") or a Serial Line Internet Protocol ("SLIP") account installs networking software on his computer that makes his computer compatible with the networking software that is used on the Internet. See *id.* at 105. The user then connects his computer to the vendor's Internet-connected routers, using the newly installed software. See *id.* The vendor's routers connect the user directly to the Internet, and the user's computer becomes a part of the Internet during the user's session. See *id.* (commenting on advantages and disadvantages of PPP/SLIP accounts).

101. See Microsoft, *Welcome to Microsoft Windows 95* (visited Jan. 21, 1997) <<http://www.microsoft.com/windows95/default.asp>> (on file with *The American University Law Review*).

102. See Microsoft, *Welcome to Microsoft* (last modified Jan. 20, 1997) <<http://www.microsoft.com>> (on file with *The American University Law Review*).

103. See AOL, *supra* note 16.

104. See CompuServe, *supra* note 15.

105. See Prodigy, *Internet Main Page* (visited Jan. 21, 1997) <<http://www.prodigy.com>> (on file with *The American University Law Review*).

106. See *Washington Post, Business* (visited Jan. 21, 1997) <<http://www.washingtonpost.com/wp-srv/business/front.htm>> (on file with *The American University Law Review*).

107. See Erol's, *About Erol's* (last modified July 28, 1996) <<http://www.erols.com/erolspgs/erol.htm>> (on file with *The American University Law Review*).

108. See Kara Swisher, *Surviving in the Land of the Giants; Internet Access Start-Ups Say New Services Will Keep Them Competitive*, WASH. POST, Mar. 18, 1996, at F5 [hereinafter Swisher, *Surviving*]; Kara Swisher, *At&T's Cyber Shadow; Its Entry Presents Consumers with a World of Access Options*, WASH. POST, Mar. 2, 1996, at H1.

109. See Swisher, *Surviving*, *supra* note 108, at F5 (detailing manner in which Erol's went from being video rental store to being massive Internet service provider).

*B. Concerns Regarding Attorney Use of the Internet*

MR. HELLMANN: Good morning.

First, I want to thank my sponsors. I would like to thank American University, and particularly Washington College of Law, for inviting me. I want to thank my partners and my firm for letting me prepare for and make these presentations. And, I want to thank all of the new, young lawyers who are coming into the practice and with whom I do not have to say, "Computers are a good idea, aren't they? And word processing has immense potential."

(Laughter)

Today I hope to accomplish two things. We will spend a little bit of time talking about bits and bytes, some of the technical aspects of the system, but only from a legal perspective—only as I believe it affects the practice of law. Lawyers are not dumb people. I know lots of technical people who think we may be, but we're not. I think that in the future, you will be able to train yourselves.

The second area is my concern with what actually is happening in the practice. Where is it going? Academically, this is an interesting time for anyone to give a speech. I once was told that in physics, if you get into a field early enough, just as it's forming, you can show great intellectual prowess just by asking the right questions. So what I get to do is to raise these questions, raise these concerns. I may have some answers for you; I may not.

Let us start out by considering the Internet connectivity of Asia. With the exception of North Korea and some of the Southern Pacific Rim, there is no connectivity in any way, shape, or form to the Internet. That may hold within it some political ramifications, especially when I see certain places like Iraq, Syria, Libya and Sudan that do not have Internet connections. I think that there are some interesting reasons why. It may have to do more with politics than with anything else.

But the world is connected, there is no question. And I would like you to keep this in mind every time you send a note to someone on e-mail, and to recognize that it could end up anywhere in the world. That is very real.

We will take a minute from the bit and byte discussion to talk about the Internet itself. There are two physical features of the Internet that define the environment for the lawyer, for the legal profession, and for those associated with the legal profession. First is

ARPAnet,<sup>110</sup> which was a Department of Defense project. There is a lot of history about ARPAnet.<sup>111</sup> Essentially, it was built to be a distribution system that would survive a nuclear attack.<sup>112</sup> This meant that at any given moment, some part of the system, or some part of a message, could evaporate, literally be vaporized into space, and the rest of the system would continue to function.<sup>113</sup> That means there is no central core of the Internet, not only in governance, not only in finding things out, but as a physical system itself. The Internet is not some large monolithic thing. Essentially, it is a network of networks.

The second defining feature of the Internet is what I like to call computer Esperanto. How do we get all of these computers to talk to each other? The answer is to take the information that was being sent and to wrap it in a little envelope, or a packet. If you were sending your kid to camp or to school, that packet would have all of the things they need on their first day. You would have their names sewn into everything; you would have included washing instructions that came from the manufacturer; etc. These packets were a major concept because all of these things concern ownership: whose it is; where it is going; how it is getting there. Think of the packets as processors or computers that are in remote locations. Starting with the host, what you see is packets being sent along a line. But, these packets don't travel like a little centipede going along the twig of a tree. These packets are not necessarily sent sequentially; they are not necessarily sent together; and they will not necessarily take the same route.

---

110. See *supra* notes 37-38 and accompanying text (detailing Internet's rise from ARPAnet).

111. See, e.g., ALLISON, *supra* note 22, at 31 (describing ARPAnet as U.S. Defense Department network that was forerunner of Internet); KROL, *supra* note 10, at 14-16 (discussing ARPAnet's history); Christopher Anderson, *The Accidental Superhighway*, THE ECONOMIST, July 1, 1995, at 7 (outlining rise of Internet's use from limited government communications system to its present predominance in computer communication). See generally PETER SALVS, CASTING THE NET: FROM ARPANET TO INTERNET AND BEYOND (1995) (discussing growth of the Internet from a Department of Defense project to a modern staple of mass communication).

112. See KROL, *supra* note 10, at 14. The Internet, which was born of ARPAnet nearly three decades ago, "was an experimental network designed to support military research . . . about how to build [computer] networks that could withstand partial outages (like bomb attacks) and still function. . . . The network itself is assumed to be unreliable; any portion of the network could disappear at any moment." *Id.*

113. Because the Internet grew from a Defense Department project, the network could survive even if part of it were destroyed in a nuclear attack. See ALLISON, *supra* note 22, at 31. "The resulting technology is a network protocol that constantly tries to deliver packets of information from the source computer to the destination computer—automatically bouncing from node to node, looking for whatever route might reach the destination." *Id.* This packet-switched network technology can withstand the partial destruction of the network because when packets encounter parts of the network that are destroyed, the packets simply find the next available route and take it. See Anderson, *supra* note 111, at 6-7.

Those of you who send things through the Internet are saying, "Whew," right? "That significantly reduced the population of people who can intercept my message, or part of it, online." We will talk about security in a little bit, but essentially, it is not an easy task to try to grab something midstream. It is the same problem a shark has going after a school of fish. The shark may have its eye on one particular fish. But the odds are that the fish that is nearest is the one that will get caught. It is this kind of schooling effect.

Now, I would like you to take a look at what is going on in terms of traffic on the Internet—the percentage of total traffic by bytes, how these things are travelling. The point I would like to get across is, it is not just e-mail messages passing through the Internet. Files are being transferred. Let me tell you what that means. I will use intellectual property because that is what I do every day for a living. I will apply this to other areas, and I am sure you can see the connections I will make.

If you have a document that belongs to your client, whether that client is a corporation, if you are in-house counsel, the government, a department of the government, or a private client, if something gets loose on the Internet, the dogs are out. The horses have left the barn. Whatever you want to say; it has happened.

I have had a situation that has happened to me more than once now in which an academic had been given a book electronically. The book was some sort of research tool or dictionary. Someone pilfered the file from him, and the entire book ended up on the Internet and was being distributed not only from the United States, Europe, and Asia, but also was being distributed from anonymous servers in Finland. That means that it is a very difficult and daunting task to track down who stole the books. It can be done if you have the resources; if the National Security Agency wants to find you, for example, they will find you. But, short of those kind of resources, and for the everyday practice of law, those books are gone.

Now what am I supposed to do for a client like that? Who am I going to sue? That brings me to another issue with the Internet—demographics. Who is on the Internet? What are they doing? The Internet is not all what I would call interactive billboards. People are coming to the Internet in droves.<sup>114</sup> Looking at just the raw traffic going over the Internet, it is clear that the Internet is

---

114. See ALLISON, *supra* note 22, at 174-75 (stating that as of Jan. 1, 1995, there were 4,825,000 host computers directly connected to Internet and that each host computer "may have thousands or even millions of users"); *supra* note 12 (setting forth estimates regarding number of Internet users and indicating that estimates vary).



becoming, if you will, the preferred way for certain companies to deal with each other. I like to draw an analogy between the Internet and the telephone system. I think that for those people who do not really want to know how every electron is flying around, it still is important to be aware of these issues because we will have to address them as lawyers. If cyberspace really is a mirror of reality, then the same legal problems that exist in the real world, criminal, civil, quasi-criminal, contract will exist in cyberspace, and they will be amplified.

I would like to talk, for a minute, about e-mail from the legal perspective. Let us look at all of the advantages of e-mail in a legal sense. I read a study that said that by January 1, 1996, two-thirds of all business communications will be taking place by e-mail.<sup>115</sup> That means that your clients are out there doing things at a very rapid speed. They are exchanging information very quickly. My concern is how lawyers will inject themselves into this loop of information in order to maintain the ability not to control the contract as it is being formed, but to render the same service. You do not have the original twenty-four, or sometimes forty-eight, hours that it takes an envelope to travel and to get unpacked at its destination. For instance, if the senior vice president e-mails a VP in another company and says "Done deal," how do you, as a lawyer, fit into that picture? These things are happening so quickly it becomes a problem to manage the information.

We will talk later about discovery. It is very difficult to talk about the Internet and about the practice of law in nice, little, water-tight compartments. So I hope you will indulge me in a more holistic approach because these things feed on each other. If the study to which I referred earlier is correct regarding how much business is being transmitted digitally, you no longer are seeing two-thirds of the information that is part of the underlying transaction—that would be part of the case. Is it trouble? Oh, boy, is it trouble. The fact is that all of these messages are going back and forth, and you, the attorney, are not seeing them. You have to see these things, either on a screen or on hard copy.

Moreover, clients have a perceived notion of privacy that is an illusion on the Internet. I don't know if Ollie North still is giving talks around the country, but one of the talks I would like to have him give is the discovery of e-mail in an investigation.<sup>116</sup> It is true

---

115. Cf. Robert L. Blackberg, *Technology Investment in Today's Rapidly Changing Legal Market*, N.Y. L.J., Feb. 20, 1996, at 5 (noting goal of expansion as two-thirds).

116. See Charles A. Lovell & Roger W. Holmes, *The Dangers of E-Mail: The Need for Electronic Data Retention Policies*, R.I. B.J., Dec. 1995, 7, 9 (discussing likelihood of discovery of back-up e-

that information resides on a hard disk. If you erase the hard disk just through the operating system, you may not have erased anything at all. There are things called shadow data, where even if it's been erased, it still may be out there.

I frequently have to work with inventors and other creative people in copyright, trademark, and trade secrets. When they work for someone, they keep what are called desk files. Programmers and engineers do this, too. Do you know what that means? It means that they have kept a copy of everything that ever has been sent—they are pack rats. So there may be 1100 people that have all the information you think does not exist.

Let us talk about the ramifications of all this information going back and forth. Let us talk about newsgroups.<sup>117</sup> AltaVista,<sup>118</sup> a recently developed search engine, not only has indexed most of the text from the World Wide Web,<sup>119</sup> but it also allows the user to get Usenet<sup>120</sup> with the click of a button. For those of you who are familiar with America Online,<sup>121</sup> CompuServe,<sup>122</sup> and the other proprietary systems, you know that there are chat rooms in which people discuss various issues.<sup>123</sup> With newsgroups, people exchange notes that are threaded as searchable bulletin boards. If I am representing someone in litigation for copyright infringement, and I get hit with the fact that my client was bragging, eighteen months earlier, in some newsgroup about how he had started his work by borrowing from Edgar Rice Burroughs' original manuscripts, that information can be found now.

The next issue, which is the one I should leave for the management folks, is how the relationships with clients and with other lawyers are changing rapidly. I have no concern whatsoever that my firm system, or any individual practitioner, is being connected directly to their clients. It really is terrific. You really become part of the client's system. It does not matter where you sit in the country or even in the world; you have a direct intellectual association with your clients. You

---

mail copies in specific context of Microsoft Corp.'s merger with Intuit, Inc.).

117. See *supra* notes 43-44 and accompanying text (discussing Usenet newsgroups).

118. See Digital Equipment Corp., *AltaVista Search: Main Page* (visited Feb. 15, 1997) <<http://www.altavista.digital.com>> (on file with *The American University Law Review*).

119. Paul Zarins, *Report of ASIL Program: What's Online in International Law*, THE AM. SOC'Y OF INT'L L., ASIL NEWSL. (Jan. 1996) (describing AltaVista as Web search device, developed by Digital Equipment Corporation, and differing from other Web search tools in that it searches both the titles and texts of Web pages).

120. See *supra* note 43 (discussing Usenet).

121. See AOL, *supra* note 16.

122. See CompuServe, *supra* note 15.

123. See *supra* note 17 (defining chat lines).

are working in a shirt-sleeve relationship with them. They can jot off a note; they do not have to sit down and write a formal letter. There are none of the inhibitions that existed before this connectivity.

Now I have another question: Do lawyers have an obligation to maintain the security of information if it is directly accessible by clients? Should your clients be allowed to see their raw bills? It is a naughty question. There are some serious ethical questions. I might be keeping track of time more than I intend to bill it. If the client has complete access to that, what are the problems? Ethics is another issue in these "virtual law firms." I am lucky in a way because most of my practice—I would guess about 90% of my practice—is in the federal courts. And I am licensed to practice in the federal courts, so long as I am licensed in the primary state and then brought into the various federal districts.

Let us turn to a different scenario. Let us say that the best franchise lawyers are in Chicago and they need to be teamed together with some of the best international lawyers to serve a common client's interest in Washington, London, Paris, Milan, Hong Kong, and Singapore. Who is practicing where? These are serious issues. Where can you practice law? What becomes the unauthorized practice of law?

What about just simple things, simple issues? The ABA model code prohibits what is euphemistically called "other practice issues."<sup>124</sup> So these are not hypothetical questions any longer. These are very real questions, and they are amplified by the speed of this system.

Let us take a moment here and talk about everybody's favorite scare: security. At one end of the communication there is a host, and on the other end there is another host. Then there is the "firewall router."<sup>125</sup> A router is a device, usually a computer of some sort, a server that allows people to come into the system. Think of it as the anteroom to the law firm, or the reception area of the Patent & Trademark Office ("PTO"), or the Department of Justice, or the Labor Department, where folks come in and they are screened. "Hi. Who are you here to see?" "No, the President doesn't live here," or whatever. That's the function of the firewall router. What is outside

---

124. See MODEL CODE OF PROFESSIONAL RESPONSIBILITY DR 3-101 (1980) (preventing lawyer from aiding non-lawyer in unauthorized practice of law and from practicing in jurisdiction where to do so would be in violation of regulations of profession in that jurisdiction); cf. MODEL RULES OF PROFESSIONAL CONDUCT Rule 5.5 cmt. (1983) (allowing lawyer to delegate responsibility to paraprofessionals so long as lawyers supervise delegated work and take responsibility for it).

125. See *supra* note 22 and accompanying text (defining "firewall"); *supra* notes 88-92 and accompanying text (demonstrating how firewalls are used to create intranets).

of the router is inside to your law firm. So you can think of that firewall as the reception area.

As we are on security issues, I would like to talk about the real practical problems about security. If someone is out to get your message, if someone really is zeroing in on you, I would not worry so much about them grabbing it from the Internet. I would be more worried about the sophisticated use of surveillance equipment that can hear keystrokes or key clicks, or that can sense the electrical field from them and can determine what key has been clicked, or that hear your conversations through solid walls. Some of the technology on TV and in movies is ridiculous; but some of it is real. That is a concern, if they have such equipment.

I will tell you that I am scared to death of the unethical, unprincipled person with a \$50 bill who is going to go visit our custodial staff. Everybody is concerned about these elaborate systems on the Net, but how many of you encrypt items that are on your computer that are not leaving it? No one. So let us say that I am coming to visit your offices. The custodial staff knows how to turn on a computer and how to use it. What I am saying is that the highest degree of vulnerability in security still is probably at both ends of the system—the system you use and the system you are sending it to. I highly recommend that you realize that security includes taking care of the physical environment around your computers, such as not leaving your network connections open so that anybody can sit down and use them when you are gone. Along the same lines, I highly recommend using encryption for what is only on your system as well as for what you are sending across the Net.

There is an excellent book about PGP, or "Pretty Good Privacy".<sup>126</sup> It contains a poignant story about the use of encryption just on the computer itself.<sup>127</sup> The author talks about a reporter who was investigating atrocities and human rights violations in Central America. The reporter visited witnesses and used his notebook computer to take histories, notes, etc., and he encrypted the information, using PGP, I assume.<sup>128</sup> Guess who wanted to see what was in those files before he left the country? We have all seen it in person or on TV or in a movie when the exit officials of the country grab the camera? Well, they grabbed the notebook computer.<sup>129</sup> But they could not read the reporter's notes because he had encrypted them.

---

126. SIMSON GARFINKEL, PGP: PRETTY GOOD PRIVACY (1994).

127. *See id.* at 4-7.

128. *See id.* 7.

129. *See id.* 1.

Had the exit officials seen these materials, I think the witnesses might have disappeared very quickly. So there are very compelling and legitimate uses of encryption. Are there bad uses of encryption? Yes, certainly there are. So why don't we move a little bit into encryption itself. I will tell you about two of the things that are changing.

A message in clear text that you want to keep secret is sent to an encryptor<sup>130</sup> and is encrypted. Many of you used to do this kind of thing in grade school. You would shift each letter over two spots in the alphabet, for example. So As become Cs; Cs become Es; and so forth. Or you had your decoder ring from your Ovaltine. I'm dating myself. But that is essentially what an encryption scheme is. And the key is really simple. The key is knowing that it really is two letters over, or it is "ig-pay atin-lay."

The encrypted message is wrapped in a little packet and is sent across the wires. Then the decryption machine that has the key, decrypts it, and then the original text arrives.

Everybody is recognizing that encryption is important, especially as commercial considerations go back and forth. So everybody also recognizes that there are bad people who have the same devices. They want to build this encryption into standard appliances. I think some of those appliances are computers. Others are computers in the guise of telephones, fax machines, etc.

And what happens is that it is a kind of a key that someone in the government has that can open up and can see your message. I have some problems with that because in the system that exists now, I, as the lawyer, know when my client has been compromised. I know who has seen what. But with this new system, in which the government can read my client's electronic messages, I am not as sure if my client has been compromised. I am not saying that there are conspiracies, but as a lawyer I get paranoid. And I would like to know who has seen my clients' communications and how easy it is for them to get to it. So what has been proposed are these private schemes. PGP is an industrial strength scheme.<sup>131</sup> I happen to use it. I am sure there

---

130. See SCHNEIER, *supra* note 70, at 1-2 (providing elementary explanation of cryptography); WHITTLE, *supra* note 70, at 2-9 (advancing reader's understanding of cryptography through tutorial).

131. See Phil Zimmerman, *Pretty Good Privacy Public Key Encryption for the Masses: User's Guide* (last modified Oct. 11, 1994) <[http://www.gibbon.com/ftp\\_pub/pgp/pgpdoct1.txt](http://www.gibbon.com/ftp_pub/pgp/pgpdoct1.txt)> (on file with *The American University Law Review*) (describing how PGP works, how it can be installed, and how to use it, providing troubleshooting tips, and highlighting legal issues surrounding PGP); *MIT Distribution Site for PGP (Pretty Good Privacy)* (last modified Sept. 4, 1996) <<http://web.mit.edu/network/pgp.html>> (on file with *The American University Law Review*).

are other encryption schemes out there, and I'm sure there will be more coming online.

Now, there are two issues in cryptography that you need to take a look at. Why is cryptography important? It does two things that lawyers really want. First, it keeps the message secret. Have you ever sent the opposing side a letter that was supposed to go to your client? I did that about eighteen months out of law school. Ouch. I never did that again—until the fax machine came along. And guess what I did? I punched all these numbers—had a good time—and did the same thing. You can avoid that. You can avoid that in cyberspace if you encrypt your material, and the other side does not have the key. You can do this whether you are using a single key system<sup>132</sup> or a dual key system, such as PGP. But if you send a message that has not been encrypted—and if you think mistakes can happen fast with a fax machine, you should see what happens when you use e-mail with entire groups of nicknames. Your finger lets go of the mouse, and as you are staring at it, that progress bar is going: sent to opposing counsel, sent to opposing client, sent to Justice, and you are in a criminal situation—

(Laughter)

You have yourself a problem if none of it was encrypted. But if it was encrypted, what they get is a lot of garbage, and they say, "You sent me garbage. Was this intended for me?" Whew. "No. It's not your fault; I'm just stupid," you tell them. So, for that reason, if for nothing else, encryption is worth it, in my opinion.

There is a second very important and very practical reason to use encryption. And that is authentication. Signatures.<sup>133</sup> I am talking about Contracts 101. How do you authenticate an electronic document? There has been a lot of talk about digital signatures and digital cash. They are different subsets of what we are talking about right now. By having the message encrypted, knowing it is sent, and having the key, you know who sent the doggone thing. The piece of commercial software I use has a view-only feature. I can send a message to someone, and that person can only look at it on their monitor; they cannot copy the file.

All right. I want to get into changes in substantive areas of law. The system as we now know it is totally interoperable. Everything

---

132. See SCHNEIER, *supra* note 70, at 28-31 (explaining difference between single key and dual key cryptosystems).

133. See *id.* at 133-41 (discussing signing documents with digital signatures).

works with everything else. Everything gets sent everywhere. This is part of the problem.

I assume that all of you have used a Web browser by now—Netscape,<sup>134</sup> Web Explorer,<sup>135</sup> or Mosaic,<sup>136</sup> for example. It is easy to copy something, to link it, or to do what is called mirroring when you challenge the whole site. All of this is very easy. All of this information is flying around. Anybody can get this. Anybody can get materials—from the Government Printing Office, for instance.<sup>137</sup> I tell you this because if you are a government lawyer and some of the documents you rely on are on the Internet, you had better know what version the documents are before you discover that the rules from Labor, for example, were wrong.<sup>138</sup> Well, that raises questions.

Take a look at the CNN homepage.<sup>139</sup> What if you are searching the news and your client shows up in the news. Some of these news items appear on TV; some of them do not. So you may find information you should be aware of only on the Net. The PTO<sup>140</sup> and the Internet Law Library for the House of Representatives<sup>141</sup> both are online. If you take a look at their graphics and text, and make use of their hypertext links,<sup>142</sup> you have marvelous opportunities. Anybody can use any of this information at anytime. This information is all over.

Could you rely on it for final versions? No. But no practicing lawyer does that. I mean, you know what research tools are more reliable. You know what is more up-to-date. The Internet is a good place to start, and it is a good place to finish. But it depends on what

---

134. See Netscape Communications Corp., *supra* note 62.

135. See IBM Web Explorer, *Homepage* (last modified Dec. 13, 1996) <<http://www.raleigh.ibm.com/WebExplorer>> (on file with *The American University Law Review*) (discussing Web Explorer, IBM's Web browser for its OS/2 warp operating system).

136. See, NCSA, *Mosaic Home Page* (visited Jan. 21, 1997) <<http://www.ncsa.uiuc.edu/SDG/Software/Mosaic>> (on file with *The American University Law Review*).

137. See United States Government Printing Office, *Keeping America Informed* (visited Sept. 3, 1996) <[http://www.access.gpo.gov/sv\\_docs/](http://www.access.gpo.gov/sv_docs/)> (on file with *The American University Law Review*) (listing means of accessing government offices' printed documents).

138. See Department of Labor ("DOL"), *U.S. Department of Labor* (visited Feb. 17, 1997) <<http://www.dol.gov>> (on file with *The American University Law Review*) (making accessible Bureau of Labor statistics, Mine Safety and Health Administration Acts and information about the Occupational Safety and Health Administration).

139. See Cable News Network, Inc., *CNN Interactive* (visited Feb. 15, 1997) <<http://www.cnn.com>> (on file with *The American University Law Review*).

140. See *United States Patent and Trademark Office* (visited Feb. 15, 1997) <<http://www.uspto.gov>> (on file with *The American University Law Review*).

141. See *The U.S. House of Representatives Internet Law Library* (visited Feb. 15, 1997) <<http://law.house.gov>> (on file with *The American University Law Review*).

142. See ALLISON, *supra* note 22, at 148 (detailing how HTML coding creates hypertext links); *supra* note 64 and accompanying text (describing how hypertext links function).

precision you need. If you need an answer that goes eleven places to the right of the decimal point, rounding it off in your head is not the way to do it. It depends on the level of precision your needs demand.

Another issue I want to raise comes from an experience I had when I was working with a trial practice course with some federal district court judges in Chicago. At one point during the course, they all turned to me and said, "Who owns our decisions? Why aren't these decisions just being put on the Internet for people to take down and use?" The answer is very simple. What is the citation system that you are going to apply? It should be one that is independent of the word processor, shouldn't it? It should be one that is not bound to some particular proprietary book or system. And my suggestion is, and the ABA is studying this issue, that you should attach to each individual case a unique identifier: number, name, or both. Number the paragraphs as well. Then it doesn't matter what page the paragraph is on. Maybe simplicity works; maybe it doesn't.

Advertising lawyers—the Internet is going to be wonderful. Let me take a side trip about Web pages. If you are a firm, and you are going to put a Web page up, be careful. If it is just a brochure, fine. But tell people something. Make it unique. Contribute something to the greater body of knowledge. I know a corporate counsel who was looking for a techno-lawyer. The corporate counsel put up about five or six Web pages and used the e-mail to write to prospective attorneys. He never got an answer, and those people lost their credibility very quickly.

There are enormous problems in the areas of contract law. If we have not decided when a message is sent and we have not decided when a message is received, how do we decide when a contract is formed or where is it formed?

Does everybody remember the U.C.C.? The battle of the forms? It just went interactive.<sup>143</sup> For securities lawyers, there are places where you can find stock quotes.<sup>144</sup> But what happens if you get the wrong one because the system hiccups for thirty seconds and you trade on it?

---

143. See Legal Information Institute *Uniform Commercial Code—Articles 1-9* (visited Jan. 21, 1997) <<http://www.law.cornell.edu/ucc/ucc.table.html>> (on file with *The American University Law Review*).

144. See, e.g., *Stockmaster* (visited Sept. 15, 1996) <<http://www.dowjones.com/middleframe/business.html>> (on file with *The American University Law Review*) (listing stock quotes updated every hour on the hour).



Now, what can be stolen? Sounds, songs, everything from rock to chants. National Public Radio is on the Internet.<sup>145</sup> You can get animations; you can get video clips.<sup>146</sup> Think of all the lovely ways your clients are loose out there doing this.

I think the future is good in some respects, but I also think that there are fundamental questions we have to assess. I think that lawyers are very capable of answering these questions, and I think we have to find out how to address them properly in a commercial sense. (Applause)

### III. CONNECTING LAW STUDENTS AND LAWYERS THROUGH THE INTERNET AND ONLINE SERVICES

MS. KERLOW: Thank you very much. It is an honor to be here. I want to talk about how lawyers and law students can connect through the Internet and online services. This talk is directed primarily to law students. I will focus on a product that Counsel Connect<sup>147</sup> and American Lawyer Media have begun to roll out called Law Schools Online.<sup>148</sup>

In thinking about this topic, I realize that dramatic changes have taken place. When I was in law school, and when those before me were in law school, we studied law. We tried to seek out some practitioners. Maybe we had a job that allowed us to get a glimpse of the actual practice of law. We might, if we ventured into the library, have gotten a sense of the kinds of books put out by the court system that might relate to our practice or to the federal government. Our own law school had some publications, namely law reviews and other journals. But on the whole, we would work in a vacuum until that wonderful day called graduation came around. Then we could go into that big wide world of the legal profession if we chose to stay in it.

Today, most of you have discovered that there is another world called the Internet where you can get research and legal materials from universities all over the world. You can communicate with people who are all over the world, and many people who are in the

---

145. See National Public Radio Online, *Welcome to NPR* (visited Jan. 21, 1997) <<http://www.npr.org>> (on file with *The American University Law Review*). NPR is the world's first noncommercial, satellite-delivered radio system. See *id.*

146. See, e.g., *VIDEOCLIPS* (visited Jan. 21, 1997) <<http://cbn.luc.ac.bel-mail/54/video.html>> (on file with *The American University Law Review*) (containing videoclips of Belgian rock group "The Levellers").

147. See Counsel Connect, *supra* note 12.

148. See Law Schools Online, *Law Schools Online by Counsel Connect* (visited Jan. 4, 1997) <<http://lawschools.counsel.com/top.html>> (on file with *The American University Law Review*).

"real world." CompuServe,<sup>149</sup> LEXIS-NEXIS,<sup>150</sup> and Westlaw<sup>151</sup> already connect living, breathing communities of lawyers. Another wonderful and unique aspect of these products is that they are all rather organic. They are emerging; they are evolving; they are growing.

As you have seen so far, the Internet is an amazingly rich environment. The legal information there includes: law schools,<sup>152</sup> law reviews,<sup>153</sup> law firms,<sup>154</sup> courts,<sup>155</sup> the federal government,<sup>156</sup> and listservs.<sup>157</sup> Real opportunities that did not exist before now can connect you with practicing attorneys and government officials—people who can steer you in a direction.

I am going to focus on Law Schools Online. The purpose of Law Schools Online is to connect law students and faculty everywhere.

149. See CompuServe, *supra* note 15.

150. See LEXIS-NEXIS, *supra* note 1.

151. See West Publishing, *supra* note 2.

152. See, e.g., American University, Washington College of Law, *Washington College of Law* (visited Jan. 4, 1997) <<http://www.wcl.american.edu>> (on file with *The American University Law Review*); Georgetown University, *Georgetown University Law Center* (visited Jan. 4, 1997) <<http://www.ll.georgetown.edu/lc/>> (on file with *The American University Law Review*); Villanova University, *Villanova University School of Law* (visited Jan. 4, 1997) <<http://ming.law.vill.edu/vls>> (on file with *The American University Law Review*).

153. See, e.g., The American University Law Review, *The American University Law Review* (last modified Oct. 16, 1996) <<http://www.wcl.american.edu/pub/journals/lawrev/aulrhome.htm>> (on file with *The American University Law Review*); Cornell Law Review, *Cornell Law Review Page* (visited Jan. 5, 1997) <<http://www.law.cornell.edu/clr/clr.htm>> (on file with *The American University Law Review*); Florida State University Law Review, *Florida State University Law Review* (visited Sept. 17, 1996) <<http://www.law.fsu.edu/lawreview>> (on file with *The American University Law Review*).

154. See Arent Fox Kintner Plotkin & Kahn, *Arent Fox Kintner Plotkin & Kahn Homepage* (visited July 30, 1996) <<http://www.arentfox.com>> (on file with *The American University Law Review*); R. Eric Anderson, Mayer, Brown & Platt Home Page (last modified Jan. 3, 1997) <<http://www.mayerbrown.com>> (on file with *The American University Law Review*).

155. See, e.g., United States Supreme Court, 1995-1996 (visited Sept. 15, 1996) <<http://www.law.cornell.edu/supct/justices/fullcourt.html>> (listing biographical information of current Supreme Court justices) (on file with *The American University Law Review*); Court TV Library, *The Supreme Court* (visited Sept. 15, 1996) <<http://www.courtstv.com/library/supreme>> (on file with *The American University Law Review*) (listing recent Supreme Court decisions with case briefs); Emory School of Law, *United States Court of Appeals, Fourth Circuit* (visited Jan. 5, 1997) <<http://www.law.emory.edu/4circuit>> (on file with *The American University Law Review*) (containing all Fourth Circuit opinions published since January 1995); North Carolina State Government News Service, *N.C. Supreme Court* (visited Jan. 5, 1997) <<http://www.nando.net/insider/supreme/supco.html>> (on file with *The American University Law Review*) (containing all opinions published since November 1994).

156. See, e.g., Federal Bureau of Investigation, *Federal Bureau of Investigation-Home Page* (visited Jan. 5, 1997) <<http://www.fbi.gov>> (on file with *The American University Law Review*) (containing status of ongoing FBI investigations and descriptions of famous cases); Office of the Comptroller of the Currency, *Office of the Comptroller of the Currency* (last modified Dec. 24, 1996) <<http://www.occ.treas.gov>> (on file with *The American University Law Review*) (describing work of OCC and linking to federal banking regulations and OCC decisions).

157. See *supra* note 51 and accompanying text (defining and describing listserv); *supra* notes 51-56 and accompanying text (setting forth legally oriented listservs).

Now, many of you probably never have heard of Law Schools Online, or have heard a little about it. You may have heard that the law review editors have it. LEXIS-NEXIS,<sup>158</sup> which originally began developing Law Schools Online, actually bundled this into a product called LEXIS-NEXIS Student Office. Anyone who wanted to get LEXIS-NEXIS Student Office got Law Schools Online. Also, as a promotional campaign, it was distributed to law reviews around the country at no charge. The product is about three or four months old, so it is just coming onto the market.

Let me tell you about Law Schools Online because now more and more law students actually are getting involved with it, and law professors are using it for their classes. Furthermore, special guests are coming online, so there is a direct tie-in to practicing attorneys.<sup>159</sup>

The major aspect of Law Schools Online is that it is an opportunity to network with peers and professors. You can create virtual classrooms and focus discussions. There are focus discussions for various classes in constitutional law, property law, or contract law. You can debate with your own or other professors and maybe even get some insights from people who have taught, or are teaching, your class at another school.

We have a student lounge and the infamous "Rodent."<sup>160</sup> Therefore, those who are going into private practice can get a sense of what it will entail, by venturing into the area sponsored by the Rodent.

There are also book tours and other special events. I did an online book tour regarding the book I wrote about Harvard Law School last year.<sup>161</sup> Law Schools Online also has information about legal jobs, so it is more of a service than the Internet, which you have to go out and wrestle like a wild buffalo. Here, we have culled the information. It is tailored toward law students, and it is more organized and less unruly than the Internet.

As far as legal jobs, there are interviewing workshops, resume writing workshops, job postings, and listings of placement agencies. There are people who can answer questions that you have regarding what it is like to do work at a certain firm; what it is like to work on

---

158. See LEXIS-NEXIS, *supra* note 1.

159. See, e.g., Law Schools Online, Excerpt from Judicial Law Clerks Forum (visited Jan. 5, 1997) <<http://lawschools.counsel.com/discuss.html>> (on file with *The American University Law Review*) (containing advice from current and former law clerks on obtaining federal judicial clerkships).

160. The "Rodent" is a column written anonymously about life inside law firms.

161. ELEANOR KERLOW, POISONED IVY: HOW EGOS, IDEOLOGY AND POWER POLITICS ALMOST RUINED HARVARD LAW SCHOOL (1994).

specific kinds of issues; what it is like to write a brief; what it is like to write a memo. You can also ask questions such as, "How do I establish points and authorities?" or "Does anyone have a good outline?" You no longer are confined to the folks in your class or your study group. With Law Schools Online, you are there to build on the collective knowledge of all the law students that are in this environment.

The library on Law Schools Online contains state bar admission requirements. In addition, there are manuals, outlines, law review articles, and foreign books, all online.

Law Schools Online and Counsel Connect have a Private function, which does not exist in other services and where you can create private workgroups. It basically is a closed listserv,<sup>162</sup> or a Lotus Notes<sup>163</sup> type workgroup, that creates, as more people use it, an online private area or group that is neither accessible nor visible to anyone else online. It is available only to the people who created the group and to the people who subscribed to it. It may sound a little foreign at this point, but it is an amazingly versatile and rich feature. It allows you to do many different things. For example, one application would be for study groups. If you are in a study group, you may have a weekly meeting to talk about what has been going on in your class, but when you go home, you might have some other ideas. With this feature, you could post something in your study group, saying that there is another issue that the group needs to understand better. You then can prepare an outline about that issue. It would be disseminated to everyone in your workgroup as quickly as an e-mail.

The other thing about an online service, or a commercial proprietary service, is that the information is not going through the Internet. Many lawyers who use Counsel Connect's "Private" function use it in the context of litigation and in dealings with clients.<sup>164</sup> It is a very secure way of electronic communication. Law review editors can use Private. It is a dynamic feature, and, as I mentioned, it has secure e-mail.

Finally, many online services, not just Counsel Connect and American Lawyer Media Products, have a direct link to the Internet. In our case, we have licensed Netscape.<sup>165</sup>

---

162. See *supra* note 51 and accompanying text (defining and describing listservs).

163. See Lotus, *supra* note 84.

164. "Private" is Counsel Connect's private conferencing feature.

165. See Netscape Communications Corp., *supra* note 62 (discussing Netscape World Wide Web browser software).

We can talk about online services as software, but really they are services. This is a service that has been in existence for only three years. It already has nearly 35,000 members worldwide and about 7000 people online in a given week, logging about 15,000 hours.

Lawyers in large firms, small firms, medium firms, solo practices, and companies of all sizes are going online to do very similar things that we now are providing through Law Schools Online.<sup>166</sup> For instance, attorneys can talk with their peers, consult experts, work in the private sphere, conduct research, access the Internet, develop business, and pursue leads. Just as law students want to network for jobs, lawyers want to develop contacts with potential clients.

There are also ways that lawyers can work and stay connected to their current clients through private applications. We have built an area called "Alumni" into Counsel Connect and Law Schools Online. It is a feature, or a department, that allows law students to connect with alumni from their schools and allows lawyers to connect with law students.

I recently saw a posting in Alumni in which an alumnus from the Washington College of Law's Class of 1992 was saying, "I've just come back to D.C. after being abroad, and I was wondering who else was still in the area." With Alumni, there is an automatic, built-in community networking vehicle. That is an area where I think tremendous developments will occur over the next few months. We are planning to develop it in order to bring in alumni associations and law review associations. Also, law schools themselves may use it to promote their activities.

Counsel Connect also has a law clerk's forum that is visible to all the students who use Law Schools Online. This enables them to read about what different people's experiences have been with certain judges.

There are discussion groups on both services. Some discussion groups on Law Schools Online allow law students to participate.<sup>167</sup>

You also can create a virtual mentor. It may sound silly, but people on Counsel Connect have created "virtual," and later, lasting relationships.

Finally, there are real employers, professors, and experts in certain areas of the law whom students could contact depending on the type of law they are interested in. So, all of a sudden, what law students

---

166. See Law Schools Online, *supra* note 148 (containing discussion groups on a variety of legal topics and linking to useful legal information).

167. See *id.* (containing discussion groups on such topics as current events, the New York Yankees, and the elections).

have started as college students with the Internet is directly applicable and is available in the law practice as well.

Finally, the big question is what is the future going to look like? Is everything going to move to the Internet? How are people going to make money on the Internet? Where is the privacy? Where is the security? What about trademarks, copyright, libel? Those are the issues that are being debated today.

What we see happening is basically the creation of a seamless link. Eventually, probably in the very near future, there will be direct links to the Internet so that if you want *The American University Law Review* article that may have appeared in the constitutional law area, you could just go right to it. That connection will create a seamless web between the Internet and the online services, so the distinction will become invisible over time.

#### IV. THE SHAPE OF THE INTERNET IN THE TWENTY-FIRST CENTURY

MR. BRUCE: I am happy to be here this afternoon, and I am also somewhat horrified. There are people among you today to whom I owe a great deal of my thinking. Some of them will be speaking to you in the later panels. I just want to remind those people that we are obligated to respect the prevailing intellectual property paradigm of the Internet, which is that the sincerest form of flattery is theft.

(Laughter)

Let me start by inverting the typical rules of engagement for public speakers by telling you what I am not going to tell you. The first thing I do not want to talk about today is the law of cyberspace, beyond the observation that new and different places always have given rise to new and different kinds of work for lawyers. I suspect that we could keep a pretty full roster of faculty, students, and practitioners occupied well into the twenty-fifth century, let alone the twenty-first century, just on the basis of the recently-passed Telecommunications Act.<sup>168</sup> We would not even have to deal with the various issues of privacy, free speech, and dispute resolution—all issues that the Internet is spawning very rapidly. Human beings are not yet well settled in cyberspace, and neither is the law.

The other thing I am not going to do is what I call the "Buck Rogers in the twenty-fifth century speech," something that the title of this presentation strongly echoes. There is a lot of that sort of speech going around these days. I do not want to spend your time and mine demonstrating a lot of flashy technology that we do not understand

---

168. See Communications Decency Act of 1996, 47 U.S.C.A. § 223 (West Supp. 1996).

very well. In general, I do not want to do what I always think of as the "flying car speech." When I was growing up, it seemed very obvious to everyone that we all were going to have flying cars by 1990. I have yet to see one, or picture phones either for that matter.

I do want to remark that the twenty-first century is only a very few short years away. We are not too far from the point at which the students walking through the doors of places like this will be members of the class of 2000. I have to say that this fact came as something of a relief to me when I prepared this speech today because it meant that I do not have to look too far into the future. So what I really would like to talk about are some of the things that are happening around us now; the very important seeds of overwhelming change that will occur during the next decade, the next twenty years, or maybe the next century.

Somewhat in the spirit of those flying cars and picture phones, though, I want to nod very quickly to two groups of technologies, because I know people will have heard about them and will have questions regarding them. The first group of technologies I want to touch on is the group that helps us access text. These are the wonderful software devices that, we are told, will act like intelligent agents and run around the Net and tell us everything we want to know. An awful lot has been said about these, but not a lot has been done. More to the point, there are very practical limits to what can be done with this technology, short of providing computers with the ability to parse and understand natural language.

Almost certainly, we are going to be seeing great strides in information retrieval. We almost equally certainly will not be able to walk up to a machine and say, "Tell me everything I want to know." What if we *could* do that? Would it be a good thing? The problem of handling information in the context of the Internet is less one of access than it is of exclusion. This idea implies expert judgment and editorial activity. There is considerable evidence that, even in a situation where automated solutions are available now, professionals who are trying to find their way through large bodies of text prefer to use edited path finders in which they know expert judgment has been used rather than "black-box" solutions, which do not offer explanations of how particular texts are selected or ranked.<sup>169</sup> In sum, although an awful lot of filtering technology is already with us

---

169. For example, a lawyer most certainly would prefer a treatise written by a known authority in the field to a search engine, however intelligently constructed, which does not explain the basis on which it is ranking its selections.

and something resembling agent technology soon will be with us, we will need more than a few editors and librarians to tame this expanding universe of information.

The second group of technologies that get the quick nod and brush-off are visual and simulation technologies. You undoubtedly are hearing a lot about hypermedia, pictures, sounds, animation, video, and virtual reality techniques. Although these certainly are the hot tickets du jour, the legal profession either is not ready for them, or is too ready for them, depending on how you look at it. The reason I say this is simple. Lawyers, professors, and students have, with very few exceptions, neglected anything but print as a means of conveying information—up until now. As yet we do not have the vocabulary to convey legal abstractions graphically on a blackboard with chalk, let alone on a computer with virtual reality. So, although multimedia technology will be valuable, I tend to downplay it a little bit. It is not to say that we should not be working in these areas. In fact, I have become interested in the possibility of visual interfaces for case law retrieval myself. But, at this point, it seems very much that the technologies are presenting us with solutions for which we do not yet have problems.

So much for what I am not going to talk about.

What I am going to talk about are two “*D* words.” There are a lot of places where the Internet already is providing us with the bewildering mix of problems and solutions that I believe to be the hallmark of a true revolution. My two *D* words represent two ways of conceptualizing this mix of problems and solutions.

The first of those is “disaggregation,” which is a catch-all term for what happens when distributed information systems, like the Internet, make it possible to divide functions that formerly were under one organizational or physical roof into clusters of related activities carried out by different actors. Put differently, in a seamlessly linked hypertext environment,<sup>170</sup> many different content providers can build pieces of a comprehensive collection—for example, the laws of one of fifty states in a multistate collection—and the pieces can be connected together to form entities that look like the monolithic collections we have now. The entities I want to talk about with respect to disaggregation are not law firms—although we have heard much about virtual law firms—but the people who create and publish the law that those lawyers work with.

---

170. See *supra* note 64 and accompanying text (describing hypertext linking technology); *supra* note 26 (describing computer language used to create hypertext links).



My second *D* word is "disintermediation." It sounds a lot nicer than "cutting out the informational middle man," but that is what it boils down to. Disintermediation is one of the Net's major side effects, but this is not the first time we have seen disintermediation in our lifetime. Its predecessors are found in the over-the-counter medicines that cut doctors and pharmacists out of the treatment process, direct dialing of telephone calls that cuts telephone operators out of the loop, and bank ATMs that cut bank tellers out of transactions. The Internet is, to some extent, an informational system that has the potential to cut out the middle man in several different ways at once.

Let us start with disaggregation. To disaggregate something implies that many people are doing what once was done by a single actor. For instance, the CD-ROM world is spawning an amazing number of niche publishers that can exist simply because their cost of publication is small. The incremental cost of publication is even smaller on the Net, and distributed hypertext technology, like the World Wide Web, gives any publisher the ability to build on top of the work of others, with or without their permission. The tendency toward niche publication on the Net is encouraged further by the demographics of the Net; of twenty million computer users on the global Internet, at least 100 will be interested in just about any subject a niche publisher cares to address. Many more niche publishers can survive in this environment because they not only can afford their own printing press, but they also can find an audience for what they have to say—even for something relatively narrow, such as the law of left-handed, red-headed architects, if you will.

Another characteristic of the disaggregated Net is that we are beginning to find different functionality coming from different sources. Four years ago, Villanova Professor Hank Perritt pointed out that a hypertext environment tends to unbundle the value chain that makes up publication.<sup>171</sup> In the world of print, an entity called a publisher takes material from an author and adds many forms of value to it. Professor Perritt did a very nice job of identifying ten types of value in four categories of processes in that chain.<sup>172</sup> He refers to the creation, organization, retrieval and assembly, and marketing processes.<sup>173</sup> I do not want to repeat his detailed analysis,

---

171. See Henry H. Perritt, Jr., *Electronic Records Management and Archives*, 53 U. PITT. L. REV. 963, 978 (1992) (considering electronic information system designed to ensure retention of archives traditionally stored as paper records and describing unbundling as process of breaking down information from earlier organizations and supplying separately to consumers).

172. See *id.* at 976.

173. See *id.* at 976-78 (discussing types of values added during organizing process including chunking and tagging, internal, and external pointers).

except to say that in the four intervening years, and particularly on the Web, we have seen exactly this sort of unbundling taking place, particularly as it applies to organizing value.<sup>174</sup> It is now commonplace for data to be organized or searched by someone other than its creator and by someone other than its publisher.

Search services, such as AltaVista,<sup>175</sup> Infoseek,<sup>176</sup> Lycos,<sup>177</sup> Yahoo,<sup>178</sup> or Excite,<sup>179</sup> allow data to be reorganized and people other than the author to search this data. A more complex example, and one that is of greater use to lawyers, is the Legal Information Institute's<sup>180</sup> construction of organizing searches in tables of contents atop an archive of Supreme Court decisions that actually exists at Case Western Reserve University.<sup>181</sup> The texts of the opinions themselves is stored on computers at Case Western. We have, with impunity, constructed tables of contents, topical indices, and other materials on our site at Cornell which merely *point* to those materials. The link between organizing material and the material being organized is a seamless one, constructed without an exchange of permissions. We have taken their material and have made it more presentable. We are a third-party value adder.

Once again, we see proliferation. Not only do we have an explosion of resources out there, but we also have an explosion of versions, levels of value added to resources, and matrices of content and treatment the cells of which can be occupied by organizations and individuals. Now, that is not all bad news. Because experts will have a tendency to publish their own materials in their own areas of specialty, the reader gets more value added. Additionally, it seems that the experts are enjoying a lot of the freedom that comes from

---

174. See generally *id.* at 978 (discussing various ways third parties use databases organized by variety of entities, particularly United States government databases).

175. See Digital Equipment Corp., *supra* note 118.

176. See Infoseek Corp., *Infoseek Guide* (visited July 29, 1996) <<http://guide.infoseek.com>> (on file with *The American University Law Review*).

177. See Lycos, Inc., *Lycos Home Page* (visited July 29, 1996) <<http://www.lycos.com>> (on file with *The American University Law Review*).

178. See Yahoo! Inc., *Yahoo! Home Page* (visited July 29, 1996) <<http://www.yahoo.com>> (on file with *The American University Law Review*).

179. See Excite Inc., *Excite Home Page* (visited July 29, 1996) <<http://www.excite.com>> (on file with *The American University Law Review*).

180. See Cornell Law School, *What is the Legal Information Institute?* (visited July 29, 1996) <<http://www.law.cornell.edu.lli.html>> (on file with *The American University Law Review*) (explaining that Tom Bruce and Peter Martin established Legal Information Institute ("LII") in July 1992 and describing LII's goal as electronic dissemination of legal documents, publications, and course supplements via Internet or floppy disk).

181. See Legal Information Institute, *Decisions of the U.S. Supreme Court* (visited July 29, 1995) <<http://www.law.cornell.edu/supct/supct.table.html>> (on file with *The American University Law Review*) (providing table of contents and pointing to site that contains text of decisions).

controlling their own distribution pipes, their own printing press. Over time, I think this will lead to narrower, but deeper, information resources and a lot more headaches in selecting and organizing them.

We have a new cast of characters showing up on the publishing scene. It is clear that the new niche publishers are not, and will not be, the same old guys doing the same old things. Some of them are official bodies that are offering their information directly to the public; others are acting through intermediaries, such as the circuit courts (which offer opinions through law schools like Villanova<sup>182</sup> and Georgetown).<sup>183</sup> Some are law firms offering services to clients in the form of newsletters and analyses of current cases.<sup>184</sup> Some are organizations who do not publish at all and who are not associated with the law, for instance trade associations,<sup>185</sup> advocacy groups,<sup>186</sup> software

---

182. See Villanova Center for Information Law and Policy, *United States Court of Appeals for the Third Circuit* (last modified Mar. 29, 1996) <<http://www.law.vill.edu/Fed-Ct/ca03.html>> (on file with *The American University Law Review*); Villanova Center for Information Law and Policy, *United States Court of Appeals for the Ninth Circuit* (last modified Jan. 5, 1996) <<http://www.law.vill.edu/Fed-Ct/ca09.html>> (on file with *The American University Law Review*).

183. See Edward Bennett Williams Law Library, *United States Court of Appeals for the Federal Circuit* (last modified Mar. 29, 1996) <<http://www.ll.georgetown.edu/cafed.html>> (on file with *The American University Law Review*); Edward Bennett Williams Law Library, *United States Court of Appeals for the District of Columbia Circuit* (last modified Mar. 29, 1996) <<http://www.ll.georgetown.edu/FED-Ct/cadc.html>> (on file with *The American University Law Review*).

184. See Steptoe & Johnson, L.L.P., *Welcome to Steptoe & Johnson LLP* (visited Feb. 17, 1997) <<http://www.steptoe.com/pubtoc.htm>> (on file with *The American University Law Review*) (offering memorandum on recent developments in law and advisories for specific clients); Venable Attorneys at Law, *Venable Homepage*, *supra* note 97 (posting firm's environmental law newsletter, articles on variety of topics including intellectual property litigation, privatization of federal information technology requirements, and rights of veterans, and discussion of two significant encryption export control cases).

185. See Alliance Pastorale, *The Alliance Pastorale Home Page* (visited July 29, 1996) <<http://www.alliancepastorale.fr/>> (on file with *The American University Law Review*) (providing information to members about sheep and goat industry); American Automobile Association, *AAA Home Page* (last modified June 7, 1996) <<http://www.aaa.com>> (on file with *The American University Law Review*) (providing travel information to members); Northwest Playwrights Guild, *Welcome to the Home Page of the Northwest Playwrights Guild!* (last modified Aug. 3, 1996) <<http://www.teleport.com/~bigscript/nwpg.htm>> (on file with *The American University Law Review*) (describing guild's mission, providing member news, scripts, competitions, and links to related sites); Wagga Wagga Handweavers and Spinners Guild, Inc., *Wagga Wagga Handweavers and Spinners Guild, Inc. Home Page* (visited Aug. 8, 1996) <<http://www.wagga.net.au/community/wwhsg/>> (on file with *The American University Law Review*) (including guild information such as mini workshops, monthly meetings, and availability of tutors).

186. See AIDS NYC (visited Feb. 15, 1997) <<http://www.aidsnyc.org/index.html>> (on file with *The American University Law Review*) (providing collection of linked pages to assist people with HIV or AIDS); Electronic Privacy Information Center ("EPIC"), *EPIC Home Page* (visited Aug. 6, 1996) <<http://www.epic.org>> (on file with *The American University Law Review*) (stating that EPIC was established "to protect privacy, the First Amendment, and constitutional values" and providing links to "hot topics" such as counterterrorism proposals, medical privacy, welfare reform, and encryption export controls); Mothers Against Drunk Driving ("MADD"), *MADD Home Page* (visited July 29, 1996) <<http://www.gran-net.com/madd/madd.html>> (on file with

companies,<sup>187</sup> and writers.<sup>188</sup> For example, a lot of the information surrounding Microsoft's 1995 antitrust case (including the briefs) was placed online by one of the computer trade papers.<sup>189</sup>

So a logical question to ask at this point is: What will be the relationship between all of these niche-publisher little guys and the big guys? First, I think that the Westlaws<sup>190</sup> and the LEXISes<sup>191</sup> of the world will continue to be the big guys. Lawyers value the comprehensiveness of such services and the value they add in the form of headnotes, key numbering, interim citation of slip opinions, etc., and will continue to pay large sums for it. But there will also be an important place for the little guys; in fact, big guys and little guys will come to enjoy a kind of symbiosis.

Now, let me suggest a number of fairly obvious possibilities for that relationship, all of which I suspect will exist simultaneously. First, we will see little guys as retailers of what the big guys wholesale. For instance, if the National Organization for Women<sup>192</sup> walks up to LEXIS and says, "We want to make the opinion in *Roe v. Wade*<sup>193</sup> available to the whole world for a year with your markup," I would suspect that eventually LEXIS will respond with a price quote.

Second, the little guys will compete with the big guys in narrow niches. That is starting to happen in specialist collections and in

---

*The American University Law Review*) (describing organization, listing services and programs, and providing information for prospective members).

187. See Apple Computers, Inc., *Welcome to Apple* (visited July 29, 1996) <<http://www.apple.com>> (on file with *The American University Law Review*) (describing latest developments and trends in Apple computers); Novell Corp., *Novell Education Home Page* (visited July 30, 1996) <<http://education.novell.com>> (on file with *The American University Law Review*) (providing product training and information).

188. See Matt Mower, *Protect Free Speech Rights for Racists* (visited Aug. 6, 1996) <<http://www.uh.edu/campus/cougar/vol61/145/op3.html>> (on file with *The American University Law Review*) (concluding that although some speech has negative impact, allowing government to censor such speech according to its content is more offensive than speech itself); Dana Pentoney et al., *The Right to Choose* (visited July 30, 1996) <<http://www.fred.net/nhhs/essays/abortion.htm>> (on file with *The American University Law Review*) (discussing current state of abortion law).

189. See Netsurfer Communications, Inc., *Microsoft and Antitrust* (visited July 30, 1996) <<http://www.netsurf.com/nsf/v01/02/local/msft.html>> (on file with *The American University Law Review*) (featuring lower court opinion, *United States v. Microsoft*, 159 F.R.D. 318, the Court of Appeals decision, 56 F.3d 1448 (D.C. Cir. 1995), and commentary surrounding legal dispute).

190. See West Publishing, *supra* note 2.

191. See LEXIS-NEXIS, *supra* note 1.

192. See National Organization for Women, *The National Organization for Women ("NOW") Home Page* (visited Jan. 2, 1997) <<http://www.now.org>> (on file with *The American University Law Review*).

193. Cf. *West Pub. Co. v. Mead Data Cent., Inc.* 616 F. Supp. 1571 (1985) (holding that Westlaw owns copyright page numbering and enjoining competitor from printing those page numbers).

areas that the big guys have not served well, for example, poverty law.<sup>194</sup>

The third possibility is that the little guys integrate with the big guys. Although integration could occur in a variety of ways, the most obvious scenario is when the large data providers maintain comprehensive general collections but direct the user to the specialty information that is offered by third parties. More interestingly, you can invert this scenario and imagine a different kind of big guy, one who provides organizing value for number of little guys. For instance, a third-party publisher might construct a treatise-like matrix of topical headings atop specialty collections of caselaw, or a large "name" publisher (a law review, for example) might thematically collect and present the self-published efforts of individual electronic authors.

What are the large-scale implications of all this? Cheaper information, more publishers, lots more competition, lower costs, and different actors as publishers. Again, you have to keep in mind that there are lots of people out there who have an interest in publishing legal information but who are not what we would think of currently as legal publishers—professional and trade organizations, journalists, advocacy groups, and even marketers. One of my favorite examples has been the notion of an imaginary safety equipment company, Safeco, that puts up a collection of OSHA regulations<sup>195</sup> as a marketing device.<sup>196</sup> For example, text on Safeco's home page might read: "Why do you need these marvelous Safeco steel-toed shoes? Because OSHA say so—right here, in this collection of regulations Safeco graciously has published."

There are implications for law firms as well. Among other things, there is no doubt that firms will be publishers. Some already put up newsletters and actual work product for distribution.<sup>197</sup> Finally, to

---

194. See, e.g., The Southern Poverty Law Center, *The Southern Poverty Law Center Home Page* (visited Aug. 6, 1996) <<http://www.well.com/user/mdcb/bastions/spic.html>> (on file with *The American University Law Review*) (setting forth Center's activities, which include providing legal aid to poor and fighting racism and hate crimes).

195. See United States Department of Labor Occupational Safety and Health Administration, *The USDOL OSHA Home Page* (visited Jan. 2, 1997) <<http://www.osha.gov>> (on file with *The American University Law Review*).

196. See, e.g., Archangel Corp., *Welcome to Archangel* (visited Feb. 15, 1997) <<http://www.archangelinc.com>> (on file with *The American University Law Review*) (providing guidelines, documentation, and text needed to comply with safety and health requirements).

197. See, e.g., Arent Fox Kintner Plotkin & Kahn, *supra* note 154 (offering various featured articles and publications prepared by firm attorneys); Lester & Associates, Ltd., *Law Memo 1: How to Register a Trademark* (visited July 30, 1996) <<http://www.mnlaw.com/article001.htm>> (on file with *The American University Law Review*) (providing introduction to process of obtaining trademark and suggesting that viewers contact firm for additional information); Steptoe & Johnson LLP, *Highlights of New Joint Stock Company Law of the Russian Federation* (visited Feb. 15, 1997) <<http://www.steptoe.com/cismem.htm>> (on file with *The American University Law Review*).

save the least surprising for last, there will be a lot more public access to law and legal information. In fact, we already have it, but we will see a lot more of it, with some rather important implications that come under the heading of the second D word.

I said disintermediation was the elimination of middle men. But who exactly are the middle men in this world? If you look around the legal universe, you see a number of people occupying that role. Publishers—I talked about them already—sit between the authors and the audience, on one hand, and the audience and the information, on the other. The second group of middle men is not a who but a what. Abstract information technologies or taxonomies are things we always have constructed to serve as an organizing intermediary between the large bulk of case law, statutes, and regulations, and us. We think of this bunch of products as being, vaguely, the work of librarians. Third, teachers stand squarely between students and information—sometimes, the students think, far too much so. Finally, lawyers themselves are an interface between clients and legal information.

Let us take them in order.

Under the present system, publishers are the principal adders of value. They derive a lot of power from their ability to control one or more of those types of value, particularly distribution. Under the Net regime, however, they no longer have that control, for they no longer control the distribution pipe. We are starting to see some examples of that erosion. For instance, students and teachers publish directly on the Net. Professor Bernard Hibbitts published an article on the Web that advocates completely abandoning the student-edited law review in favor of self-publication on the Web.<sup>198</sup> Although Professor Hibbitts does not seem terribly concerned about the fact that an awful lot more goes into law reviews than faculty articles, he does suggest other ways in which students might publish their writing. I believe that students will be very quick to adopt these methods because they amount to self-publication of work that employers will view favorably. It is only a matter of time before students discover that they can hang some work product out there where potential employers can see it. I suspect we are going to see a lot of that in the future.

---

(containing article explaining recently passed Russian Federation law).

198. See Bernard J. Hibbitts, *Last Writes? Re-assessing the Law Review in the Age of Cyberspace* (last modified June 4, 1996) <<http://www.law.pitt.edu/hibbitts/lastrev.htm>> (on file with *The American University Law Review*) (stating belief that transition from student-edited law reviews to self-publication by scholars is inevitable due to new technology currently available).

The second example we are seeing now is an obvious one; it is the direct release of judicial opinions, statutes, and regulations. Although there are plenty of instances, the most notable are the public distribution of circuit court opinions, coordinated by Villanova<sup>199</sup> and Georgetown,<sup>200</sup> and the distribution of EDGAR filings information by the Securities and Exchange Commission.<sup>201</sup> The direct release of documents by the courts and the agencies themselves without any intermediaries is a little more spotty, but it clearly is the wave of the future.

The question all of this raises is one of the future relationship between creators and publishers. The balance of power in that relationship always has favored the publisher, who controlled the distribution pipe. Insofar as they could shut off the channel between creator and audience, they could make or break content creators. In the new regime, however, I think the balance of power will shift back toward authors simply because publishers are losing control over distribution. There will be a need for branding and marketing value, which really only publishers can provide. But the overall balance of power will shift irrevocably.

On to taxonomies.

Print, as many people have pointed out, makes it a practical necessity that we build a relatively fixed, commonly referenced set of secondary sources that are arranged according to a taxonomy that has a common understanding among professionals. The diversity of print sources requires a set of finding aids, topically organized along subject-matter lines that correspond quite closely to the way in which a professional community "divides the world" of its professional activity. The Library of Congress' subject heading system is a good example of this type of print artifact. It is a comprehensive system, but it has serious drawbacks, the greatest of which is that it is so abstract that it satisfies almost no one, except perhaps library catalogers. It is not a people-oriented system. You do not walk up to it and say, "I'm a farmer. Where is the stuff for farmers?" You look under implements—agricultural—nineteenth century. I know very

---

199. See Villanova Center for Information Law and Policy, *United States Court of Appeals for the Third Circuit*, *supra* note 182; Villanova Center for Information Law and Policy, *United States Court of Appeals for the Ninth Circuit*, *supra* note 182.

200. See Edward Bennett Williams Law Library, *United States Court of Appeals for the Federal Circuit*, *supra* note 183; Edward Bennett Williams Law Library, *United States Court of Appeals for the District of Columbia Circuit*, *supra* note 183.

201. See United States Securities and Exchange Commission, *EDGAR Home Page* (visited July 30, 1996) <<http://www.sec.gov>> (on file with *The American University Law Review*) (containing all SEC filings 24 hours after they are filed).

few people who think of themselves as implements, dash, dash, agricultural, dash, dash, nineteenth century kinds of guys.

Electronic text, on the other hand, does not require a commonly understood classification system. For instance, by using the bookmarking features in a Web browser,<sup>202</sup> the user can construct his or her own information taxonomy very simply. You can mark those resources and organize them in any manner that you prefer. Although they are not very sophisticated features, they, along with things like PDQ<sup>203</sup> and ECLIPSE<sup>204</sup> searches, which serve a similar function in the major online services, offer everyone a way to build their own maps of professional terrain.

The real question, as Mr. Katsh has pointed out,<sup>205</sup> is whether, in constructing our own personal taxonomies at the expense of the more abstract but standardized ones, we are losing a common vocabulary about the business of lawyering. And as the traditional vocabulary erodes and becomes more personalized, how will we have a common identity as professionals? And more importantly, how will we define the borders of the profession?

Teachers—ah, teachers. In Peter Martin's "change-or-die speech," my colleague said this:

Less visible to law faculty members and increasingly invisible to students are new electronic offerings of those entities old and new that seek to profit from an understanding that law students, eager to find the shortest path to a good grade, will pay significant sums for products that offer summary, synopsis, straightforward exposition instead of challenging questions. Unless law schools succeed in transforming old patterns, the fully networked school will have a marginalized faculty.<sup>206</sup>

---

202. The "bookmark feature" automatically records a visited URL and allows the user to revisit the site in the future.

203. See Jim Burton, *Flow Charting PDQ* (visited Jan. 2, 1997) <<http://www.zdnet.com/pccomp/sneakpeeks/wbny0896/chart.html>> (on file with *The American University Law Review*) (describing Professional Diagrams Quickly ("PDQ") as software allowing rapid creation of complex flowcharts).

204. See Eclipse Technologies, Inc., *Eclipse Technologies* (visited Jan. 22, 1997) <<http://www.eclipse-technologies.com/>> (on file with *The American University Law Review*) (describing Eclipse Technologies data storage and retrieval products).

205. See generally M. ETHAN KATSH, *LAW IN A DIGITAL WORLD* (1995) (exploring nature of new information technologies and how they interact with learning and practicing law). Ethan Katsh also is a panelist in this Conference. See *infra* pp. 452-57.

206. Thomas R. Bruce, *Choreography for a Dancing Bear: The Web, Markets, and Strategies*, 4 *LAW TECHN. J.* 3 (Nov. 1995) <<http://www.law.warwick.ac.uk/publications/lj/v4n2/lj4-2b.html>> (citing Peter W. Martin, Opportunities for Research and Teaching Made Possible by New Technologies—Or Technology's Threats to Law and Law Schools as We Have Known Them, Address Before the American Association of Law Schools Mini-Workshop on Uses of Technology in Teaching and Research (Jan. 6, 1994)).



Within six months of that pronouncement, both Westlaw and LEXIS announced major new marketing initiatives aimed at law students. This is, of course, nothing new. These companies always have understood that the work habits formed in law schools persist through professional life. What is new is the extent to which the Internet makes law students accessible to them on a day-to-day basis via e-mail and Web browsers, and the extent to which law students could have access to products, such as electronic study aids and case books, offered independently of any approval or review by their faculty instructors, including commercial versions of something that I'm about to describe.

In the fall of 1996, for the first time, Cornell Law School will offer an intellectual property class in which the venue is electronic.<sup>207</sup> Students are drawn from four participating institutions in three time zones. Course materials and required readings will be distributed via a Web server. Interaction will take place via e-mail and video conference. The course being offered is one that would not otherwise have been available to students at their home institutions that are scattered across the United States. The institutions' financial arrangements show the professor as an adjunct. In this regime, what do words like "visiting faculty member," "of counsel," and "law firm" mean? How will the vocabulary change when you have technology that replaces time and distance in the way that this does?

One of the more interesting developments of the last few years has been Counsel Connect's<sup>208</sup> offering of "kibitzing rights" to law students,<sup>209</sup> a service that permits them to silently "sit in" on electronic discussions between practitioners. This has great appeal, because they are deeply, deeply curious about what real lawyers do and how they do it. Law schools, like a lot of professional schools, are hard put to offer programs that can fulfill or can compete with that fascination. Law schools also have been slightly more comfortable when they have been able to maintain some distance between their students and the profession. I do not think they will be able to do that in an environment where students have full-time electronic contact with those with whom they will be working in a few years. I

---

207. See Peter W. Martin, *Copyright Law and Digital Works Course Syllabus* (Cornell Law School, Fall 1996 & Spring 1997) (on file with *The American University Law Review*) (describing course's subject matter). During each of the semester's 14 weeks, the equivalent of two classes will be conducted via the Internet, and one class will be held via video conference. See *id.* Each of the four participating schools, Cornell, Chicago-Kent, Colorado, and Kansas, may enroll up to eight students. See *id.*

208. See Counsel Connect, *supra* note 12.

209. See *supra* Part III (describing Law Schools Online service for law students).

think we tend to be a little more aware of this in geographically-isolated Ithaca than here in Washington, where students have contact with a variety of employers at the end of a Metro ride.

Think about a few things that are facts of life for us up in Ithaca. Most of our students know which firm will employ them by the time they begin their third year of law school. Many of them know before they begin their second year. At the same time, two-thirds of the foreign students in our LLM program are sent here by foreign companies that pay their tuitions so they can learn American law. Now, how long do you suppose it will be before someone puts those two facts together and reinvents apprenticeship? It would be very easy for a firm to say, "Work for us during the school year. You can interact with us electronically, and we will pick up the cost of your tuition." The terms we presently use—terms like "internship" and "externship"—take their names from geographical phenomena that networks make absolutely irrelevant.

Last and far from least, lawyers and clients. Public access to information has created a desire for simpler ways of finding that information and judging its import—in other words, simpler interfaces. By any measure, a lawyer represents a complex interface in the legal process.

Think about tax self-help books. You could argue, a bit perversely, perhaps, that the most widely-read piece of legal information in the country is the annual issue of J.K. Lasser's, *Your Income Tax*.<sup>210</sup> At least it was until J.K. Lasser began publishing tax software to replace it.<sup>211</sup>

The replacement of Lasser's book by software provides an interesting example for three reasons. First, tax self-help books and tax self-help software are absolutely pervasive. We all have to file income taxes. You could say that duress breeds the market for the books and the software. But I think something else is working to create that market. Simply put, a large segment of the population has encountered the text of the tax laws directly, and they have not liked what they have seen. The would-be taxpayer has three choices: to hire expert advice, to buy advice in the form of a handbook, or to get that same knowledge bottled slightly differently as a computer program.

Second, tax self-help software tends to have had an earlier incarnation as a book or text. This is important because it seems that

---

210. See J.K. LASSER INSTITUTE, J.K. LASSER'S YOUR INCOME TAX 1996 (1995).

211. See J.K. Lasser's *Your Income Tax* 1996 (visited Jan. 29, 1997) <<http://www.mcp.com/mgr/lasser/>> (on file with *The American University Law Review*) (allowing viewers to subscribe to J.K. Lasser online tax service).

executable software is not the only way lawyers will be replaced. Things like handbooks and simple text publications can serve that function as well.

Finally, tax self-help products are representative of a class of self-help information that builds on administrative law and regulatory information. We all know that administrative law has gotten increasingly important for the profession during the last fifty years. There is a large category of problems in this field that can be addressed by handbooks and by software, and I believe that this will happen.

The big question therefore becomes, if there are a lot of J.K. Lassers publishing their various helpful handbooks on the Internet, how will the legal profession react? I suspect that to the extent that lawyers act only as access paths for legal information, jobs will be at risk. A patent attorney once told me that his job in a corporate law department had consisted largely of reading the patent handbook to in-house clients. Although he was joking a little bit, it made me wonder what he would do if they could read it for themselves. It makes me wonder how many attorneys are like him. It seems to me that many attorneys maintain professional jurisdiction over their work by virtue of the control they have over the information they need. As more information providers emerge, obviously this control will erode, and the profession may erode with it.

A corollary question: Who is to explain public information to the public? The patent handbook does not provide the whole story; somebody has to apply it to the client's situation. Somebody has to counsel. Somebody has to look for exceptions and loopholes. Even now, this is not an activity that is exclusively the province of lawyers. Others, like accountants or informal representatives in administrative proceedings, do similar things. So do paralegals. They, like niche publishers, are well positioned to be presences in the emerging cyberspace.

The question, however, is not whether clients ought to be able to obtain their legal information online or whether lawyers are the people best qualified to interpret this information. The question is whether lawyers will abandon a protectionist paradigm before they miss all the action. That is a decision that will be made or not made, or made by not being made, by people, not technology, although technology will set the stage for it. That, if anything, is the keynote in all of this: The big news in the twenty-first century will not be technology itself. Technology is like the weather in my home town. It changes continuously.

The future that lies 100 years out is divided, as the future usually is, into a series of opportunities and challenges. The challenges amount to reconceiving what lawyering is in a world where there is wide access to information, little ability for a single profession to control access to that information, and potential for an even greater resentment of that profession should it try to impose tight control on information as a kind of protectionist reaction to that new world. The opportunities lie in the array of new roles and new arenas of work that future lawyers will occupy.

Thank you.

(Applause)

## V. FREEDOMS V. RESTRICTIONS ON THE INTERNET

MR. PLESSER: I would like in this introduction to talk about copyright. There are two other speakers on encryption, so I will not talk about encryption. But, before I discuss copyright, let me tell you my practice perspective. I think that often helps in understanding where a speaker's comments come from. I represent many people in the online and Internet service field. We represent Commercial Internet Exchange,<sup>212</sup> which is an association of the largest Internet access providers. I think that more than ninety percent of the Internet traffic occurs through services provided by our members. So we are not the online services, but the true access providers, including MCI,<sup>213</sup> Sprint,<sup>214</sup> PSI,<sup>215</sup> and UUNet.<sup>216</sup> We also do a fair amount of work for MCI,<sup>217</sup> Netscape,<sup>218</sup> AOL,<sup>219</sup> CompuServe,<sup>220</sup> and others who are more direct players in the online business.

The freedom versus restriction issue is fascinating. When I was in high school, we spent a year on this issue of liberty versus security.

---

212. Commercial Internet Exchange, *Welcome to the CIX Association* (last modified Jan. 3, 1997) <<http://www.cix.org:80>> (on file with *The American University Law Review*).

213. MCI, *Internet Resources* (visited Jan. 3, 1997) <<http://www.mci.com.resources>> (on file with *The American University Law Review*).

214. Sprint, *For Internet* (visited Jan. 3, 1997) <<http://www.sprint.com/forinet>> (on file with *The American University Law Review*).

215. PSINet, *Welcome to PSI* (visited Jan. 3, 1997) <<http://www.psi.net>> (on file with *The American University Law Review*).

216. UUNet, *UUNET Technologies Home Page* (visited Jan. 3, 1997) <<http://www.uunet.com>> (on file with *The American University Law Review*).

217. See MCI, *supra* note 213.

218. See Netscape Communications Corp., *supra* note 62.

219. See AOL, *supra* note 16.

220. See CompuServe, *supra* note 15.

What is the balance in our society between freedom, on one hand, and responsibility, on the other? It is the oldest political science or legal analysis question that we face.

I will take the issue out of the theoretical and move it into something that is relevant to lawyers. Why is the balance of freedom and responsibility, or freedom and restriction, different with respect to the Internet? How does this balance change? Two words are key: liability and jurisdiction. These two words are critical to understanding why this issue is different with the Internet than it is with newspapers, TV, or other regulated media.

One of the issues that is critical is that anybody can publish on the Internet. The whole idea of the Internet is that publication does not come through *The New York Times*,<sup>221</sup> NBC,<sup>222</sup> or CNN.<sup>223</sup> Those entities are not the only source of news. With the Internet, essentially everyone in society is empowered to be their own publisher. As we have formulated First Amendment jurisprudence during the past 200 years, we always have thought that only a definable set of people could publish. If any part of this group defamed you, invaded your privacy, committed consumer fraud, or published pornography, you could sue them. You would go to the publisher because he was liable for the publication. It was relatively simple. The issue of liability, up to now, has been relatively straightforward.

In the famous *New York Times v. Sullivan*<sup>224</sup> case, which was the most important libel case, people often forget that the dispute did not pertain to a story in *The New York Times*, but to an advertisement, written by some African-American ministers, accusing state and local officials in Mississippi of inappropriate activities.<sup>225</sup> *The Times* had had an opportunity to look at the advertisement before deciding to publish it and took responsibility for it. So identifying the liable party never really was a problem.

Telephone was the other extreme because we said that these were common carriers.<sup>226</sup> The telephone company never had any respon-

---

221. See New York Times, *The New York Times on the Web* (visited Jan. 7, 1997) <<http://www.nytimes.com>> (on file with *The American University Law Review*).

222. See NBC, *NBC.com* (visited Jan. 7, 1997) <<http://www.nbc.com>> (on file with *The American University Law Review*).

223. See Cable News Network, Inc., *supra* note 139.

224. 376 U.S. 254 (1964).

225. See *New York Times v. Sullivan*, 376 U.S. 254, 256-57 (1964) (stating that advertisement alleged that officials in Mississippi violated due process rights of thousands of African-American students engaged in non-violent demonstrations by turning hoses on them and finding *The New York Times* not guilty of libel).

226. See generally *Denver Area Educ. Telecomms. Consortium, Inc. v. FCC*, 116 S. Ct. 2374, 2383 (1996) (reiterating tradition of classifying telephone companies as common carriers);

sibility because, after all, the definition of common carrier is that you will take all comers—your facilities and services are available commonly to anybody who wants them.<sup>227</sup>

So, the tradition in this country has been that the identity of the potentially liable party is very clear. It has been the speaker, the publisher, the person making the communication. The publisher no longer is easy to find because it could be you, me, and everybody on this panel. It is anybody who can get a Web page. It is anybody who puts a note on the listserv.<sup>228</sup> The listserv, in effect, becomes that person's publisher. The fact that the publisher no longer is easy to identify has made many people extremely nervous. We have seen a great concern about who is liable in most of the substantive legal areas. Congress now is drafting legislation which says that online providers should be liable to the copyright owners for infringement by online users.<sup>229</sup> In addition, Congress has passed the Communications Decency Act ("CDA"),<sup>230</sup> which is now subject to litigation.<sup>231</sup> The Christian Coalition's answer to how to regulate or to solve the problem of indecency or pornography on the Internet is to make the online providers liable, not the speaker.<sup>232</sup> This approach

Turner Broad. Sys., Inc. v. FCC, 512 U.S. 622, 2480 (1994) (O'Connor, J., concurring in part and dissenting in part) (reasoning that if Congress can demand that telephone companies operate as common carriers, then it can ask same of cable companies); FCC v. Sanders Bros. Radio Station, 309 U.S. 470, 474 (1940) (recognizing that Communications Decency Act of 1934 regards telephone companies as common carriers); Bement v. National Harrow Co., 186 U.S. 70, 91 (1902) (acknowledging that telephone companies are common carriers).

227. A common carrier is "one who is in the business of transporting goods or persons for hire, as a public utility." BARRON'S LAW DICTIONARY (3d ed. 1991). Common law has made the common carrier an insurer of goods against all harm except that resulting from God or the public enemy. See RESTATEMENT (SECOND) OF TORTS § 328A (1965). The Federal Communications Commission ("FCC") retains the power to regulate common carriers in the area of communication. See Andrea Sloan Pink, Note, *Copyright Infringement Post Isoquantic Shift: Should Bulletin Board Services Be Liable?*, 43 UCLA L. REV. 587, 630 (1995). In the context of defamation, a common carrier may be liable for gross insults to its patrons that reasonably offend them. See RESTATEMENT (SECOND) OF TORTS § 623.

228. See *supra* notes 51-56 and accompanying text (describing and defining listservs).

229. See Carey R. Ramos & Carl W. Hampe, "Mere Conduit" Exemption Stirs Debate: Legislation Introduced in Congress, N.Y. L.J., Sept. 30, 1996, at S1 (discussing reasons for potential copyright liability for online service providers).

230. 47 U.S.C.A. § 223 (a)-(h) (West Supp. 1996).

231. See ACLU v. Reno, No. 96-963, 1996 U.S. Dist. LEXIS 1617 (E.D. Pa. Feb. 15, 1996) (enjoining enforcement of CDA by granting limited temporary restraining order because Act's definition of "indecent" was deemed unconstitutionally vague), *aff'd*, 929 F. Supp. 824 (E.D. Pa. 1996). The plaintiff ACLU sought a preliminary injunction on February 8, 1996, the day the Act was signed, claiming that the CDA provisions that were directed toward Internet communications impinged on rights protected by the First and Fifth Amendments. See *id.*

232. The Christian Coalition, a conservative religious group, has advocated tighter regulation of the Internet, primarily to protect children from online pornography. See Laurent Belsie, *Decision Sharpens, But Doesn't Settle, Dispute Over Free Speech Versus Smut in Cyberspace*, THE CHRISTIAN SCIENCE MONITOR, June 14, 1996, at 1 (noting Christian Coalition's support of CDA). The Coalition even included the protection of children from computer pornography as the first

unfolded because there was a great deal of pressure to move toward getting liability from deep pocket defendants like access providers.

There has not been much case law in this area. *Cubby v. CompuServe* is important in that it states that service providers are not publishers.<sup>233</sup> *Stratton Oakmont, Inc. v. Prodigy Servs. Co.*,<sup>234</sup> addressed this same question. The court in *Prodigy* held that when an online service provider regulates the content of its bulletin boards, it is a publisher.<sup>235</sup> Remember *FCC v. Pacifica Foundation*<sup>236</sup> in which the court authorized the FCC to impose sanctions on a New York radio station

---

plank in its Contract With the American Family. See Laurent Belsie, *The Hard Drive to Keep Computer Porn from Kids*, THE CHRISTIAN SCIENCE MONITOR, Feb. 20, 1996, at 3 (describing efforts undertaken by various groups to prevent children from accessing online pornography). The group likens the Internet to television and radio, mediums strictly monitored by the courts and the FCC. See *id.* As such, the Coalition strongly supports the CDA, which bans from the Internet any material deemed "indecent" or "patently offensive" to minors. See *id.* As a spokesman for the group said, after the ACLU was granted its injunction, "We fully anticipated it going to the Supreme Court level, and ultimately we believe we will be victorious." Barbara Whitaker, *Judges Block Ban on Explicit Internet Files; Conservatives Predict Appeal to Supreme Court*, DALLAS MORNING NEWS, June 13, 1996, at 1A. The Supreme Court granted certiorari on December 6, 1996. See *Reno v. ACLU*, 117 S. Ct. 554 (1996).

233. *Cubby, Inc. v. CompuServe, Inc.*, 776 F. Supp. 135, 137 (S.D.N.Y. 1991). Cubby brought this action for libel and business disparagement based on allegedly defamatory statements carried on CompuServe's computer database. See *id.* The plaintiffs in this case developed Skuttlebut, an electronic database designed to distribute gossip about individuals in the television and radio industries. See *id.* at 138. Skuttlebut's creators intended for it to compete with Rumorville, a similar database maintained by Cameron Communications, Inc. and transmitted to the Internet through CompuServe. See *id.* at 137-38. Plaintiffs claimed that Rumorville published false and defamatory statements about Skuttlebut, describing it as a "new start-up scam." See *id.* at 138 (quoting Robert G. Blanchard Aff., July 11, 1991, ¶ 5-9). The trial judge granted CompuServe's motion for summary judgment, ruling that the online service provider should not be treated as a traditional publisher if it exercises no editorial control over the information it posts. See *id.* at 139, 144. Because CompuServe was not a publisher it could not be held liable for libelous remarks in a publication it merely provided to users. See *id.*

234. No. 94-31063, 1995 N.Y. Misc. LEXIS (Sup. Ct. May 24, 1995). Stratton Oakmont, a securities investment banking firm, filed a libel suit against Prodigy after allegedly defamatory statements appeared on "Moneytalk," one of Prodigy's bulletin boards. See *id.* at \*2. An unidentified bulletin board user had accused the firm and its president of committing "criminal and fraudulent acts in connection with the initial public offering of stock of Solomon-Page Ltd." *Id.* The judge ruled that because Prodigy routinely regulated the content of its bulletin boards, the company was a publisher in the traditional sense with all attendant liability. See *id.* at \*9-10. The Stratton ruling demonstrates that traditional tort principles transcend even electronic boundaries. See Richard P. Hermann II, Comment, *Who is Liable for Online Libel*, 8 ST. THOMAS L. REV. 423, 424-25 (1996); see also Cynthia L. Counts & C. Amanda Martin, *Libel in Cyberspace: A Framework for Addressing Liability and Jurisdictional Issues in this New Frontier*, 59 ALB. L. REV. 1083, 1097-98 (1996) (noting that Prodigy apologized to Stratton Oakmont for any damage to its reputation and that Stratton Oakmont agreed not to oppose Prodigy's ability to reargue motion for summary judgment); Elizabeth Corcoran, *\$200 Million Libel Suit Against Prodigy Dropped; Online Industry Had Worried About Case*, WASH. POST, Oct. 25, 1995, at F2 (reporting relief throughout online community that case was dropped). On September 15, 1995, Prodigy filed a motion to reargue for summary judgment, but the court denied the motion on December 11, 1995. See *Stratton Oakmont, Inc. v. Prodigy Servs. Co.*, 24 Media L. Rep. (BNA) 1126 (N.Y. Sup. Ct. Dec. 11, 1995).

235. See *Prodigy*, 1995, N.Y. Misc. LEXIS, at \*7.

236. 483 U.S. 726 (1978).

for broadcasting a segment in which comedian George Carlin swore several times.<sup>237</sup> Well, some access providers or online providers have developed a Carlin screen so that dirty words are eliminated from their bulletin boards.<sup>238</sup> The court in *Prodigy* interpreted that as editorial control and held that if you put a "Carlin screen" in, you make yourself a publisher.<sup>239</sup> This seems to run counter to public policy. I mean, why would you want to discourage the screening of dirty words?

So the issue is, who is liable? We now have this new creature, this new entity, the online service provider, and the really exciting question is what type of liability are we going to attach to it. Clearly we are not going to attach common carriage because they are not common carriers. Short of common carriage, what kind of protection do we grant the online service providers? We are trying to create something called conduit liability, which means that if all you are providing is access, if all you are doing is acting as a conduit, then you are not responsible.<sup>240</sup> I think the CDA is a good example of what I am talking about.<sup>241</sup> These efforts focus directly on this issue of freedom and restriction.<sup>242</sup> As the Internet has developed, many

---

237. See *FCC v. Pacifica Found.*, 438 U.S. 726, 729-30 (1978).

238. See generally Iris Ferosic, *Don't Shoot the Messenger: Protecting Free Speech on Editorially Controlled Bulletin Board Services by Applying Sullivan Malice*, 14 J. MARSHALL J. COMPUTER & INFO. L. 347, 364-65 (1996) (describing how Prodigy's editors, much like traditional newspaper editors, subjectively determine which messages will be posted on bulletin board); Hermann, *supra* note 234, at 443 (detailing Prodigy's use of software designed to screen out messages considered offensive by its subscribers).

239. See *Prodigy*, 1995 N.Y. Misc. LEXIS, at \*13-14 (holding that when Prodigy monitored incoming transmissions so as to maintain computer service laden with family values, company assumed publisher's role with all concomitant legal consequences).

240. See, e.g., Counts & Martin, *supra* note 234, at 1116 (recommending that courts distinguish between online service providers acting as mere distributors of information and providers editing content of messages and service providers acting as traditional publishers); Hermann, *supra* note 234, at 442 (positing that imposing liability on operators of online bulletin boards for contents of messages will pose undue burden on Internet providers).

241. See 47 U.S.C. § 223 (a)-(h) (West Supp. 1996). During debate of the bill, Senator James Exon introduced an amendment, bearing his name, that provides fines up to \$100,000 and two years in prison for individuals who knowingly transmit or knowingly make available obscene, lewd, lascivious, filthy, or indecent materials to minors; see also Nat Hentoff, *When Privacy Doesn't Compute: A Senate Vote to Censor Cyberspace Could Mean that Speech that is Fully Protected in Books, Magazines and Newspapers is Subject to Criminal Sanction if Made Available over the Internet*, THE SAN DIEGO UNION-TRIB., Sept. 3, 1995, at G4 ("The Exon [Amendment] would be the most sweeping imposition of governmental censorship in American history because it is deliberately and directly aimed at a new technology that goes far beyond any previous ways of communication."). Senator Exon described the amendment as a protection for minors against "a red-light district in cyberspace." *Id.* Opponents of the CDA, and of the Exon Amendment specifically, collected more than 100,000 signatures in an online petition against the measure. See *Internet Censorship Prohibited*, CHARLESTON DAILY MAIL, Aug. 5, 1995, at 5A (reporting excitement in online community when House passed amendment that expressly prohibited Internet censorship by government).

242. See Hentoff, *supra* note 241, at G4 (summarizing Exon Amendment).



people have wanted to publish pornographic images or information about sexually explicit activities. Others do not want children to be able to access this material.<sup>243</sup> Still others support the goal of legislation such as the CDA, but oppose the means employed to reach that goal.<sup>244</sup>

This discussion gets into the other big issue of jurisdiction. If I download a Web page from Finland that has some obscenity on it, who is liable? Is it the person who is downloading it or is it the person making it available? And who has jurisdiction over it? Does the U.S. District Court in Tennessee have jurisdiction over a posting that was made in Finland?<sup>245</sup> What happens if there were extradition, but the individual running the World Wide Web page in Finland says, "Well, I did not ask a Tennessee citizen to access the page."

There have been some exaggerated stories regarding obscenity and the Internet. *Time* ran what I thought was a very exaggerated story about pornography and the Net.<sup>246</sup> Although there is a fair amount of pornography on the Internet, that really is a minor area of interest and use compared to the e-mail, business, and commerce traffic. The Internet does not function like "900-numbers," where a fair majority of the traffic involves sexually explicit material. In truth, I think that pornography makes up less than two or three percent of the traffic on the Internet.

---

243. See *id.* (discussing Exon Amendment).

244. Opponents of the CDA support the underlying goal of the Act, and specifically the Exon Amendment. See Whitaker, *supra* note 232, at 1A (quoting CEO of America Online, country's largest online service provider, as supporting government's goal of protecting children from online pornography). Opponents object, however, to the Act's infringement on their First Amendment rights. See *id.*; see generally Brad Bonhall, *Getting the Dirt Out: Anaheim Hills Computer Chief Has Come up with a 'Filth Filter' to Keep Net-Crawling Kids Safe and Give Parents and Teachers Peace of Mind*, L.A. TIMES, July 30, 1996, at E1; James Coates, *No Sure-Fire Way to Shield Children from Online Smut*, CHI. TRIB., Feb. 17, 1996, at 1; Sen. James Exon, *Kids Need Law's Protection*, USA TODAY, Dec. 7, 1995, at 10A.

245. See *United States v. Thomas*, 74 F.3d 701, 709-10 (6th Cir. 1996) (holding that when defendants run obscene bulletin board from computer located in Northern District of California and obscene material is downloaded onto computer in Northern District of Tennessee, Western District of Tennessee is proper venue because venue lies where offense is committed, defendant knew that people in other districts would access obscene material on bulletin board, and defendant knew that particular person in Western District of Tennessee would access obscene material because defendant had person's address in membership files).

246. See Philip Elmer-DeWitt, *On a Screen Near You: It's Popular, Pervasive and Surprisingly Perverse, According to the First Survey of Online Erotica. And There's No Easy Way to Stamp It Out*, TIME, July 3, 1995, at 38 (reporting that both demand for and eroticism of online pornography is increasing rapidly as Internet continues to pervade American homes); see also Wendy Cole, *The Marquis de Cyberspace*, TIME, July 3, 1995, at 43 (interviewing online pornography convict Robert Thomas); Philip Elmer-DeWitt, *Fire Storm on the Computer Nets: A New Study of Cyberporn, Reported in Time Cover Story, Sparks Controversy*, TIME, July 24, 1995, at 57 (reporting that study that served as basis for *Time's* online pornography cover story has raised questions about author's credibility); Joshua Quittner, *How Parents Can Filter out the Naughty Bits*, TIME, July 3, 1995, at 45 (offering suggestions on how to protect children from evils of online smut).

It is a political issue. The Christian Coalition, and other anti-obscenity groups, feel that there must be a way to control indecency and obscenity on the Net.<sup>247</sup> Senator Exon initiated legislation that in the beginning essentially made anybody who made offending information available on the Net liable.<sup>248</sup>

Legislation is split between obscene information and information that now is called indecent.<sup>249</sup> No one had a terrible problem with banning obscene information because, as we all know, obscene material is not protected by the First Amendment.<sup>250</sup> So long as the legislation finds the person who makes the communication liable, and not the information service provider who merely transmits the information, no one has a problem with it. Even though there was a tremendous amount of criticism of the legislation generally,<sup>251</sup> I think it is okay as far as the provisions regarding obscene information go.

The legislation focuses the liability question on the person who creates the image or communication; the access provider or the online provider is not liable for merely providing the connection.<sup>252</sup>

247. See *supra* note 232 and accompanying text (outlining Christian Coalition's position in favor of CDA).

248. See 47 U.S.C.A. § 223(a)-(h) (West Supp. 1996).

249. See *id.* § 223(a)(1)(B) (banning transmission of obscene and indecent speech).

250. See *Miller v. California*, 413 U.S. 15, 36-37 (1973) (holding that prurient or patently offensive descriptions of sexual conduct must have "serious literary, artistic, political, or scientific value to merit First Amendment protection"). When determining whether material is obscene, courts must apply "contemporary community standards" of decency rather than national standards. See *id.* at 24, 36-37 (citing *Kois v. Wisconsin*, 408 U.S. 229, 230 (1972) (quoting *Roth v. United States*, 354 U.S. 476, 489 (1957))). Although the Supreme Court has not precisely defined the term "obscene," it has offered two examples of how states could define "obscene" in their regulatory schemes: "(a) [p]atently offensive representations or descriptions of ultimate sexual acts, normal or perverted, actual or simulated; [and] (b) [p]atently offensive representations or descriptions of masturbation, excretory functions, and lewd exhibition of the genitals." *Id.* at 25.

251. Opponents of the CDA, including the ACLU, the Center for Democracy and Technology, and the Electronic Privacy Information Center ("EPIC"), maintain that the Act's "indecency" and "patently offensive" provisions violate the Supreme Court's mandate that restrictions on free speech be kept to a minimum. See Peter Lewis, *Protest, Cyberspace-Style, for New Law*, N.Y. TIMES, Feb. 8, 1996, at 16A. These provisions, included in the Exon Amendment, ban from the Internet those materials deemed "indecent" or "patently offensive" to minors, and provide for criminal penalties for violation of the Act. See 47 U.S.C.A. § 223(a)-(h). See generally Ted Bunker, *Some Web Surfers Toast Court Ruling on Censorship*, BOSTON HERALD, June 13, 1996, at 38 (noting celebration among opponents of CDA when Pennsylvania judge ruled Act unconstitutionally vague); Leslie Miller, *Parents Join in Fight Against Online Indecency Law*, USA TODAY, Mar. 4, 1996, at 6D (reporting that groups applaud underlying premise of CDA, but oppose infringement of First Amendment liberties).

252. See 47 U.S.C.A. § 223(e)(1).

[N]o person shall be held to have violated subsection (a) or (d) solely for providing access or connection to or from a facility, system, or network not under that person's control, including transmission, downloading, intermediate storage, access software, or other related capabilities that are incidental to providing such access or connection that does not include the creation of the content of the communication.

Additionally, there are safe harbors for those who make an effort to prevent access to children.<sup>253</sup>

The problem with the legislation is that it criminalizes the transmission of indecent information.<sup>254</sup> At least one court has held that the term "indecent information" is vague in its meaning.<sup>255</sup> The statute also probably is impossible to apply because in the online environment, it is very difficult to identify the person with whom you are speaking. The standard of indecency is extremely chilling to the transmission of information over the Internet. The District Court for the Eastern District of Pennsylvania has issued an injunction.<sup>256</sup> There are at least two cases that have been consolidated in Philadelphia to determine the constitutionality of that one set of cases as brought by the ACLU.<sup>257</sup>

A second set of CDA cases, in which some of my clients are participating, is headed by the American Library Association and addresses the technological aspects of the Internet.<sup>258</sup>

Let me conclude by saying that the Internet is wonderful. It is more than just a new development; it is a major shift in how we communicate with each other. It has provided us with the freedom to communicate with everyone on a very large scale. But it also has flattened the hierarchical structure of publication and has made it more difficult to identify publishers and distributors. The middle person has been taken out of the distribution of opinion and thought. That is unprecedented, and it is a great advance for freedom.

On the other hand, there are people who are worried about defamation, obscenity, consumer fraud, and copyright infringement. We are in the middle of a great wave of backlash, where people are saying that the online service providers should be held liable for the

---

*Id.*

253. *See id.* § 223(e)(5)(A). The statute provides:

It is a defense to a prosecution . . . that a person . . . has taken, in good faith, reasonable, effective, and appropriate actions under the circumstances to restrict or prevent access by minors to a communication specified in such subsections, which may involve any appropriate measures to restrict minors from such communications, including any method which is feasible under available technology . . . .

*Id.*

254. *See id.* § 223(a)(1)(B).

255. *See* ACLU v. Reno, 24 Med. L. Rep. 1379, 1381 (E.D. Pa. Feb. 15, 1996) (ruling that "indecent" is unconstitutionally vague term because it reaches across broad range of material, including books and plays, which enjoy First Amendment protection).

256. *See id.* (granting temporary restraining order to ACLU because CDA contains unconstitutionally vague term, "indecent," which serves as basis for criminal prosecution for violation of Act).

257. *See* ACLU v. Reno, 929 F. Supp. 824 (E.D.P.A.), *probable jurisdiction noted*, 117 S. Ct. 554 (1996).

258. *See id.* (consolidating two sets of cases).

content of the information transmitted by the individuals who use their services.<sup>259</sup>

I do not think we are saying that there should not be liability. I think that we are saying liability should depend on the nature of the responsibility. These issues are constantly in the news. For instance, there was a story in *The Washington Post* recently about AOL seeking a temporary restraining order against another online provider.<sup>260</sup> These are all important legal issues, and the news will keep you informed.

(Applause)

MR. GELLMAN: Thank you, Mr. Plessner. You have provided us with a very good introduction to the issues with which we are concerned. One of the big problems we have when talking about the Internet and when figuring out how to approach it is that we do not know how to analogize the new players to the existing legal categories. With the Internet, we have created new categories that cut across traditional lines, and that is one of the struggles.

Another struggle that Mr. Plessner talked about is the problem of jurisdiction. I think John Perry Barlow made the best remark regarding jurisdiction and the Internet. He commented that, on the Internet, the First Amendment is a local ordinance.<sup>261</sup> This state-

---

259. See Robert F. Goldman, *Put Another Log on the Fire, There's a Chill on the Internet: The Effect of Applying Current Anti-Obscenity Laws to Online Communications*, 29 GA. L. REV. 1075, 1119-1120 (1995) (suggesting that legislatures and courts create obscenity law that accounts for unique medium of cyberspace); Pink, *supra* note 227, at 632-33 (calling on Congress to amend Copyright Act of 1976 so as to impose duty on bulletin board services to prevent direct copyright infringement); see also Jane C. Ginsburg, *Putting Cars on the "Information Superhighway": Authors, Exploiters, and Copyright in Cyberspace*, 95 COLUM. L. REV. 1466, 1498-1499 (1995) (advocating adoption of revised copyright law that would enhance authors' ability to receive payment even when posted electronically).

260. See Charles W. Hall, *America Online Sues Internet Advertiser; Firm Accused of Illegally Using Service's Name*, WASH. POST, Apr. 11, 1996, at B8 (reporting that America Online was seeking temporary restraining order against another online company for claiming it was subsidiary of America Online and for sending thousands of unsolicited e-mail messages to America Online's subscribers, which is practice prohibited by AOL); see also *supra* notes 93-95 and accompanying text (defining "spamming" and discussing Green Card Incident). See generally AOL, *supra* note 16.

261. In response to the passage of the CDA, Pub. L. No. 104-104, § 502, 110 Stat. 56, 133-35 (1996) (to be codified at 47 U.S.C. § 223(a)-(h)), John Perry Barlow, co-founder of Electronic Frontier Foundation and former Grateful Dead lyricist, circulated his "A Declaration of the Independence of Cyberspace." See John Perry Barlow, *A Declaration of the Independence of Cyberspace* (last modified Feb. 8, 1996) <<http://www.darkcarnival.com/mar96/barlow/html>> (on file with *The American University Law Review*). The Declaration expresses Barlow's disgust with and mistrust of traditional authority, and it warns lawmakers of the incredible potency of the cyberspace community. See *id.* In part, the Declaration reads as follows:

Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of the Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather. . . . In the United States, you have today created a law, the Telecom-

ment points to one of the problems that we have with the law and the Internet: We are trying to address local and national issues, but the Internet is a global environment, and local controls may not work.

Finally, Mr. Plessner talked about the conflicts that arise over private interests on the Net. There are commercial conflicts and copyright conflicts. There also are cultural conflicts, which gave rise to the CDA.<sup>262</sup>

Now, we will talk about some of the government interests that are involved with the Internet. Our next speaker is Ron Lee, who is the General Counsel of the National Security Agency ("NSA").<sup>263</sup> The NSA has been in the middle of all the encryption wars that have occurred during the last few years, and Mr. Lee will give us a report.

MR. LEE: Well, I am glad you did not stop the sentence after "NSA has been in the middle," because I spend a lot of time trying to convey to people that the NSA does not have any domestic mission. It is a foreign intelligence agency, and it wants to keep it that way.

I want to approach these issues from a slightly different perspective. I think the fundamental questions of privacy and security are not unique to the Internet. The Internet does not add any fundamentally novel or unique twists or turns. What the Internet does is provide us with a concrete example of how society must come to terms with the impact technology has on the existing legal rules and on society's value choices. Of course, it is even more complicated because we are concerned with more than one society, as Barlow's quotation points out.

In this case, technology consists of computers, the means for those computers to communicate and to access data, and the software that drives the computers and the networks. I would like to encourage us, in at least some of our remarks, to think more broadly than just the present-day Internet. The specific technology I will talk most about is encryption technology.

Before I do that, I would like to scan the political-legal environment for a minute. The sovereign nation-state still is the primary decision-maker. Its interests will endure no matter what happens to technology. One of the nation-state's interests is protecting its citizens from outside threats. Some of these threats have persisted since the

---

munications Reform Act, which repudiates your own Constitution and insults the dreams of Jefferson, Washington, Mill, Madison, DeToqueville, and Brandeis. These dreams must now be born anew in us.

*Id.*

262. See 47 U.S.C.A. § 223(a)-(h) (West Supp. 1996).

263. See National Security Agency, *National Security Agency* (visited Jan. 22, 1997) <<http://www.nsa.gov:8080>> (on file with *The American University Law Review*).

beginning of time; others, including non-traditional acts of war, or cyber-warfare,<sup>264</sup> are new. Another interest of the nation-state is providing domestic tranquility to its citizens. A third interest of the nation-state is protecting and promoting its citizens' commerce and industry. A fourth, which I have phrased very generally because it is not always the way the United States regards it, is providing for privacy and autonomy, the values that society prescribes. Although I agree with Mr. Plessner that there are some new legal issues presented, I think the nation-state will apply the law to conduct involving or affecting the Internet and other new technology with respect to these four enduring interests.

I think it is unrealistic to say that technology will sweep laws away or make them obsolete or ineffective. Certainly, some nations do a better job than others of making technological policy and then reflecting that policy in new laws. But the first reality we must confront is that technological advancement, which is happening at exponential speed, does not make the activity of governance, or the responsibility of citizens to participate in governance, obsolete.

Let me talk about encryption a bit. As a working, conceptual definition, it would help to think of cryptography as a technology that leverages ambiguous data into military, economic, and personal information of power. I have made the transition there from data to information.

The first thing I want to point out is that much of the controversy about freedom versus restrictions has to do with encryption for confidentiality purposes, but encryption has many purposes. Encryption is important to building national and global commerce and the kind of networks I just talked about. Encryption's various purposes are (1) authentication, (2) data integrity, (3) nonrepudiation, (4) information availability, and (5) confidentiality.

The second point I want to make is that the government, and particularly the national security community, has interests in all of these uses of encryption. If you could carry only one thing away from my comments here, it would be that the government's interests in encryption's uses are not always, or not even usually, in conflict with

---

264. National security officials warn of cyber-warfare, whereby foreign entities "infiltrate" America's computer systems and cause failure in everything from automated teller machines to sophisticated databases harboring our country's secrets. See generally Art Kramer, *E-war is Possible*, *CIA Director Says in Senate Hearings*, ATLANTA J. & CONST., June 27, 1996, at 4B (reporting that CIA Director John Deutch told Senate committee that explosive growth of Internet has increased country's vulnerability to electronic warfare); Holly Yeager, *U.S. Vulnerable to "Cyber-Attack;" Warfare on Information Front Studied*, HOUS. CHRON., Mar. 17, 1996, at 6 (suggesting that officials fear that battle lines in next war will be on electronic front).

the privacy interests of citizens. We all have our own definition of what privacy is. Two obvious ones that you hear are "the right to be left alone" and "the right to make autonomous choices" in intimate and non-intimate affairs. Well, if you think about the various uses of cryptography, they do not create a conflict between privacy and security.

Authentication actually increases privacy. When Mr. Gellman logs onto a computer, for example, I cannot see him face-to-face, so I do not know who he is. I need to have some way of trusting that he is who he says he is. Cryptography enables me to authenticate Mr. Gellman's identity.<sup>265</sup> That gives me privacy because it allows me to know that I am talking to Mr. Gellman and not to someone masquerading as him. Authentication using cryptography helps Mr. Gellman's privacy, too.

Using cryptography for data integrity will ensure that the code you input into your computer comes out undisturbed and looking exactly the same way at the other end.<sup>266</sup> So, it is clear that cryptography promotes privacy because you know that the person you wanted to receive your message received it in the exact same format as you sent it. If anyone tampered with it, cryptography will tell you.<sup>267</sup>

Cryptography's third task is nonrepudiation, which simply means that if Professor Culnan and I complete a deal, for example, and she tries to back out of it, I can prove that she did, in fact, engage in the transaction.<sup>268</sup> Cryptography provides me with the unambiguous proof that the transaction occurred.

Information availability is the other area in which I believe that cryptography has spawned very little conflict between privacy and security. It is just starting to get a lot of media attention. Information availability means that you can have access to the information, communications, networks, and services without disruption. If you think about the phone system, information availability means having a dial tone. You are much more likely to be able to communicate privately on these networks, including the Internet, if the systems are secured against outside disruption, denial, and destruction. Again,

---

265. See SCHNEIER, *supra* note 70, at 2, 52-68 (defining authentication and describing how user and host or two users can use public key cryptography to confirm identities).

266. See *id.* at 2 (stating that integrity means that receiver of message should be able to verify that message has not been altered in transit).

267. See *id.* (indicating that cryptography prevents intruders from substituting false message for legitimate one).

268. See *id.* (defining nonrepudiation as cryptography's assurance that sender of message cannot later falsely deny that he or she sent message).

this is another area where I do not see a conflict between privacy and security.

Now I come to cryptography for confidentiality—the topic on which I would like to focus. I admit, there is some tension between an individual's privacy and the nation's security when it comes to cryptography for confidentiality. I am referring to using encryption technology to scramble my messages, my data, whatever I want to keep secret, so that it means something to me, so that it means something to the person I intend to send it to, but if someone else were to get the message, it would mean absolutely nothing to him or her. Using cryptography, it would be mathematically infeasible for the unauthorized person who obtained my message to try to make any sense of it. The conflict, in a nutshell, is that there are times when the government needs, lawfully, to be able to unscramble those communications. Now, you might feel that your privacy would be better protected if the government never had that access. It is an important value that runs through some of our jurisprudence. That feeling is grounded in the belief that the government is the main or only threat to your privacy, but I am not sure that is always the case. I think there is a zone where your privacy interests and the nation's security interests overlap or are the same. For instance, the security of the nation can protect your individual privacy. As a citizen in any country that is undergoing an upheaval or is threatened by a foreign invasion knows, his or her own privacy and the national security have much in common.

In specific instances, your individual security may depend on the government's ability to get the plain text of encrypted communications when lawfully authorized to do so. For instance, if you lived next door to a house where bombs or nerve gas were being manufactured, you probably would want the police, when lawfully authorized, to be able to access the information, to find out about the threat, and to take appropriate action. Additionally, the government has a strong interest in protecting the privacy of your communications against foreign adversaries.

This is probably a point where I should mention that the NSA has two missions. Most people do not know about the second mission. The first mission is to gather foreign intelligence through highly technical means. The second mission is to protect the national security information of the U.S. government and its allies. For example, I used my secure telephone this morning. It was provided by NSA technology. The agency has a great interest in making sure that the national information infrastructure is secure against foreign



attacks. So, the NSA has a mission to protect as well as a mission to attack.

I want to leave you with the thought that it is not always a zero-sum game of how much privacy the citizen must give up so that the government can have security. After all, the citizens act through their government. Maybe we should ask how much privacy and security citizens should insist upon from the government. In other words, you are trying to maximize the sum of the citizens' privacy and overall security. This is particularly true in the areas of authentication and confidentiality. As I said earlier, your communications are private only if you can verify the identities of the people to whom you are sending the messages. Even in the confidentiality area, where there certainly is some conflict between individual and government interests, security enhances privacy and vice versa.

(Applause)

MR. GELLMAN: Thank you, Mr. Lee.

I think it is interesting that Mr. Lee began with a discussion of the role of a sovereign nation-state, which he says is not going away. I think there is a lot to be said for this point of view, but it is clear that the global nature of the Internet is putting pressure on the state and on how it controls its interests. The Internet is making it more difficult for those interests to remain protected. The encryption issue is one that has both national security and criminal ramifications because encryption allows the government to protect domestic security as well as the privacy interests of its citizens.

Another element of encryption policy has to do with the role of commercial encryption providers. Jim Altman, our next speaker, is likely to talk about that.

MR. ALTMAN: Thanks.

Let me start by saying that I agree with Mr. Lee in that I will not focus, in particular, on the Internet because I do not think the issues are peculiar to the Internet. The Internet aggravates the issues and makes them more visible, but the issues involve electronic communication however it is done. The Internet simply means that we cannot avoid the questions anymore.

I thought I would talk about two different areas. First, I thought I would try to make the discussion more concrete by focusing on the implications of some of the issues as our clients see them. That is, on the practical reality as businesses see it. Second, I thought I would mention several First Amendment challenges that have been raised against the encryption controls.

Let me start by making sure that we all are starting with a basic knowledge of the export controls. There are controls on the export of cryptographic equipment, technology, and software.<sup>269</sup> Most exports are subject to regulation by the State Department.<sup>270</sup> Certain products with lower levels of cryptographic capability are instead subject to regulation by the Department of Commerce.<sup>271</sup> [Editors' Note: This discussion took place prior to the recent transfer of authority over commercial cryptographic exports from the State Department to the Commerce Department.<sup>272</sup>] Despite this bifurcated regulatory scheme, the policy decisions underlying the regulations and decisions concerning higher level products are made by the NSA.<sup>273</sup> That is not to say that the Commerce Department and

269. See Arms Export Control Act, 22 U.S.C. § 2778(d) (1994) (delegating authority to President to designate items as defense articles, stating that list shall constitute United States Munitions List ("USML"), and authorizing President to limit import and export of such items through promulgation of regulations); Export Administration Act of 1979, 50 U.S.C. app. §§ 2401-2420 (1994); International Traffic in Arms Regulations ("ITAR"), 22 C.F.R. § 121.1 cat. XIII(b) (1996) (including on USML "Information Systems, and equipment, cryptographic devices, software, and components"); Export Administration Regulations ("EAR"), 15 C.F.R. pts. 730-799 (1996) (setting forth Commerce Department's export regulations for items that do not appear on State Department's USML); see also SCHNEIER, *supra* note 70, at 610-17 (outlining U.S. export control of cryptographic materials); Ed Hsieh, *Cryptography and Privacy in the Information Age* (last modified May 13, 1996) <<http://www.princeton.edu/~edhsieh/frs130a.htm>> (on file with *The American University Law Review*) (describing types of encryption, including 40-bit and 80-bit "strong" encryption, and noting legislative efforts of Clinton Administration); Jill M. Ryan, *Freedom to Speak Unintelligibly: The First Amendment Implications of Government-Controlled Encryption*, 4 WM. & MARY BILL RTS. J. 1165, 1174-83 (1996) (discussing Clinton Administration efforts to control strong encryption); Charles L. Evans, Comment, *U.S. Export Control of Encryption Software: Efforts to Protect National Security Threaten the U.S. Software Industry's Ability to Compete in Foreign Markets*, 19 N.C. J. INT'L L. & COM. REG. 469, 469-79 (1994) (providing thorough background of encryption export controls); Ira S. Rubenstein, *Export Controls on Encryption Software*, in *COPING WITH U.S. EXPORT CONTROLS: 1995*, at 401 (PLI Com. L. & Practice Course Handbook Series No. 733, 1995) (providing detailed explanation of State and Commerce Department regulations and detailing practitioner's guidelines in advising client exporter on licensing requirements).

270. See ITAR, 22 C.F.R. pts. 120-130. The State Department's Office of Defense Trade Controls ("ODTC") administers the ITAR, see *id.* § 120.1(a), which contains the USML, see *id.* pt. 121. If an item is described on the USML, the ODTC will impose a licensing requirement for the exportation of that item. See *id.* § 123.1. The ITAR controls the exportation of most cryptographic materials through Category XIII of the Munitions List. See *id.* § 121.1 cat. XIII(b).

271. See 15 C.F.R. pts. 730-799. The Commerce Department's Bureau of Export Administration ("BXA") regulates the export of cryptographic items by requiring that the exporter obtain a license from the BXA prior to exporting any item that appears on the Commerce Control List ("CCL"). See *id.* pts. 730-799. The CCL does not contain items regulated by the State Department pursuant to the ITAR. See EAR, 61 Fed. Reg. 12,714, 12,937 (1996) (to be codified at 15 C.F.R. § 774.1). These encryption materials generally serve both civilian and military purposes, see *id.* at 12,735 (to be codified at 15 C.F.R. § 730.3), and fall under Category Five, Part II of the CCL, see *id.* at 13,004 (to be codified at 15 C.F.R. pt. 744, supp. 1, cat. 5, pt. II) (regulating "[i]nformation security," equipment, 'software,' systems, application specific 'electronic assemblies,' nodes, integrated circuits, components or functions').

272. See Exec. Order No. 13,026, 61 Fed. Reg. 58,767 (1996).

273. The State Department's licensing procedure requires the NSA's thorough review and approval of an application to export strong encryption. See 22 C.F.R. § 120.4(a) (indicating that State Department determines commodity jurisdiction in conjunction with other U.S.

other law enforcement agencies play no role, but I will consider them together for purposes of today's discussion and treat the export controls as one unified scheme. I hope Mr. Lee will straighten us out if he thinks that is unfair, but I want to stay at the policy level rather than getting into the details and mechanics of how the controls work.

MR. LEE: Even though this is a law school.

MR. ALTMAN: Yes, particularly because this is a law school.

As I said, there are broad controls that restrict the export of cryptographic technology,<sup>274</sup> but I do not mean to imply that you cannot export encryption technology from the United States. There are a number of exceptions to the general requirement of an individual license for each export of such products.<sup>275</sup> There is an exception for what is called mass market software with cryptographic technology using up to a 40-bit key length.<sup>276</sup> It is more complicated than that, but that is a good simple way of thinking about it. There are exceptions for certain uses of cryptography by financial institutions.<sup>277</sup> There are some other limited exceptions as

---

Government agencies); *see also* Ryan, *supra* note 269, at 1178. The State Department also relies on the NSA when deciding what cryptographic materials will appear on the USML. *See* Evans, *supra* note 269, at 478. The NSA, therefore, is "actively involved in the regulation and control of cryptography." *Id.*

274. *See supra* notes 269-73 and accompanying text (detailing encryption export controls).

275. *See* ITAR, 22 C.F.R. § 121.1 cat. XIII(b)(1)(i)-(ix) (exempting from export controls nine categories of cryptographic equipment and software including encryption used in: executing copyright protected software, certain banking equipment, software anti-virus protection, commercial radio and television programming, and other applications where cryptographic key variables cannot be modified by user); EAR, 61 Fed. Reg. 12,714, 13,035-36 (1996) (to be codified at 15 C.F.R. pt. 774, Supp. II) (stating that software that generally is available to public is released from EAR control).

276. *See* 22 C.F.R. § 121.1 cat. XIII(b)(1)(ix) (exempting certain computer anti-virus programs which include 40-bit encryption and transferring certain specified encryption already granted waiver from State Department to Commerce Department's CCL commodity jurisdiction procedure); EAR, 61 Fed. Reg. 12,714, 13,035-36 (to be codified at 15 C.F.R. pt. 774, Supp. II) (indicating that software that is available generally to public is exempt from EAR and describing such software as "[d]esigned for installation by the user without further substantial support by the supplier" and sold without restriction, at selling points by over the counter transactions, mail order transactions, or telephone transactions); Office of Defense Trade Controls, *Guidelines for Submitting a Commodity Jurisdiction Request for a Mass Market Software Product that Contains Encryption* (unnumbered State Department Memorandum) (on file with *The American University Law Review*). *See generally* Evans, *supra* note 269, at 479 (describing 1992 transfer of mass-market software with encryption from State Department review to Commerce Department review and stating that current exports of mass-market software using RC4 or RC2 algorithms and key of 40-bits or less are entitled to seven-day expedited review).

277. *See* 22 C.F.R. § 121.1 cat. XIII(b)(1)(ii), (v) (exempting cryptography used in banking transactions and limited access control devices such as ATMs and point of sale terminals when encryption is related directly to personal identification numbers ("PIN") protection); 61 Fed. Reg. 12,714, 13,005 (1996) (to be codified at 15 C.F.R. pt. 774, Supp. I) (including among administrative exceptions to EAR's licensing requirement for information security software and equipment: ATMs, software required to use ATMs, and software necessary for ATM to perform variety of functions, including authenticating user and preventing unauthorized access).

well.<sup>278</sup> There are, however, very stringent controls on the use of higher levels of cryptography—in particular, cryptography involving long key lengths.<sup>279</sup>

Let me present some background information that we can use to hone the issues. Mr. Lee focused on the perspective of the sovereign state, which I think makes sense because that is, after all, Mr. Lee's client.

MR. LEE: One sovereign state in particular.

MR. ALTMAN: Yes, one in particular. My views are formed to a fair extent by the clients we represent. You should know that we work quite a bit with the NSA to get approval for exports. I do want to say that although we do not always like the agency's decisions, I have practiced before a dozen-odd agencies for about eighteen years, and I cannot think of an agency that is more responsive, more accessible, or more competent than the NSA is in dealing with these issues.

Let me group our clients into three different categories. One group is financial institutions. I do not know if everybody who uses ATMs and that sort of thing is aware of this, but there was a time when many banks did not worry too much about the privacy of information. They were very concerned about the security of information—they did not want more money going out of an account than was supposed to—but they were not worried about people eavesdropping on the communications. After all, a customer's exchange with a teller is not an easy thing to intercept. And, what would somebody do with that information? "All right, so I took \$40 out of my bank this morning; do with that as you will."

But being concerned only with security is no longer enough. Authentication<sup>280</sup> and data integrity<sup>281</sup> are essential, but financial institutions are finding that their customers are demanding privacy as well. The work that financial institutions do is both electronic and international. The financial institutions therefore want to encrypt

---

278. See, e.g., 22 C.F.R. § 121.1 cat. XIII(b)(1)(iv) (setting forth exception for personal smart cards); *id.* § 121.1 cat. XIII(b)(1)(viii) (providing exception for cryptographic equipment, software that is limited to receipt of restricted audience radio or television that does not contain digital encryption, and that restricts digital decryption to video, audio, or management); 15 C.F.R. pts. 730-99 (indicating that only major exceptions to licensing requirement are for financial institutions' ATM equipment and software and for mass market software).

279. See 22 C.F.R. § 121.1, cat. XIII(b)(1) (providing basis for ODTIC strict interpretation of strong encryption). See generally Ryan, *supra* note 269, at 1173 (stating that strength of encryption scheme depends on strength of algorithm because hacker will require more time to decipher key); *id.* at 1174-77 (discussing government's control over strong encryption schemes and NSA's concern with PGP in particular).

280. See SCHNEIER, *supra* note 70, at 2 (defining authentication).

281. See *id.* (defining data integrity).

their transmissions—not just of the amount of money flowing between accounts, but all of the work they are doing for a particular customer. They do not want to say to a customer, “Well, we will encrypt some of your information, but not all of it.” The financial institutions are also being pressed to develop a whole range of products that will enable the customer to do his or her banking, estate planning, or insurance transaction from a home personal computer that is linked to the bank. Finally, most of the financial institutions that are our clients now are involved in activities outside the United States, and they want to be able to have a single, integrated system that will provide them with the security they think is necessary and that their customers demand.

A second category of clients with an interest in cryptography consists of telecommunications providers in the broad sense. Let me cite two examples. One is cable television companies. Most of the large cable television providers now are active internationally, and I am sure you all know they have an interest in encryption. They encrypt the pay channels, and you cannot watch them unless you pay for those channels, or unless you cheat. They have a strong interest in protecting their revenue from the latter. A second category of telecommunications providers are the cellular and digital telephone companies. Most people do not regard cellular telephones as particularly secure. That is a problem for companies that want to offer these products. So these companies are asking themselves, “How do we make the communications secure?”

We are witnessing huge international growth in the area of telecommunications right now. Although some of the international systems are not wholly compatible, the hope is that the differences ultimately will disappear. Certainly, companies like Motorola that are investing huge amounts of money in satellite systems that will provide communications around the world want to provide secure communications. They need a single, secure, integrated cryptographic technique for such a system.

Our third category of clients consists of security software manufacturers. For instance, suppose you have a large multi-national company that has operations in thirty different offices located in twenty different countries. This company would like to have an integrated computer system so that people in one office in one country can communicate with the folks in another office in another country. They want to transmit customer and design information through that system. They would like a system that they can use to transmit all sorts of data that they regard as highly confidential and

that they fear their competitors will be trying to obtain. Manufacturers of security software would like to be able to sell their security software to companies, such as this one, who will use the product around the world.

I do not mean to imply that none of these three types of clients is able to export any of their software with cryptographic functionality. Mr. Lee properly would jump down my throat if I said that. Rather, we have been fairly successful for many of these clients. But the regulations create several very important problems.

Let me put two fundamental concerns on the table. One concern is the physical or mechanical difficulty of complying with the regulations.<sup>282</sup> It can be tough for the small companies that do not have the money necessary to understand the system, to obtain the required approvals, or even to realize that they need the approvals. For a large company, the resources, at least in principle, are there, but it can cost major overhead. I know of financial institutions that want to export anywhere from several hundred to several thousand software packages. That means that the institutions are looking at every single one of those software packages and are asking, "What kind of security do we need? What kind of product is it? What issues does that raise?" They are asking these same questions and are going through the same processes over and over. Some companies simply will not receive permission to export their product. Either the program is generic, and the NSA is worried about who ultimately will use it, or the company wants a higher level of security than the NSA is prepared to authorize for export.

Now, let me turn to the second fundamental concern—the reason why the companies find the regulations so frustrating. Our clients' view is that there is good encryption software available around the world. This is becoming more and more true. Several years ago, encryption software basically was entirely American technology, but now it is being developed overseas. The U.S. companies believe that if they cannot export the technology, other countries simply will advance its development outside the United States. There is what the economists refer to as a first mover advantage. If you can come up with a product, like a security feature, and you are the first to get to the market, you can develop a commanding position—ask Microsoft<sup>283</sup> or

---

282. See *supra* notes 269-79 and accompanying text (outlining regulations that require procurement of license to export cryptographic materials).

283. See Microsoft, Inc., *Welcome to Microsoft* (last modified Jan 28, 1997) <<http://www.microsoft.com>> (on file with *The American University Law Review*).

Netscape.<sup>284</sup> If you lose that first mover advantage, it is gone forever. You cannot go back and say, "Oh, wait. Now that everybody else has created good encryption, we have it, too." At this point, you are just one more small player, and somebody else may well have taken the advantage. This scenario worries American companies; they see this as an issue that belongs to the next few years. They see an enormous demand for the secure transmission of data. The Internet is just one example of where companies would like to be able to conduct business electronically, but they cannot do it unless there is a consistent method for achieving privacy and security that is available not just in the United States, but also in other countries.

The issues surrounding U.S. encryption export controls were summarized fairly well in a report that the CEOs of a number of major technology companies issued in January 1996.<sup>285</sup> The report sponsors included the CEOs of Apple,<sup>286</sup> AT&T,<sup>287</sup> Compaq,<sup>288</sup> Data General,<sup>289</sup> Digital,<sup>290</sup> Hewlett Packard,<sup>291</sup> IBM,<sup>292</sup> Tandem,<sup>293</sup> and Unisys,<sup>294</sup> among others. They explain that the Internet and its equivalents offer unprecedented business and individual opportunities. These opportunities create a need for encryption that inevitably will be met by better cryptographic products, with or without U.S. government intervention. The Internet is a global phenomenon. Thus, the cryptographic protection needed to permit Internet commerce requires a uniform approach and consistent standards. If the standards found in software that the United States allows to be exported are not sufficient to meet business and consumer demand, foreign companies will step into the gap and produce products that do meet that demand. In short, these

---

284. See Netscape Communications Corp., *supra* note 62.

285. See Computer Systems Policy Project, *Perspectives on Society in the Information Age* (Jan. 1996) <<http://www.cspp.org/index.html>> (on file with *The American University Law Review*).

286. See Apple Computers, Inc., *supra* note 187.

287. See AT&T, *AT&T Homepage* (visited Jan. 7, 1997) <<http://www.att.com>> (on file with *The American University Law Review*).

288. See Compaq, *Compaq Online* (last modified Dec. 18, 1996) <<http://www.compaq.com>> (on file with *The American University Law Review*).

289. See Data General, *Data General Online* (visited Jan. 3, 1997) <<http://www.dg.com>> (on file with *The American University Law Review*).

290. See Digital, *Digital Equipment Corporation* (last modified Jan. 3, 1997) <<http://www.digital.com>> (on file with *The American University Law Review*).

291. See Hewlett Packard, *Welcome to Hewlett-Packard* (visited Jan. 3, 1997) <<http://www.hp.com>> (on file with *The American University Law Review*).

292. See IBM, *IBM Corporation* (last modified Jan. 3, 1997) <<http://www.ibm.com>> (on file with *The American University Law Review*).

293. See Tandem, *Tandem Computers WWW Home Page* (visited Jan. 3, 1997) <<http://www.tandem.com>> (on file with *The American University Law Review*).

294. See Unisys, *Welcome to Unisys* (visited Jan. 3, 1997) <<http://www.unisys.com>> (on file with *The American University Law Review*).

executives see a vital business need being frustrated by what they perceive as an over-concern on the part of the government to protect security.

Finally, let me mention the two legal challenges to the export controls of which I am aware. One is a suit that the Electronic Frontier Foundation ("EFF")<sup>295</sup> filed in the Northern District of California in February 1995 on behalf of Daniel Bernstein, who is a graduate student at UC-Berkeley.<sup>296</sup> Bernstein had developed a new encryption algorithm and wanted to distribute it via the Internet and to publish it in various places.<sup>297</sup> Bernstein requested permission to do this by applying for a commodity jurisdiction request with the State Department.<sup>298</sup> This request was denied, and he filed suit.<sup>299</sup>

There also is a suit in the district court in Washington, D.C., that Phil Karn filed in September 1995.<sup>300</sup> Basically, Karn wanted to distribute the same algorithms that appear in *Applied Cryptography*,<sup>301</sup> but he wanted to do it on a floppy disk.<sup>302</sup> Under the export controls, this book can be distributed overseas because it is a public, published text.<sup>303</sup> But the disk that contains the algorithms, which simply have been retyped from the book, cannot be exported.<sup>304</sup>

---

295. See Electronic Frontier Foundation, *EFFweb-The Electronic Frontier Foundation* (visited Jan. 7, 1997) <<http://www.eff.org>> (on file with *The American University Law Review*).

296. See *Bernstein v. United States Dep't of State*, 922 F. Supp. 1426, 1439 (N.D. Cal. 1996) (denying State Department summary judgment on plaintiff's First Amendment free speech, prior restraint, statutory vagueness, and overbreadth claims).

297. See *id.* at 1430.

298. See *id.* Bernstein submitted a commodity jurisdiction request to the State Department, ODTIC for a specific determination of whether the language files and academic papers describing his "snuffle" encryption algorithm were controlled under the USML. See *id.*

299. See *id.* at 1428. The ODTIC initially found that both the files and documentation were restricted defense articles and then reversed itself, restricting only the files. Bernstein's challenge stems from these decisions. See *id.* at 1430. In its opinion, the district court expressed dissatisfaction that the State Department sent written notice that Bernstein's paper was indeed listed on the USML in October 1993, but disavowed the decision in June 1995. See *id.* at 1434. The court rejected defendant's claim that the written source code is conduct, concluding instead that, as speech, even under the *O'Brien* test, Bernstein presented a colorable claim because the regulation may reach farther than justifiable in suppressing free expression. See *id.* at 1436-37; see also *United States v. O'Brien*, 391 U.S. 367, 376 (1968) (setting forth time, place, manner test on protected speech).

Subsequent to this discussion, Judge Patel ruled for Bernstein holding that the export controls were an invalid prior restraint under the First Amendment as applied to Bernstein's plans to publish his algorithm on the Internet and elsewhere and to discuss his algorithm in public. See *Bernstein v. United States Dep't of State*, 945 F. Supp. 1279 (N.D. Cal. 1996) (Memorandum and Order).

300. See *Karn v. United States Dep't of State*, 925 F. Supp. 1, 8-10 (D.D.C. 1996).

301. See SCHNEIER, *supra* note 70.

302. See *Karn*, 925 F. Supp. at 1.

303. See 22 C.F.R. § 121.1 (1996) (placing no specific restriction on written text).

304. See *id.* § 121.1 cat. XIII(b)(1) (restricting distribution of cryptographic software).



Karn filed a lawsuit challenging the restrictions that the export controls place on the floppy disk.<sup>305</sup>

Although neither of these cases effectively spells out all of the theories that might be argued against the encryption regulations, I have seen what I will call five different arguments that can be made. The first argument is that export controls are a form of prior restraint; it cannot be controlled until it is exported.<sup>306</sup> I am not sure that I understand fully the logic of this argument because in order for the export control to be effective, the software must be kept from being exported. It is not like somebody could be sued for damages once they have exported it. A second argument is that the controls are overbroad, vague, and lack standards.<sup>307</sup> A third argument that plaintiffs generally make is that the export controls are improper in that they are not narrowly tailored to achieve the appropriate governmental objective.<sup>308</sup> Fourth, there is the claim that the controls infringe on the right to speak, publish, and associate.<sup>309</sup> Finally, the fifth argument that is raised in these cases

---

305. See *Karn*, 925 F. Supp. at 1 (granting State Department summary judgment, finding that Congressional intent and political question doctrine barred further judicial review of State Department export control procedures, dismissing First Amendment constitutional challenge because government met substantial interest burden when it promulgated "content neutral" regulation to protect national security when Karn intended to export cryptographic software containing language source codes). The decision did not reach the issue of export of accompanying text because defendant did not attempt its regulation. See *id.*

306. See *Bernstein v. United States Dep't of State*, 922 F. Supp. 1426, 1437-38 (N.D. Cal. 1996) (finding colorable prior restraint claim when ITAR creates unreviewable administrative licensing scheme); *Karn*, 925 F. Supp. at 12 (denying prior restraint argument on technical grounds that plaintiff had no standing because government did not restrict "technical data" under challenged section); see also *New York Times v. United States*, 403 U.S. 713, 714 (1971) (finding prior restraint when government pursued temporary restraining orders to prevent *New York Times* and *Washington Post* publication of "top secret" Pentagon study on history of U.S. decision-making process in Vietnam); *Near v. Minnesota*, 283 U.S. 697, 723 (1931) (striking permanent injunction against newspaper criticizing local public officials as unconstitutional infringement on free speech).

307. See *Bernstein*, 922 F. Supp. at 1438-39 (finding court did not reach defendant's argument that export controls overbroad and vague sufficient to survive government's motion for summary judgment); *Karn*, 925 F. Supp. at 13 (rejecting overbreadth claim noting that State Department has narrowly read and applied "technical data" provision following decision in *United States v. Elder Indus.*, 579 F.2d 516 (1978)).

308. See *Karn*, 925 F. Supp. at 11-12 (finding narrow tailoring in export controls and deferring to executive and legislative branches' determination that proliferation of cryptographic products is security risk).

309. See *Bernstein*, 922 F. Supp. at 1434 (rejecting State Department arguments that source code is unprotected conduct). The court also rejected the State Department characterization of source code as expressible conduct that should be analyzed under the weak protection afforded First Amendment speech under the time, place, and manner test originating in *United States v. O'Brien*, 391 U.S. 367 (1968). See *Bernstein*, 922 F. Supp. at 1436. See also Eric B. Easton, *Closing the Barn Door after the Genie Is out of the Bag: Recognizing a "Futility Principle" in First Amendment Jurisprudence*, 45 DEPAUL L. REV. 55-56 (1995) (arguing that First Amendment imposes presumption against suppression of free speech when suppression would be futile because no sound governmental interest justifies suppression as in context of encryption export

is that there is a right to anonymity as part of free speech. For instance, there are cases in which the right to anonymity has been upheld in the distribution of political literature.<sup>310</sup> The argument raised in the export control cases is an extension of that: "I am entitled to be anonymous from my government."<sup>311</sup>

I am not a First Amendment scholar and I do not pretend to know how these cases will come out, but they raise the issues squarely. Not all speech is protected. Classification of national security information has been upheld.<sup>312</sup> The export controls themselves have been upheld against free speech challenges in particular settings.<sup>313</sup> So the questions that will be raised with respect to the continued regulation of encryption software will be whether there is a sufficiently compelling state interest here and whether the remedy is narrowly tailored to that interest.

The thing that I find interesting about these First Amendment arguments is that it is not entirely clear how the First Amendment applies to an export. I think you can argue that this chills free speech, but it does not chill free speech within the United States, after all. So there is a question of whether the First Amendment actually protects the U.S. citizen's right to communicate with non-U.S. citizens outside of the United States.

(Applause)

MR. GELLMAN: Thank you.

Unless I missed it, I think we may have set a record here; we have had two people discuss encryption policy, and no one has used the word "clipper."<sup>314</sup>

(Laughter)

---

controls).

310. See *McIntyre v. Ohio*, 115 S. Ct. 1511, 1524 (1995) (rejecting Ohio statutory prohibition against anonymous campaign literature distribution on First Amendment grounds).

311. See *id.* ("[T]he interest in having anonymous works enter the marketplace of ideas unquestionably outweighs any public interest in requiring disclosure as a condition of entry.").

312. See *United States v. Progressive Inc.*, 467 F. Supp. 990, 997 (W.D. Wis.) (enjoining newspaper release of technical information regarding H-bomb production when statute specifically restricted release of information that could pose national security risk and government made compelling argument to that end).

313. See *United States v. Elder Indus.*, 579 F.2d 516, 521-22 (9th Cir. 1978) (upholding conviction for exporting information significantly and directly related to a missile system).

314. The Clipper chip is a device designed by the NSA and used to encrypt voice conversations. See SCHNEIER, *supra* note 70, at 591; see also Froomkin, *supra* note 72, at 763-843 (giving detailed background on Clipper chip development and legislation, and summarizing Clipper chip controversy in context of First, Fourth, and Fifth Amendments); Judith Beth Prowda, *Privacy and Security of Data*, 64 *FORDHAM L. REV.* 738, 763-67 (1994) (discussing Clipper chip controversy in context of encryption export controls); Ryan, *supra* note 269 (describing administration's Clipper chip proposals).

That is not something that has happened in the last few years. I am not saying it is a bad thing.

I think one of Mr. Altman's main points is that the issues we are addressing are not just domestic issues. Clearly, there is an international component that makes our problems much more difficult. Additionally, it is not just a national security issue; we have other kinds of security issues at stake. The encryption technology has spawned the same kind of conflict we find with other kinds of Internet and communications-based issues. We have created capabilities that place pressures in other places.

This brings us to our last speaker, Mary Culnan, who will talk about privacy and related marketing issues on the Internet. This introduces another range of issues where various people who are participants in the Internet culture have conflicts of interest.

PROFESSOR CULNAN: Thank you, Mr. Gellman.

I am going to change the subject of the panel somewhat and talk about consumer privacy on the Internet. As Mr. Gellman said, I teach information systems. I have been doing this for a long time, and I recently have begun to teach electronic commerce. So that is the perspective I bring to the discussion. I also am the token non-attorney on this panel.

(Laughter)

I am going to talk about the tensions that arise when people disclose personal information. These are not new tensions; they have been around as long as people have been disclosing personal information. There is a great quote that illustrates these tensions made by Professor Steven Nock, a sociologist at the University of Virginia who wrote a book called *The Costs of Privacy*.<sup>315</sup> In this book, Professor Nock says, "A society of strangers is one of immense personal privacy. Surveillance is the cost of our privacy."<sup>316</sup> For instance, most of us do not live in small towns, but in small towns, everybody knows everybody's business. People do not have any privacy. It also is very easy to do business with anybody in a small town because you know people so well. For the rest of us, you cannot get along in the world without disclosing information because people will not do business with you. Most people accept the fact that you have to give up your privacy just to get along in society.<sup>317</sup>

---

315. STEVEN L. NOCK, *THE COSTS OF PRIVACY: SURVEILLANCE AND REPUTATION IN AMERICA* (1993).

316. *Id.* at 1 (italics omitted).

317. *See id.* at 14-15 (arguing that "credentials," such as driver's licenses and professional degrees, and "ordeals," such as drug and lie detector tests, are individual privacy waivers that are

Today, however, these tensions are being escalated by two interrelated commercial forces. One is that the world is a much more competitive place, and companies need more information to be successful. So there is a hunger to gain as much information as possible. The second force, which is related to the first, is that technology enables so many new things that we could not have imagined in earlier days. The Internet is a good example of where things are going.

So, I am not talking about security as other people have talked about it—hackers, unauthorized access, encryption, or eavesdropping. I am talking about the example used earlier—the bank that wants to make its customers' transactions private. I am referring to what the bank does with the personal information after it gets it from you. That is the difference.

I will talk about two issues that have emerged within the past few years. As I said, the tensions that surround these issues have existed for a long time, but the Internet has changed how we think about the issues that, before, applied only to printed advertising. The first item I want to discuss is personal information that is collected from the public spaces on the Internet, such as the newsgroups.<sup>318</sup> The second, and related topic, is the tracking of an individual's browsing behavior on the World Wide Web. Some people refer to this as looking at an individual's mouse tracks, or mouse droppings. I will talk about each of these issues, touch on what others have said about them, and then tell you what I think the problem is. Finally, I will talk about what I think can be done, and this is what I think makes the issues so interesting because, frankly, I do not know.

The first issue is called Marketry. In September 1995, a list broker named Marketry, Inc., of Seattle put a mailing list of 250,000 e-mail addresses on the market.<sup>319</sup> Someone else had collected these e-mail addresses from public spaces on the Internet, newsgroups, Web sites, and chat groups, where people go online and identify themselves in some way.<sup>320</sup> Not only did the list's creator collect the e-mail addresses, but he or she also categorized them based on what could be inferred from where the e-mail addresses had been located

---

accepted in exchange for access to credit and confidence in society); see also George P. Long III, *Who Are You?: Identity and Anonymity in Cyberspace*, 55 U. PITT. L. REV. 1177, 1200-12 (1994) (discussing anonymity debate in publicly accessible electronic media such as Internet).

318. See *supra* notes 43-44 and accompanying text (discussing and defining newsgroups).

319. See John Schwartz, *When Direct Mail Meets E-mail, Privacy Issue Is Not Fully Addressed*, WASH. POST, Oct. 9, 1995, at F19 (reporting that Marketry intended to add 250,000 e-mail addresses per month to its mailing list entitled "E-Mail Interest Selector").

320. See *id.*

on the Net.<sup>321</sup> Marketry divided its mailing list into eleven categories that include adult, computer groups, sports, religion, etc.<sup>322</sup> Marketry maintains this categorized list of e-mail addresses and sells the addresses to other companies that send commercial material to the consumers.<sup>323</sup>

Once word of this got out, there was something of a brouhaha. There were discussions on the Internet, at the Direct Marketing Association, and at the trade association's annual conference. And at one point, the Electronic Privacy Information Center ("EPIC"),<sup>324</sup> which is a public interest organization that is very active on the privacy front, posted Marketry's e-mail address, and this led to quite a bit of negative e-mail from people expressing their views as to why they thought Marketry's marketing this mailing list was not appropriate commercial behavior. A few weeks later, Marketry removed the e-mail list from the market.<sup>325</sup> But that was not the end of it. In fact, another company picked up the list, and the problem continues. That is one controversial area in which there are tensions between information disclosure and use.<sup>326</sup>

The second issue concerns Web browsing software that captures people's IP addresses<sup>327</sup> and follows users as they visit particular Web sites. I am not versed in the technical aspects of this software. The basic idea is that you can follow people's behavior as they are browsing by following their particular address to the Internet service provider. The technology is advancing so that ultimately people may be able to identify who you really are rather than simply where your

---

321. See *id.*

322. See *id.*

323. See *id.*

324. See EPIC, *supra* note 186 (sponsoring Web page devoted to protecting privacy interests and focusing on National Information Infrastructure ("NII") issues such as Clipper chip, medical records privacy, and consumer data sale).

325. See *Inside Lines*, COMPUTERWORLD, Oct. 30, 1995 (reporting "torrent of red hot flame mail" on Internet forcing Marketry out of e-mail address list sale); see also EPIC, *EPIC Privacy Archives* (last modified June 21, 1996) <<http://www.epic.org/privacy>> (on file with *The American University Law Review*) (stating that LEXIS-NEXIS stopped disclosing social security numbers after EPIC had exposed this practice in online posting).

326. See EPIC, *EPIC Junk Mail Page* (last modified June 19, 1996) <[http://www.epic.org/privacy/junk\\_mail](http://www.epic.org/privacy/junk_mail)> (on file with *The American University Law Review*) (reporting several pending privacy issues, including Virginia suit against *U.S. News and World Report* that challenged magazine's use of plaintiff's name without written consent in commercial subscriber list sale under Virginia Code).

327. See NEW RIDERS DEVELOPMENT GROUP, *INSIDE TCP/IP: EVERYTHING YOU NEED TO KNOW TO SUCCESSFULLY IMPLEMENT A TCP/IP NETWORK* 440-41 (2d ed. 1995) (defining Internet protocol "IP" as low-level tools that bind machines on Internet into useful whole). An IP is a 32-bit address assigned to hosts that identifies a node on the network and specifies routing information on an internetwork. See *id.* at 556; see also International Data Group, *Maxi Data* (last modified Aug. 6, 1996) <<http://www.idg.se/personal/linhe/qtcp.html>> (on file with *The American University Law Review*) (giving list of IP numbers, "white pages").

address is coming from. In some instances, the URL you use to bounce to the next site is passed along, too. So, for example, somebody could see that you had come to their site from *Playboy*<sup>328</sup> or the White House.<sup>329</sup>

This is an area in which discussion is just beginning. From the point of view of the organizations that are providing the Web sites, they obviously want to know who is using the sites in which they are investing their money. But the people whose information is being collected are, as they find out about this, becoming somewhat uneasy.

So what is the problem here? There is an ethical problem in that some of these practices violate what are called fair information practices,<sup>330</sup> which are fairness principles for balancing the tensions between the disclosure and the subsequent use of personal information. In one form or another, they are accepted worldwide.<sup>331</sup> In the United States, these principles have been codified into various privacy laws, such as the Fair Credit Reporting Act,<sup>332</sup> the Video Privacy Protection Act,<sup>333</sup> and the Drivers Privacy Protection Act.<sup>334</sup> There are two principles at the heart of these laws: knowledge and consent. People have the right to know when they are providing information and how that information will be used. They have a consent right in that if the information will be used for certain purposes, they can say no. In the private sector, this is typically done through an opt-out procedure where if you do not say no, the assumption is that you have given your permission for your information to be reused.

Yet there is a third principle involved which says that information should be used for compatible purposes. That is, if you collect

328. See *Playboy*, *Playboy Web Space* (visited Jan. 7, 1997) <<http://www.playboy.com>> (on file with *The American University Law Review*).

329. See Whitehouse Web Team, *Welcome to the Whitehouse* (visited Jan. 7, 1997) <<http://www.whitehouse.gov>> (on file with *The American University Law Review*).

330. See Prowda, *supra* note 314, at 745 (discussing fair information practices in light of government regulations in context of private and government data collection and citing shortcomings in ambiguous language of statute and limited legal remedies for violations); Laura B. Pincus & Clayton Trotter, *The Disparity Between Public and Private Sector Employee Privacy Protections: A Call for Legitimate Privacy Rights for Private Sector Workers*, 33 AM. BUS. L.J. 51, 77 (discussing potential legislation to get private business to follow fair information practices).

331. See Business Law Symposium, *The Information Superhighway: A Critical Discussion of Possibilities and Legal Implications*, 30 WAKE FOREST L. REV. 105, 117 (1995) (noting comparative privacy practices in United States and European countries and arguing that European protections cover both public and private sectors through "data protection laws"); Fred H. Cate, *Information Policy Making*, 48 FED. COMM. L.J. 57, 60 (discussing results of various international discussions on fair information practices).

332. 15 U.S.C. § 1681 (1994).

333. 18 U.S.C. § 2701 (1994).

334. Pub. L. No. 103-322, 108 Stat. 1796-2102 (1994) (codified as amended in scattered sections of 18 U.S.C.).

information for one purpose, you can use it only for related purposes. If you are planning to do something wildly different with an individual's personal information, you must inform the individual and give him or her a chance to say, "That was not what I had in mind."

In the Marketry example, people were not aware that their e-mail addresses were being collected, categorized, and sold. Even though they acted in a public space, it was not their intention that they would be placed on a mailing list because of this behavior. It was not an opt-out. If you think about it, if you use any of these discussion groups, it might be pretty difficult to opt-out because nobody owns the space. It is a public space. Another objection was that this information was being used to generate commercial, unwanted, e-mail solicitations. Many people feel very strongly that this is an unacceptable practice.<sup>335</sup>

The same thing occurs in the Web browsing example in that people are not aware that information regarding their behavior is being collected, and people are not offered an opt-out. This becomes an ethical issue because the law does not speak to it.

The second issue is that the cultural norms regarding marketing, in general, are changing. Recently, due to technology and competitive pressures, there has been a move to one-to-one marketing, or relationship marketing, where companies want to deal with us as individuals. People like this because they get wonderful service.

The paradigm in the non-electronic world is that if you do not opt out, you will hear from the marketer. In the electronic world, this paradigm is shifting. On the Net, people are saying to marketers, "We will come to you. Put your stuff out there, and if we want it, we will find it, but don't you write to us." That is one of the changing cultural norms.

The second cultural change is a shift in the kind of information that is being gathered. In the non-electronic world, much of the information that is collected and used for marketing purposes is transaction-based information where people have made some kind of overt act. They have filled out a form; they have made a purchase; they have requested a catalog; they have called an "800-number"; they have filled out a survey; they have filled out a public record. In the electronic world, however, a lot of the information is being gathered from actions that are not transaction-based, or are not overt acts.

---

335. See ALLISON, *supra* note 22, at 41-42 (describing Green Card Incident and stating that sending unsolicited e-mail, called spamming, is frowned upon); *supra* notes 94-96 and accompanying text (discussing spamming as violation of netiquette).

Instead, you are simply browsing in the privacy of your own home. Currently, nobody keeps track of whether you read front to back or back to front, or whether you pause on certain pages or skip them altogether. This kind of information is very useful to companies. They can determine when you look through the catalog, or perhaps why you have not bought anything from the catalog when the company has sent it to you each month. So one of the concerns is whether your behavior should be subject to what I believe is surveillance. This view has not been accepted fully because it is brand-new, and people have not sorted it out.

The other part of this issue is just the idea that the information being gathered is not part of an overt act. It is not a transaction and it is not a record. It is speech. Some people question whether it is the same kind of thing as filling out a form or having provided information on a record.

The third part of the changing norms issue is that the Net does not have any geographical boundaries; what is legally or ethically permissible in one country is not always permissible in another country. This, of course, is another source of controversy. My favorite example of this is a telephone bill. In the United States, I cannot imagine that any of us would pay our telephone bill if it were not itemized. We would never get a bottom-line bill from the telephone company and say, "Yes, you are right. Here is my money." In other countries, telephone records are viewed as much more private. In fact, some people would not permit the receipt of an itemized bill. Many phone companies in Europe are providing itemization as an added value to customers, and people pay extra for an itemized bill. This is an interesting cultural difference that needs to be addressed.

So, what are some of the solutions for this? In the Web browsing area, somebody is paying to put up the Web site. If you visit their Web site, they have some right to know who you are—almost as if you have established a relationship. I do not think everyone agrees with this argument. I also think that people need to know the terms of the deal. Currently, there is no good knowledge; there is no good disclosure; and there really is no chance to say, "I really do not want you to take my information and sell it to somebody else."

The newsgroup<sup>336</sup> is a much more difficult issue because it is a public space. I think the real risk with newsgroups is that speech will be limited and participation restricted if people find that what they

---

336. See *supra* notes 43-44 and accompanying text (discussing newsgroups).



say in these newsgroups ends up in areas they find objectionable but that still are legal. Eventually, people will say, "I do not want to participate," and we will lose a lot of the benefits of newsgroups.

On one of the search engines called DejaNews,<sup>337</sup> which actually indexes all the newsgroup postings, there is a setting where if you check off this field, DejaNews will not profile your information. This feature therefore could balance people's privacy interests if they do not want to be identified for different topics.<sup>338</sup>

I think we will see these issues percolate for a while.

(Applause)

MR. GELLMAN: Thank you, Professor Culnan.

Let me just add a few words. I think that one of the key issues growing out of the Internet is that of jurisdiction. Everybody has touched on that in one way or another, and I think it is one of the fundamental problems that we face. For those of you who use the Internet for communications or transactions, this is a very interesting problem. For instance, say a British citizen has a credit card from an American bank and uses a Web browser in Italy to purchase a product in Australia and has that item sent to his second home in Poland. What law applies? What controls apply to the information that is generated by all of this activity?

It is very easy on the Net to have a transaction where the parties do not know each other. I do not necessarily know where the merchant who is providing me with a service resides. I may not know what country he is in. He may just have an account that says "aol.com." The same thing applies to a customer. The merchant may not know the country in which the customer resides. So sometimes we do not know what country the parties are in, much less which set of rules should apply to these complicated transactions. This situation makes it that much more difficult to establish rules and norms and to determine how to control all the activities that occur on the Net.<sup>339</sup>

I actually have a solution. It is a limited, partial solution. It is something called the Virtual Magistrate, which is a relatively new activity sponsored by the Cyberspace Law Institute and the National

---

337. See Deja News Research Service, *Deja News—The Premier Usenet Newsgroup Search Utility* (visited Aug. 8, 1996) <<http://www.dejanews.com>> (on file with *The American University Law Review*) (sponsoring news data base search engine).

338. See Deja News Research Service, *Frequently Asked Questions* (visited Aug. 8, 1996) <<http://www.dejanews.com/help/dnfaq.html>> (on file with *The American University Law Review*) (describing Usenet practice giving newsgroups posting information the right to exclude information from particular databases).

339. See generally Robert Gellman, Symposium, *Can Privacy Be Regulated Effectively on a National Level? Thoughts on the Possible Need for International Privacy Rules*, 41 VILL. L. REV. 129 (1996).

Center for Automated Information Research.<sup>340</sup> The Virtual Magistrate was announced in early 1996, and I am the project's executive director. The Virtual Magistrate is an arbitration system for the Net in which we try to use the Net to resolve disputes. It is a form of the Net policing itself. It is a limited kind of activity, as we envision it. All of this is somewhat theoretical at present, and it is a pilot project.

Some classic disputes arise from Internet activities. For example, somebody posts a message on the Net, and another person says, "That violates my copyright." Should the message stay up? Should it come down? There already has been litigation regarding this issue.<sup>341</sup> What do you do? What the Virtual Magistrate says is, if you bring us the dispute, we will make a decision within three days about whether that message should stay up or come down. The Virtual Magistrate is a limited kind of decision-maker because broader, complicated legal disputes cannot be resolved in three days.

Legal questions that arise on the Net require fast action because of the Net's nature. Things that are available on the Net are available everywhere around the world at the same time. Ultimately, if the Virtual Magistrate is successful, it may create some kind of cyberlaw. It also may create standards that people can use to make decisions about their activities on the Net.

The Virtual Magistrate is willing to accept disputes from networks anywhere around the world. We do not care what countries the parties are in, and we do not promise to apply the law of any given jurisdiction. We will apply whatever law is appropriate in the circumstances. I think we can get away with that given the limited nature of what we are doing, but that remains to be seen. This is, as I said, a limited kind of solution to some of the conflicts that arise on the Net. It certainly is an experiment worth trying.

---

340. See National Center for Automated Information Research, *The Virtual Magistrate Project* (visited Aug. 8, 1996) <<http://vmag.law.vill.edu:8080>> (on file with *The American University Law Review*) (providing decision in first arbitrated case *Tierney and Email America*, VM Docket No. 96-001, in which magistrate resolved complaint against Email America's practice of posting sale of e-mail lists on AOL, resulting in removal of lists).

341. See *ProCD, Inc. v. Zeidenberg*, 908 F. Supp. 640, 644 (W.D. Wis. 1996) (finding no copyright infringement when defendant used protected software for own purposes, consistent with plaintiff's copyright, and posted phone listings contained in software on Internet); *Religious Tech. Ctr. v. Netcom Online Communication Servs., Inc.*, 923 F. Supp. 1231, 1265 (N.D. Cal. 1995) (prohibiting former Church of Scientology minister from posting certain copyrighted church materials on Internet); see also Ronald Abramson, *Trademarks and the Internet*, in *ADVANCED SEMINAR ON TRADEMARK LAW 1996*, at 299 (PLI Pats. Copyrights, Trademarks, and Literary Prop. Course Handbook Series No. 438, 1996) (offering practitioners guide to disputes involving trademark protection for domain names on Internet and discussing NSI domain name dispute policy).

We have a Web page,<sup>342</sup> so everything we do will be available for people to see. The people will be able to evaluate what we are doing, divine their own interpretations of our decisions, and draw their own conclusions. The communications we exchange during the decision-making period will not be made public during that period. But once the decision has been made, both the decision and the communications we exchanged to arrive at that decision will be made public, unless there is an extraordinary circumstance. For example, if there is a dispute involving disclosure of a trade secret, we will find a way to disseminate the information regarding the decision without divulging the trade secret. We do not know exactly how we will do all of these things because we have not done them yet, but we are aware of the problem.

Thank you.

(Applause)

## VI. DOING BUSINESS ON THE INTERNET

MR. BRODY: It is a pleasure to be here. I will limit my comments to some general business issues that I believe are very important in understanding the demand that ultimately is placed on the legal community and on law firms to provide advice, counsel, guidance, and other solutions in an area of emerging commerce where there is a lot of new ground to plow. My focus is on the demand that is driving bankers and companies to turn to the Internet and to other forms of electronic commerce. I take this approach because I believe that in understanding the demand, you will understand where the pressure actually comes from—the pressure that is placed on lawyers, on providers of technology, and on the manufacturers of hardware and software to produce good ideas, practical solutions, and things that plug into other things, things that light up screens, and things that let you do what you want to do.

It is very hard to discern from the media where the demand for all this technology is coming from. We believe that it stems from the individual's desire to be able to work more easily, more quickly, and more conveniently with the bank. Consumers want the ability to pull a card out of their wallets to buy gasoline, to pay bills, or to work with their spending power, whether it is by making deposits or credit more easily.

The word "bank" can be a surrogate term for provider of credit or spending power. That spending power is available in one of two

---

342. See National Center for Automated Information Research, *supra* note 340.

forms: either you have it on deposit because you have put it there, or you have qualified for credit. Twenty-five years ago, we had that spending power primarily in the form of paper checks and some credit cards, but that was about it. The entire push through technology for practical solutions has been in the area of commerce, and it has enabled the consumer to transact more easily, more quickly, and from more places than just where he or she might be physically.

The "consumer" in this case can be you, an individual retail outlet, a company that transacts with the consumer, or a company that transacts with other companies in business-to-business commerce. At the end of the day, if the consumer wants to buy or sell something, he has to close the transaction. The whole application of technology has sought to make it easier, less cumbersome, less reliant on paper, and now less reliant on cash, bank notes, and coin, to close the transaction. The pressure on technology, whether it is the Internet, online processing,<sup>343</sup> offline processing,<sup>344</sup> or a combination of these, will enable that transaction to be closed, so that at the end of the day the purchaser and the seller know what has been transacted and know that money has changed hands the right way.

Banks today, as you probably know, are working with one form or another of a pilot program to put purchasing power on cards. Sooner, rather than later, those cards will carry multiple accounts. You will use those accounts; companies will use those accounts; governments will use those accounts, or will let people working for the government use those accounts, to transact one way or another. You will keep your frequent flyer miles on those cards. You will keep your medical information on those cards. And you will put those cards in a slot somewhere to get the information you need to spend money, to trade it, or to collect it.

The issues that this raises for the industry, and by extension for the legal community, are: What happens to that information while it is being handled? How can it be protected? How can you, as the consumer, be sure that the information is being handled securely? And how can you be sure that what is yours remains yours, including not only information, but as we move toward cash cards and stored-value cards,<sup>345</sup> your actual money. What happens when you lose

---

343. "Online processing" refers to the use of a central computer or database to monitor the value of debit or stored-value cards. See *infra* notes 361-70 and accompanying text (discussing stored-value products).

344. "Offline processing" does not use a central computer or database to track the value of debit or stored-value cards. Instead, the card records its own value by way of a magnetic strip, computer chip or other record.

345. See *infra* note 361 and accompanying text (defining stored-value cards).

your card? What do you have to know about beforehand if you lose it? Where can you turn if you do lose it, or if someone gets it who should not have it?

These are very elemental questions, and they do not affect just the consumer. Companies now are using the Internet more intensely to trade with one another. It is far less expensive to put one copy of an electronic catalog up on your own Internet server, give your Internet or Website address to your customers, including other businesses, and let them leaf through that catalog electronically to make a purchase than it is to ship a lot of paper through the mail, most of which gets thrown out anyway. But it is the real commerce-related information, the buying, the selling, the stored value, and the value that you ultimately carry on your card that is pushing the industry, and it is pushing it rapidly.

I know that these issues raise legal questions, and I believe Mr. Parker now will turn to the specific issues that the legal community must address in connection with facilitating and protecting that electronic commerce.

MR. PARKER: Thanks, Mr. Brody.

I will talk a bit about the legal and regulatory issues involved in banking on the Internet. This is a very underdeveloped area of the law. I recently did a conference call about the emerging law of cyberbanking, and the truth is that there is no law of cyberbanking. That makes it exciting for lawyers because lawyers can create that law. There is no doubt in my mind that in ten to fifteen years, we will see a wealth of law, but currently, we do not have that law.

The first question that I think we should address is, what is banking on the Internet? It is fascinating. I took a look a few weeks ago, and counted that there are more than 200 banks are on the Internet. What does that really mean? Well, only eight banks are doing any transactions.<sup>346</sup> Basically, 192 of these banks are there doing mar-

---

346. See Bank of America, *HomeBanking Overview* (visited July 20, 1996) <<http://www.bankamerica.com/p-finance/homebanking/homebanking.html>> (on file with *The American University Law Review*) (explaining that customers can access account information through HomeBanking with Web browser); Bank of Boston, *PC Banking* (visited July 20, 1996) <<http://www.bkb.com/retail/pcbank.htm>> (on file with *The American University Law Review*) (stating that customers can pay bills, transfer funds and access account information electronically); BayBank, *BayBank HomeLink* (last modified Aug. 4, 1996) <<http://www.baybank.com/products/homelink/homelink.html>> (on file with *The American University Law Review*) (enumerating advantages of HomeLink package, including electronic bill payment, fund transfers, and account information); Centura Bank, *Centura—Online Money Management* (last modified Oct. 26, 1996) <<http://www.centura.com/money/online.html>> (on file with *The American University Law Review*) (stating advantages of online money management package); Home Savings of America, *Home Savings Online* (visited Feb. 15, 1997) <<http://www.homesavings.com>> (on file with *The American University Law Review*) (listing online

keting. Some have nice Web pages. Some have not-so-nice Web pages. Depending on whether they are my clients governs whether I think they have nice Web pages or not. But truthfully, very few banks are actually doing anything.

What do we think of when we think of banking? What are the three things you really do? You make deposits; you make withdrawals; and you do loan transactions. Well, no bank today completes a loan transaction over the Net. There are some technological reasons, and there are some legal reasons as to why banks will not perform loan transactions over the Net. But there are any number of banks that take loan applications over the Net. That is no different than taking loan applications over the telephone; you are just typing it into a computer instead of talking to an operator. The key will be actually completing that transaction over the Net.

Also, no bank today takes deposits over the Net. That is pretty hard because it is hard to get that cash into your computer at home and get it into the bank—hard right now.

So, Internet banking today effectively is nothing more than a number of banks that are allowing you to pay bills, *à la* Intuit Quicken,<sup>347</sup> or Microsoft Money<sup>348</sup> models. Or they are letting you check your balances. Some will allow you to transfer money from one account to another. But although it is a form of banking—and I do not want to minimize it—the fact is that it is not really banking in a true sense. The really big question is whether this form of banking, as it sits now, is enough to get people hooked.

The statistics are not good right now. I mean, approximately thirty-five million homes have PCs in this country.<sup>349</sup> I believe that at last

features); Salem Five Cents Savings Bank, *Salem Five—VirtualBanking* (visited July 20, 1996) <<http://www.salemfive.com/virtualbanking.html>> (on file with *The American University Law Review*) (advertising VirtualBanking package that permits customers to estimate mortgage potentials, make electronic payments, and monitor accounts); Security First National Bank, *Welcome to the Bank Demonstration Area!* (visited July 20, 1996) <<http://www.sfnb.com/demos/quickdemo/lastpage.html>> (on file with *The American University Law Review*) (describing features accessible through Web browser, including account reporting, electronic payment and check imaging); Wells Fargo Bank, *What is Online Banking* (visited July 20, 1996) <<http://wellsfargo.com/per/online/center/whatis>> (on file with *The American University Law Review*) (touting features of Online Banking service, including account reporting and electronic payment).

347. Quicken is a computer program produced by Intuit, Inc. that helps users organize their finances. See Intuit, Inc., *Quicken Financial Network* (visited July 20, 1996) <<http://www.intuit.com/quicken>> (on file with *The American University Law Review*).

348. Microsoft Money is a personal finance management program similar to Quicken. See Microsoft, Inc., *MoneyZone* (visited Feb. 17, 1997) <<http://www.microsoft.com/moneyzone/>> (on file with *The American University Law Review*).

349. Software Publishers Association, a Washington, D.C. organization, released a study at its 1996 Spring Symposium indicating that approximately 33 million households own a PC. See Roger Lanctot & Kathleen Richards, *PC Demographics See Significant Shift*, COMPUTER RETAIL WK.,

count under 100,000 people were doing true banking online.<sup>350</sup> It is a very small number, but it is growing dramatically and exponentially.<sup>351</sup> Nonetheless, it is still a very small share of all the banking that is being done out there.

What are the impediments to true Internet banking? Well, there are technological impediments. Right now, as I said, you cannot get your money into, or out of, the computer. That will be key. The fact is that you will not get away from a branch model of ATMs—that is, stand-alone machines sitting in a mall or sitting in some other building—if you cannot get your money into the computer or out of the computer. And, more importantly, you cannot sign documents electronically. Mr. Sabett will talk to you about digital signatures in a little while, so I will talk only a little bit about it as it relates to my topic. But Mr. Sabett actually will walk you through the encryption models. I believe that we are not going to be able to facilitate either electronic banking or electronic commerce over the Net until we get to the state of the law where digital signatures are accepted. Yes, you will be able to access your credit cards and pay for goods over the Net if you have trust in the secure socket layers and things that provide the security.<sup>352</sup> But you will not be able to complete complicated,

---

Mar. 18, 1996, at 1. A survey performed by computer market analysts reports that nearly two million households purchased a PC during October, November, and December 1995 alone. *See id.* Research firms concur that roughly 35% of American households own a computer. *See id.*

350. In December 1995, Jupiter Communications, a New York-based market research firm, estimated that approximately 80,000 people use online banking services. *See* Melanie Matthews, *More Leaving Long Lines to Do Banking Online*, DETROIT NEWS, May 8, 1996, at J3. Estimates regarding the number of computer users who bank online vary. *See* Todd Copilevitz, *Checkmates; Microsoft Battles Intuit for Share of Personal Finance Market*, DALLAS MORNING NEWS, Dec. 26, 1995, at 1D (reporting analyst's conclusion that between two and three hundred thousand consumers pay bills electronically).

351. According to one report, slightly more than two million U.S. households currently bank online, and 2.5 million more likely will begin using online banking in 1997. *See* Ellen Pearlman, *Online Banking: Growing Interest, But What's the Yield?*, HOME P.C., Jan. 1, 1997, at 15. Jupiter Communications predicts that 13 million homes will bank online by 2000. *See* L.A. Daily News Rep., *Online Banking Lining Up Customers*, TAMPA TRIB., Business/Finance, May 12, 1996, at 1.

352. Netscape Navigator, a popular Web browser produced by Netscape Communications, utilizes the Secure Sockets Layer ("SSL") system to ensure the confidentiality of transactions made by Netscape users over the Internet. *See* John Markoff, *Secure Digital Transactions Just Got a Little Less Secure*, N.Y. TIMES, Dec. 11, 1995, at A17 (explaining operation of SSL system). During a transaction, SSL scrambles confidential information (such as a credit card number) through use of a publicly known numerical key and transmits the information to the merchant's computer. *See id.* The merchant's computer decodes the transmission with a private key known only to itself. *See id.*

Netscape distributed its Web browser freely, promoting SSL as a standard for electronic commerce to sell licenses to merchants. *See* David Einstein, *Netscape Setting Cyber Standards*, S.F. CHRON., Mar. 31, 1995, at B1. Netscape's future may depend on the public's faith in the security of online transactions. *See* Markoff, *supra*, at A17. Recent Stanford graduate Paul C. Kocher demonstrated a flaw in SSL on November 29, 1995. *See id.* He observed that a computer hacker could obtain the merchant's private decoding key by recording the amount of time it takes the computer to unscramble messages. *See id.* Accounting for the speed at

commercial transactions until you are able to verify your identity electronically.

What are the legal impediments? The big one right here is that the technology is ahead of the law. No doubt about it, there is, as Mr. Sabett will tell you, great technology for doing digital signatures. We will get to this a little bit later, but right now only two states, Utah and California, have passed digital signature statutes.<sup>353</sup> With the rest of the states, even if you could sign documents electronically, there are statute of frauds impediments, arguably. That is, what is a writing if it is electronic? Current regulations cause a tremendous amount of uncertainty.<sup>354</sup> The regulators just have not caught up to the technology.<sup>355</sup> As a result, you have an environment of electronic banking that is trying to use a system of rules, laws, and regulations that were put into effect before the Internet was ever thought of as a conduit for commercial transactions or cyberbanking.

Again, I go back to the technological issues. Right now there is no technological basis for getting the money in and out. Certainly there are electronic fund transfers and automated clearinghouse transactions. For instance, if you have a direct deposit into your checking account, your paycheck gets there electronically through a fund wire or through a company that does automatic clearinghouse transactions.

---

which the merchant's computer operates, Kocher found that a hacker could deduce a short list of possible numerical key combinations. *See id.* Trying each number in this list, the hacker eventually could arrive at the private key and thus acquire confidential information. *See id.* Although Netscape revised SSL to eliminate this vulnerability, the company offers a \$1000 bounty to those who find a new security problem. *See id.*

353. *See* CAL. GOV'T CODE § 16.5 (West 1996); UTAH CODE ANN. §§ 46-3-101 to -504 (1995). Florida and Washington also recently adopted digital signature laws. *See infra* notes 345-55, 374, 378, 380.

354. As the pace of technological development outstrips legislative comprehension, lawmakers have produced expansive definitions of terms such as "writing," that are still too narrow. Florida's former statute defined writings and recordings to "include letters, words, or numbers, or their equivalent, set down by handwriting, typewriting, printing, photostating, photography, magnetic impulse, mechanical or electronic recording, or other form of data compilation, upon paper, wood, stone, recording tape, or other materials." FLA. STAT. ANN. ch. 90.951 (Harrison 1979), amended by 1996 Fla. Laws ch. 224. Florida's legislature revised this definition on May 25, 1996, to answer the question of whether electronic transmissions over the Internet are "writings" if they are not recorded or set down upon some media. *See* Electronic Signature Act, 1996 Fla. Laws ch. 224 (amending definition of "writing" to include "information which is created or stored in any electronic media and is retrievable in perceivable form").

355. Although Florida broadened its definition of "writing," many other states still employ statutory language similar to Florida's old definition that does not account for technological advances. *See, e.g.,* HAW. R. EVID. 1001(1) (codified at HAW. REV. STAT. § 626-1 (1985 & Supp. 1996)); OKLA. STAT. ANN. tit. 12, § 3001 (West 1993 & Supp. 1996); WIS. STAT. ANN. § 910.01 (West 1993). Additionally, one commentator has criticized the authors of the Uniform Commercial Code for failing to account for technological advances. *See* Stephen C. Veltri, *Should Foreign Exchange Be "Foreign" to Article Two of the Uniform Commercial Code?*, 27 CORNELL INT'L L.J. 343, 363-64 (1994) (noting that U.C.C. defines term "writings" broadly but does not seem to include communication by modem).



But that is developing in a very limited way. It does not give you, as the consumer, the ability to put money into your account, electronically, at least without a great degree of difficulty. You might be able to call your bank and say, "I want money wired to my account," but that will not ever facilitate true electronic banking.

You also can use automatic clearinghouse transactions to pay bills. There are three models, or three companies, out there that enable you to do this: Intuit Quicken;<sup>356</sup> CheckFree;<sup>357</sup> and Microsoft Money,<sup>358</sup> which now is signed up with Visa Interactive.<sup>359</sup> You can use any of these models to pay a bill. You type in the merchant information as to where the payment should go, and then they pay your bill electronically. Or do they? In the vast majority of those transactions, Intuit, CheckFree, and Visa are cutting checks to those merchants. You ask them, via your computer, to pay Pepco,<sup>360</sup> and they cut a check to Pepco—true electronic banking at its best.

(Laughter)

It just shows you that we are in the early stages of this. One out of ten times you will find a merchant with an electronic payment, but, at least, it is something.

I believe, and I think Mr. Brody will agree with me, that stored-value cards<sup>361</sup> will be the wave of how you get money in and out of

---

356. See Intuit, Inc., *supra* note 347.

357. CheckFree is an automated monthly payment and electronic fund transfer service. Its payment software is included in several financial software packages targeted at consumers. See CheckFree Corp., *CheckFree* (visited Feb. 15, 1997) <<http://www.checkfree.com/>> (on file with *The American University Law Review*).

358. See Microsoft Inc., *supra* note 348.

359. See Paul Noglows, *Microsoft, Visa Look to Give Intuit a Run For Its Money*, INTER@CTIVE WK., ¶ 2 (Feb. 15, 1996) <<http://www.zdnet.com/intweek/daily/m960215b.html>> (on file with *The American University Law Review*) (reporting agreement between Visa and Microsoft to compete with Intuit in the personal finance software market). Visa Interactive extends electronic banking services, such as account inquiries, fund transfers, and bill payment, to customers at banks affiliated with Visa. See Visa, Inc., *Tomorrow: Electronic Banking and Bill Payment* (visited July 20, 1996) <<http://www.visa.com/cgi-bin/vee/sf/ebank.html?2+0>> (on file with *The American University Law Review*) (introducing Visa Interactive).

360. "Pepco" is an acronym for the Potomac Electric Power Company, the utility that serves the Washington, D.C., area. See Letter from Christian H. Poindexter, Chairman of the Board and Chief Executive Officer, Baltimore Gas & Electric (Feb. 12, 1996) <<http://www.bge.com/finance/finchrlt.html>> (on file with *The American University Law Review*). In 1995, Pepco agreed to merge with nearby utility Baltimore Gas and Electric. After final regulatory approval, the two companies will form Constellation Energy Corporation. See *id.*

361. Stored-value cards maintain a record of monetary value created when a consumer exchanges conventional forms of money (bills, coins, or checks) for other, more convenient forms, such as a public transit fare card. Merchants can debit the balance recorded on the card as they would accept cash for goods or services. Sophisticated stored-value cards allow the consumer to store more money and to apply that value toward a greater number of uses. See 61 Fed. Reg. 19,696, 19,698 (1996) (to be codified at 12 C.F.R. § 205.16) (defining stored-value products).

your computer in the future.<sup>362</sup> A lot of banks will issue stand-alone stored-value cards eventually. Hopefully, one day you will be able to put money on these cards. Right now you can do that at ATM-like machines. But in the future there will be nothing that prevents us from putting this kind of card into a computer, or into some kind of reader, downloading \$200 worth of cash onto the card, and going to various merchants who now only take cash—a hot dog vendor, McDonald's, the people who do not take credit or debit cards right now—and using the card to pay for your goods. In fact, there are some test programs in which people are getting paid on cards like this. For instance, those people who choose not to have electronic fund transactions, particularly low-wage or minimum-wage earners, are getting paid on these kinds of cards. Their paychecks are not more than \$200 or \$300, which is the amount of money for which these cards are designed. So they get paid on this card and can use it for various transactions. Stored-value cards take this technology even further in that you will have the ability to take money out of your computer and to put money into your computer. I believe the marriage of these two technologies is the key mechanism that will allow Internet banking to take off.

Stored-value cards and the technology associated with them are much more advanced in the marketplace than Internet banking is right now. NationsBank,<sup>363</sup> Wachovia,<sup>364</sup> and First Union<sup>365</sup> will try to get people to rely solely on these cards for cash-like transactions.<sup>366</sup> It will be very interesting to see how successful they are. Almost every merchant at the Olympics will have stored-value card readers. It will be very easy to get stored-value cards, and it will be very interesting to see, from a test perspective, if people really use them.<sup>367</sup>

---

362. See, e.g., *7 Companies Buy Rights to Smart-Card Venture*, SAN DIEGO UNION-TRIB., Dec. 6, 1996, at C1 (stating companies including Chase Manhattan Corp., AT&T, Discover & Dean Witter plan to create a network for smartcard transactions).

363. See NationsBank, *NationsBank Home Page* (visited Jan. 29, 1997) <<http://www.nationsbank.com/>> (on file with *The American University Law Review*).

364. See Wachovia, *Wachovia, What's New* (visited Jan. 29, 1997) <<http://www.wachovia.com/>> (on file with *The American University Law Review*).

365. See First Union, *Welcome to First Union* (visited Jan. 29, 1997) <<http://www.firstunion.com/>> (on file with *The American University Law Review*).

366. See Gannett News Service, *Big Test for Smart Cards in Atlanta*, SACRAMENTO BEE, July 18, 1996, at F2 (discussing preparation for use of stored-value cards at Olympics, including installation of data lines for card reader terminals and preliminary consumer tests).

367. Stored-value cards encountered a mixed reception at the Olympics, which took place three months after this discussion. Some merchants reported satisfaction with the Visa Cash card experiment, noting that consumers used their cards 46,744 times during the first five days of the Games. See Christine Dugas, *Visa Cash Card Proving Popular in Olympic Trial*, USA TODAY, July 29, 1996, at 2B. Others complained that activating electronic card readers was difficult and that customers frequently opted to use credit cards instead of the stored-value cards. See Susan

Before all of this happens, however, every merchant will need a PC-based card reader, and someone will have to provide all of the merchants with these new terminals. That is an expensive thing to do. But the economics seem to be there. The people who put these things together tell me that the transaction cost for using this type of card is less than one cent, versus about 4.3 cents for a cash transaction. That is the actual cost of handling cash.<sup>368</sup> As you can imagine, the 7-Elevens<sup>369</sup> of this world that routinely get robbed of their cash appreciate stored-value cards.

The big question, however, is consumer acceptance. All of these technological products seem to have twenty-year life cycles. ATMs first were introduced approximately twenty years ago and took about ten years to take off.<sup>370</sup> In 1995, for the first time in the history of banking, people did more transactions using ATMs than they did using brick-and-mortar branches. But it took twenty years to get to that level, so I do not think we can expect Internet banking to happen super-quickly. On the other hand, technology today pushes things farther ahead faster than it did twenty years ago.

There are other technological issues as well. For instance, signing documents. Mr. Sabett will talk to you in detail about digital signatures.<sup>371</sup> Essentially, a digital signature relies upon an algorithm that produces a public key and a private key.<sup>372</sup> Everybody in the world can have my public key. I use my private key, which only I know, to sign documents through somebody out there certifying that my public key is me. It will allow, for the first time, electronic authentication of who I am.<sup>373</sup> Other than with small consumer

---

Tomp, *Visa Cash Cards Don't Bowl Over the Retail and Consumer Judges at Summer Games*, DETROIT NEWS, Aug. 1, 1996, at B1. By the end of July, Visa had registered 269,000 card transactions in the past three months totalling \$951,000 amidst reports of consumer skepticism regarding the number of merchants accepting the cards. See Patti Bond, *Cash Cards Off to a Slow Start; Varied Opinions: Some Users Are Fervent, But Much of the Public Isn't Because the Cards Aren't Accepted Everywhere*, ATLANTA J. & CONST., Aug. 2, 1996, at 1D.

368. A representative from First Union Bank pointed out that stored-value card transactions take about three seconds to process, as opposed to 20-25 seconds for a conventional customer transaction in which a customer pays with cash, and a cashier returns the change. See Gannett News Service, *supra* note 366, at F2.

369. See Southland Corporation, *7-Eleven Home Page* (visited Feb. 17, 1997) <<http://www.7elevenusa.com/>> (on file with *The American University Law Review*).

370. See *An Explosive Mixture*, CARDS INT'L, Aug. 16, 1996, at 4.

371. See *infra* pp. 427-33.

372. See SCHNEIER, *supra* note 70, at 34-41 (describing importance of digital signatures and setting forth public key algorithms used for digital signatures).

373. See *id.* at 37 (stating that digital signature technology will allow first person to encrypt, and thus sign, document with private key, and then send document to second person, who uses first person's public key to decrypt document and verify signature).

transactions, when we talk about commercial transactions, signing will be a key issue.

Right now, if I were to sign a document and make some individual marks on it, you should be able to tell which is the original even if you have a great copy machine. One of the problems that we will have when we start signing documents electronically is, which is the original and which is the copy? In the digital world, a copy and an original are bit-for-bit the same. So, when we start talking about negotiable instruments, which rely upon the original being the original, it will be a challenge to get digital negotiable instruments that go through the system with endorsements. I think this challenge ultimately will be overcome; it will have to be overcome if banking is to rely upon digital products, particularly in the loan area. But it is a challenge that is out there right now.

When you see the digital signature laws, you will note that they specifically do not deal with negotiability because it is such a troublesome concept for digital negotiable instruments.<sup>374</sup> Authentication is the key to all of this.<sup>375</sup> We need to have an electronic way to make sure that I am who I say I am. You know, the written signature is not perfect. But right now when I sign my name on paper, at least I can have fifteen experts come into court and say, "Yeah, Mr. Parker, he loops that loop in a certain way; therefore, I can tell within a 97.654 degree of accuracy that this signature is, in fact, his." We need to reach that comfort level with digital signatures before we will be able to sign documents electronically in a commercial marketplace.

With digital signatures, you face the repudiation issue, which ties into the authentication issue. Banks are very concerned with repudiation. It happens all the time in the credit arena; somebody completes a transaction and then says, "It wasn't me. I'm not the one who gave that credit card number over the phone; I didn't go into that store and sign that credit card slip." So we also have to reach a

---

374. See CAL. GOV'T CODE § 16.5 (West 1996) (requiring digital signatures to be "capable of verification" without discussing authentication issue); UTAH CODE ANN. §§ 46-3-401 (1995) (declaring that state will presume that properly registered digital signatures are authentic). But see Washington Electronic Authentication Act, WASH. REV. CODE ANN. § 19.34 (West 1996) (attempting to differentiate between "original" and other signatures). The newly enacted Washington regulation states:

A copy of a digitally signed message is as effective, valid, and enforceable as the original of the message, unless it is evident that the signer designated an instance of the digitally signed message to be a unique original, in which case only that instance constitutes the valid, effective, and enforceable message.

*Id.*

375. See *supra* notes 266-67 and accompanying text (describing how cryptography solves authentication issues).

point at which people will feel comfortable doing large-scale commercial transactions without being afraid that those transactions will be repudiated by the person who says, "It wasn't my digital signature. I lost that three weeks ago." California decided to pass one paragraph and call it a digital signature law.<sup>376</sup> But at least the law in Utah takes care of the repudiation issue by imposing certain legal burdens.<sup>377</sup> As more states—Florida,<sup>378</sup> Georgia,<sup>379</sup> and Washington,<sup>380</sup> for instance—consider digital signature laws this year, they will face these issues. These are important issues for banks, as well. Banks are very interested in having reliable digital signatures.

Technology is ahead of law. All you have to do is work with an in-house legal department at a bank to realize that technology is ahead of law. The technologists in the banks are moving at light speed, and everybody else is moving at the speed of sound. So you see a lot of the lightning, but you don't hear a lot of the thunder. We will have to figure out how lawyers will catch up. Digital signature technology is available right now, but only Utah and California have laws. Banks are rolling out stored-value cards, but the FDIC has not said if they are insured deposits.<sup>381</sup>

I would argue that the pricing model for this card changes dramatically if I have to start paying deposit insurance premium

---

376. See CAL. GOV'T CODE § 16.5 (requiring digital signature to be unique to user, verifiable, under sole control of user, and linked to data such that tampering will invalidate signature).

377. The Utah Digital Signature Act provides that computer users should register digital signatures with licensed authorities such as attorneys, title insurers, the governor, and various government officials. See UTAH CODE ANN. § 46-3-201. The certificate that verifies the digital signature's authenticity includes a recommended reliance limit for merchants equal to the value of the surety that the computer user has provided to the licensed authority. See *id.* § 46-3-309. The statute also imposes liability on computer users who make false representations or who fail to disclose material facts to the certifying authority. See *id.* § 46-3-302(4)(a).

378. On May 25, 1996, Florida adopted a digital signature law. See Electronic Signature Act, 1996 Fla. Laws ch. 224. The law grants state officers the authority to develop a signature registration scheme. See *id.*, similar to that created by the Utah statute. See UTAH CODE ANN. § 46-3-201. It also amended Florida's definition of the word "writing" to include "information which is created or stored in any electronic medium and is retrievable in perceivable form." 1996 Fla. Laws ch. 224.

379. See Michael E. Kanell, *Deal Raises Hopes for Internet Use*, ATLANTA J. & CONST., Feb. 28, 1996, at 2F (discussing private efforts to encourage Georgia's legislature to enact law similar to statute passed in Utah).

380. Washington adopted a digital signature law on March 29, 1996 that will take effect January 1, 1998. See Washington Electronic Authentication Act, WASH. REV. CODE ANN. § 19.34 (West 1996).

381. Three months after *The Internet Conference*, on July 16, 1996, the FDIC released guidelines to inform the public that stored-value cards are not protected by federal deposit insurance unless banks provide otherwise. See Paul Nyhan, *Cash Cards Set for Olympic Test Aren't Protected by FDIC: Trial May Pave the Way for All-in-One 'Smart' Cards*, ORANGE COUNTY REG., July 17, 1996, at C3. For more information regarding the FDIC, see Federal Deposit Insurance Corporation, *U.S. Federal Deposit Insurance Corporation Home Page* (visited July 20, 1996) <<http://www.fdic.gov/>> (on file with *The American University Law Review*).

assessments on these cards. Right now, the cards do not cost anything. Assuming the banks take an unhealthy turn at some point, the fact that these cards are not insured could be an important issue.

The Federal Reserve Board ("the Fed") recently has proposed Reg E changes.<sup>382</sup> Regulation E provides that if I lose my debit card, I have only \$50 of liability.<sup>383</sup> If I am really stupid, and I write my PIN next to my signature with a statement that says, "This is my PIN," and I lose that card, and you pick it up, and take \$500 out of my account, I am liable only for \$50 because the law currently rewards my stupidity.

The Fed simply has said—this stored-value card has a little thing that says, "Treat this card like cash. If lost or stolen, it will not be replaced."<sup>384</sup> It is a bearer card, right? It does not have my name on it anywhere. If I lose this, and you pick it up, you have my cash. You have my \$5 bill. So, the proposed Regulation E changes for stored-value cards basically treat the cards as if they are cash.<sup>385</sup> All the consumer groups no doubt will get out there and argue how horrendous a thing that is.<sup>386</sup> The comment period extends until August 1, 1996.<sup>387</sup> I will be very curious to see if that regulation changes.<sup>388</sup>

No regulator has commented on reserve requirements. Banks typically must reserve approximately fifteen percent of their transactional account balances in a separate place where it does not earn interest. If fifteen percent of the balances on these cards must be reserved, I would argue that the cards become much less economical. These cards will be used for micro-transactions, right? Nobody will

---

382. The Federal Reserve Board proposed to exempt offline stored-value cards, which keep track of their own value with a magnetic strip, computer chip, or other means, from regulations that limit consumer liability in the event of unauthorized use. See 61 Fed. Reg. 19,696 (1996) (to be codified at 12 C.F.R. § 205.16(d)). Regulation E also provides that limits on liability in the event of unauthorized use of an online stored-value card, the value of which is recorded at a central database, would apply only if more than \$100 could be stored on the card. See *id.*

383. See 12 C.F.R. § 205.6 (1996) (imposing \$50 limit on consumer liability); see also 15 U.S.C. § 1693g (1994) (limiting consumer liability for unauthorized electronic fund transfer to \$50). But see 61 Fed. Reg. at 19,701 (to be codified at 12 C.F.R. § 205) (proposing elimination of \$50 limit on liability).

384. See 61 Fed. Reg. at 19,701 (to be codified at 12 C.F.R. § 205) (proposing to exempt most stored-value cards from Regulation E limits on consumer liability).

385. See *id.*

386. See, e.g., *Consumer Implications of Electronic Banking and Commerce: Hearing Before the Subcomm. on Domestic and Int'l Monetary Pol'y of the House Comm. on Banking and Fin. Servs.*, 104th Cong. 20 (1996) (statement of James L. Brown, Director, Center for Consumer Affairs at University of Wisconsin-Milwaukee) (arguing that if financial institutions fail to assure consumers that new means of transferring value will not jeopardize their wealth, uncertainty will inhibit consumer acceptance of new technology).

387. See 61 Fed. Reg. at 19,710.

388. The final rule was not issued as of publication of this book.

get away from using credit cards for the big-ticket transactions. The stored-value cards will be used for the under-\$10 transactions, which are still more than eighty percent of the transactions done in this country today. The fact is that, if we over-regulate these cards, we will kill them.

Why is this Internet banking? Why am I talking about stored-value cards? I am talking about them because my proposition here today is that Internet banking cannot, will not, take off in a meaningful way until we have a way of getting the money in and out of our computers.

I will talk briefly about some of the legal issues that will arise for Internet banks. There is a law called the Community Reinvestment Act, which says that banks have to reinvest in their community.<sup>389</sup> I would like somebody to tell me what the community is for an Internet bank. There is actually a bank out there that obtained a charter from the Office of Thrift Supervision to do Internet banking, Security First Network Bank.<sup>390</sup> But the truth is that Security First skirted the issues that will arise with true Internet banking because they have a brick-and-mortar branch in Pine Bluff, Kentucky, and that is what they are calling their community. So, even if Security First opens nationwide accounts on the Internet, their community for the purposes of the Community Reinvestment Act is Pine Bluff, Kentucky. Is that proper in the era of true Internet banking?

Another fundamental regulation that probably will have to be rewritten to keep up with this technology is the Home Mortgage Disclosure Act.<sup>391</sup> This Act requires financial institutions to record certain information about the mortgages that it makes. Specifically, the Act states that if an applicant voluntarily does not check off their race on a loan application—a bit of information that is tracked so we know whether banks are making enough loans in low income areas or are discriminating against certain racial groups—the loan officer must indicate that and note to which racial or ethnic group he thinks the

---

389. See 12 U.S.C. §§ 2901-2907 (1994). This law requires "each appropriate Federal financial supervisory agency to use its authority when examining financial institutions, to encourage such institutions to help meet the credit needs of the local communities in which they are chartered consistent with the safe and sound operation of such institutions." *Id.* § 2901(b).

390. See Security First National Bank, *Welcome to the Bank Demonstration Area!* (visited July 20, 1996) <<http://www.sfnb.com/demos/quickdemo/lastpage.html>> (on file with *The American University Law Review*).

391. 12 U.S.C. §§ 2801-2811. The Home Mortgage Disclosure Act of 1975 seeks to provide government officials with the information needed to determine whether banks are serving the housing needs of their local neighborhoods. See *id.* § 2801(a).

applicant belongs.<sup>392</sup> Well, if the financial institution is accepting loan applications via the Internet, absent video-conferencing, it will be difficult for a loan officer to indicate an applicant's race or ethnicity. This, in turn, will make it difficult to review a bank's compliance with the Act.

So what does the future hold? There is no doubt in my mind that the technologies I am talking about today will change. I believe that before we have true Internet banks, we will be talking about vastly different products. We may have biometric encoding on the cards, so that I am not using a digital signature to identify myself—although public/private key cryptography still will be the way that the information is encoded—but I am using my fingerprint, which has been embedded into the card.

Regulations will grow, even if the technologies do not change. The key challenge for financial institutions today is whether the regulations grow in a way that they control. Or will the financial institutions decide to lobby regulators, argue that we do not need any regulation, and then allow regulation to become reactive? The first time a member of the Fed loses a stored-value card with more than \$10 on it, he or she might think about changing the regulations that govern stored-value cards.

So my general advice to banks is to encourage reasonable regulation because otherwise they will face unreasonable regulation. Congress will enact laws. In fact, I think Congress is beginning to awake to this issue.<sup>393</sup> The problem for both regulators and for Congress is that the issue is technology. Some people like technology, and some people are really afraid of it. Those who do not embrace technology are afraid of dealing with it because they do not understand it. Keeping Congress away from this area probably is not a bad idea.

---

392. See *id.* § 2801. The Home Mortgage Disclosure Act was adopted because Congress found that some banks were "contribut[ing] to the decline of certain geographic areas" by failing to provide reasonable terms of home financing to qualified applicants. See *id.*

393. Congress recently considered legislation regarding stored-value cards. See H.R. 2570, 104th Cong. (1995); S. 1270, 104th Cong. (1996) (exempting stored-value cards from Regulation E restrictions on consumer liability for unauthorized value transfers). The Subcommittee on Domestic and International Monetary Policy of the Committee on Banking and Financial Services of the House of Representatives has held several hearings during the last twelve months, regarding "the future of money." See, e.g., *Witness List, The Future of Money: Hearings Before the Subcomm. on Domestic and Int'l Monetary Pol'y of the House Comm. on Banking and Fin. Servs.*, 104th Cong. (Feb. 29, 1996) (identifying experts prepared to testify before committee); *Witness List, The Future of Money: Hearings Before the Subcomm. on Domestic and Int'l Monetary Pol'y of the House Comm. on Banking and Financial Servs.*, 104th Cong. (Oct. 10, 1995) (same).



My last thought is that the marketplace ultimately will pick the best products. That is the way it always has worked in this society. Keep unnecessary regulation away and reasonable regulation around, and you hopefully will find that the best technology will win.

Thank you.

(Applause)

MR. SABETT: I bring a unique perspective to all of this. I work for Spyus,<sup>394</sup> a company that provides communications security products. Our particular area of expertise is in PCMCIA cards.<sup>395</sup> We obviously have an additional interest in the smart card arena,<sup>396</sup> the stored-value cards that Mr. Parker has been talking about. I will focus on the technology side of these cards. I basically will walk through the security services that you need when doing Internet commerce and electronic commerce.

As Mr. Parker already has pointed out, there are several different security services that you want to have when you are doing electronic commerce. The one that people probably have heard the most about is encryption.<sup>397</sup> Encryption basically gives you the service of privacy or confidentiality.<sup>398</sup> You do not want others to know what information is traveling between your personal computer, or terminal, and the bank; therefore, you want the information encrypted. For example, the data flowing between your bank and the ATM is encrypted with a scheme called DES, Data Encryption Standard.<sup>399</sup>

---

394. See Spyus, *Spyus-Company Background* (visited Aug. 29, 1996) <<http://www.spyus.com/background4.html>> (on file with *The American University Law Review*). The company's name is short for "Secure Papyrus." See *id.*

395. The acronym PCMCIA refers to the Personal Computer Memory Card Association. See Synchrotech, *An Introduction to PCMCIA* (last modified Jan. 23, 1996) <<http://www.synchrotech.com/documents/intro.html>> (on file with *The American University Law Review*). The PCMCIA card is a tool used to add memory, storage, and input/output capabilities to portable computer systems such as notebooks and hand-held systems. See *id.* The PCMCIA card is plugged into a standard socket either connected to the mother board of the system or to the system's expansion bus. See PCMCIA, *How It Works* (last modified May 30, 1996) <<http://www.blackbox.com/bb/refer/mobile/pcmcia/howitworks.html/tig5edf>> (on file with *The American University Law Review*). The socket is a 68-pin interface, which connects the card to the system through an adapter. See *id.* The PCMCIA card is the key technology for adding memory, storage, and input/output capabilities to portable systems. See *id.*

396. A smart card is "a credit card-sized device containing one or more integrated circuit chips which perform the functions of a microprocessor, memory, and input/output interface." Lawrence O. Gostin, *Health Information Privacy*, 80 CORNELL L. REV. 451, 462 (1995).

397. See SCHNEIER, *supra* note 70, at 1 (defining "encryption" as "process of disguising a message in such a way as to hide its substance").

398. See *supra* note 265 and accompanying text (describing how cryptography enhances privacy of electronic communications).

399. Data Encryption Standard ("DES") is a cryptographic algorithm that was developed by IBM in the mid-1970s and currently is the most popular algorithm in commercial use. See SCHNEIER, *supra* note 70, at 17; Froomkin, *supra* note 72, at 890. DES is a single-key cipher, or symmetric algorithm; the sender and the receiver use the same key to encrypt and decrypt the

Confidentiality, therefore, is the assurance that only the intended recipient can understand that message.

One of encryption's applications, with respect to digital signatures, is authentication. As Mr. Parker said earlier, authentication basically is the assurance that only the sender of the message could have created the message. Unlike Mr. Parker, however, I would claim that a digital signature actually is stronger than a handwritten signature, but I will get into the different reasons for that in a little bit.

Basically, a digital signature is calculated across the entire message so that there is a unique binding between your identity and the message. In other words, the digital signature process uniquely combines the message information with your public key information in a way that allows the recipient to verify the signature. In contrast, when you sign a document, you are signing just at the bottom of the last page, or maybe you are initialing each page. With a handwritten signature, you are not initialing every single character and every single punctuation mark. Essentially, that is what a digital signature does. In calculating a digital signature, each bit that comprises the message is combined uniquely with the information about the signer of the message.

The next security service to talk about is nonrepudiation. As Mr. Parker already pointed out, nonrepudiation is the assurance that the original sender of the message cannot, at a later date, say that he or she did not send the message. That obviously is a very important assurance to the recipient. Nonrepudiation also is present in some protocols such that the sender knows that the receiver actually received the message.

The last security service is integrity. Integrity is the assurance that the content of the message or the transaction has not changed in the transmission process. Thus, you know that in the middle of the transmission, some eavesdropper has not inserted a zero or taken a few pennies off the transaction.<sup>400</sup> There are a few other functional mechanisms specifically built into the digital signature process, such as hash functions, which I will discuss shortly.

---

message. See SCHNEIER, *supra* note 70, at 270 (stating that DES is "symmetric algorithm: The same algorithm and key are used for both encryption and decryption"); Froomkin, *supra* note 72, at 890.

Although DES originally was created to protect unclassified government communications, financial institutions adopted the standard to protect the security of PINs and the authentication of retail financial messages. See SCHNEIER, *supra* note 70, at 267. See generally ITAR, 22 C.F.R. § 121.1 cat. XIII(b) (1996).

400. See *supra* notes 266-67 (describing data integrity).

Now, all this comes from a field of mathematics that was started in the 1970s called public key cryptography.<sup>401</sup> In general, cryptography is what everybody thinks of as secret codes. I pulled out Webster's definition because I thought it was interesting that they defined cryptography as the art of writing or deciphering messages.<sup>402</sup> I think that is interesting because it really is not an art. Everybody thinks there is such a mystique to it. Public key cryptography really is just basic mathematics. In fact, some of the principles involved in public key cryptography go all the way back to your third grade math class with commutative property, if you remember back then.

Cryptography basically is scrambling the data so that only the receiver can understand it. The way that it works is, the sender creates a message in plain text on their computer. The sender encrypts that message, which is essentially scrambling it up. The sender then transmits the message to the receiver, who decrypts it and reads it based on a reversal of the process which originally was done by the sender. The whole idea is that somebody in the middle of the transmission cannot intercept it and understand it.

Prior to public key cryptography, there was what we call traditional, or symmetric, cryptography.<sup>403</sup> The basic idea is that both recipients have the same key in order for the system to work. So if everyone in this room were part of some small network that wanted to secure the messages we send to one another with symmetric cryptography, we all would need the same key. The obvious problem is that if any person belonging to the network lost the key, sold it, or gave it away, the entire network would be compromised. Another problem is distributing those keys. You need a fairly good infrastructure in place where each of us would be able to get that key.

Public key cryptography plays a fundamental role in both encryption and digital signatures. The difference between symmetric and public key cryptography is that instead of having a single key, each person has what is called a key pair that consists of a public and a private key. The private key, which is the key that could be contained inside a smart card<sup>404</sup> or inside a PCMCIA card,<sup>405</sup> may be utilized only by the receiver. You necessarily do not need a hardware token

---

401. See SCHNEIER, *supra* note 70, at 31 (describing invention of public key cryptography by Whitfield Diffie, Martin Hellman, and Ralph Merkle in 1976).

402. See WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 548 (1981).

403. Unlike public key cryptography, with symmetric cryptography, "the encryption key can be calculated from the decryption key and vice versa." See SCHNEIER, *supra* note 70, at 4.

404. See *supra* note 396 and accompanying text (describing smart cards).

405. See *supra* note 395 and accompanying text (describing PCMCIA cards).

that stores the private key, although that obviously is the more secure way of doing transactions. You could have it in software on your PC, for example. The idea is that only the receiver has access to the private key. The public key is something that the sender can post to a public bulletin board, or key server.<sup>406</sup> In the future, you will see the equivalent of an electronic yellow pages. You will be able to go on the Web, or whatever the Web turns into, look up various people, and get their certificates, which contain their public keys. The sender can take the public key off the bulletin board, go through a mathematical process, and either encrypt with that public key or generate a different key to use in the actual transaction. Only the recipient in this case can decrypt the message and does so with his private key.

Public key cryptographic algorithms, because of the mathematics involved, are slower than the symmetric algorithms for performing actual encryption.<sup>407</sup> An alternative and faster approach is to use public key techniques to generate a key that you can then use with the faster symmetric algorithms.

In addition to encryption, public key cryptography also is used for digital signatures. This is where we get into the interface between law and technology, and this is where I have gotten involved. I am on the ABA committee<sup>408</sup> that is working on the Digital Signature Guidelines. I also am working on my J.D., and that is why I think I bring a unique perspective to this.

Digital signatures give you three out of four of the security services that you want when doing transactions digitally. First, you have

---

406. Essentially, a key server is a computer with a white pages approach to public key management. See Froomkin, *supra* note 72, at 893-94. Key servers work on either the certification authority or the web of trust. See *id.* Under the certification authority approach, some central body, such as the United States Post Office, authenticates the identity of the registrant when the key is deposited. See *id.* The Post Office adds the registrant's key to its server after the registrant identifies herself, which she does by providing identification similar to that required to get a passport. See *id.* Under the web of trust approach, the registrant uploads a public key to a key server at any time by having other individuals "sign" her public key by uploading authentications "signed" with their private keys. See *id.*

For examples of public key servers, see *TSDf PGP Key Server* (last modified Oct. 18, 1995) <<http://www.ts/umu.se/~pgp>> (on file with *The American University Law Review*); Stale Schumacher, *PGP Public Key Servers* (last modified Apr. 26, 1996) <[http://www.jcu.edu.au/gen/Computer\\_Centre/email/pgp/keyservers.html](http://www.jcu.edu.au/gen/Computer_Centre/email/pgp/keyservers.html)> (on file with *The American University Law Review*); PGP, *University of Tromsø's PGP Key server* (last modified May 1996) <<http://geronimo.uit.no/cc/tjenester/PGP/servruit.eng.html>> (on file with *The American University Law Review*).

407. See Froomkin, *supra* note 72, at 891 (remarking that public key encryption and decryption are much slower than single-key systems such as DES). Although public key encryption is ideal for short messages, it is less ideal for longer messages and high-speed applications like fast data transfer or telephone conversations. See *id.*

408. Information Security Committee, Electronic Commerce and Information Technology Division, Section of Science and Technology, of the American Bar Association.

integrity because you know the message has not been changed as it crossed the Net. Second, you have authentication; so you know the source of the message. Third, you have nonrepudiation, which is the ability to prove that the sender transmitted the message even though he may claim he did not.

To use public key cryptography and one-way hash functions<sup>409</sup> to create a digital signature, the sender first creates her message or transaction. Once the sender presses the button, "Sign," the rest of the process is invisible to her. Instead of signing the entire document, the sender creates a hash value of the document, which essentially is a shortened version of the message that is unique to that message.<sup>410</sup> The idea is to keep the mathematical processing constant whether you are sending a small transaction message or a 500-page document. So the sender hashes her document down to this hash value, which then is input into the digital signature algorithm, thus signing the document.<sup>411</sup> A unique binding then exists between that message and the sender's identity via the digital signature. The package of data is then sent to the recipient, consisting of the message and the digital signature.

When the recipient receives the message, he separates it from the signature and goes through a process to create a one-way hash of the sender's message. The recipient then takes the sender's public key and verifies the signed hash. The signature is valid if the hash value the recipient created from the sender's document matches the value produced when he verified the signed hash that the sender sent.<sup>412</sup> This process is a check between the message and the signature, achieved via two different mathematical processes. So you know that if the message has changed, that match is not going to occur and the signature will not be valid.

All of this occurs inside the hardware token—at least on the sender's side. She creates the digital signature using the information that is on the card. That is the advantage of having hardware security tokens that carry your secret key. More importantly, the secret key never leaves that card. All the computations are done inside.

---

409. See SCHNEIER, *supra* note 70, at 30 (explaining that hash functions are mathematical or other functions that take pre-images and convert them into smaller output strings, called hash values, and stating that one-way hash function operates only in one direction, from pre-image to hash value).

410. See *id.*

411. See *id.* at 38 (noting that sender produces one-way hash of document and then encrypts hash with her private key, thus signing document).

412. See *id.*

We have talked a lot about algorithms and how this cryptography works, so now I will give you a real example. One of the main ideas behind this example is that you do not want to change the way business currently is being done when you introduce all this new technology. In this example, we also make the assumption that the consumer either has made a purchase or has decided to make a purchase.

The first step occurs when the merchant digitally sends an invoice and remittance notice to the consumer. The consumer then could use any type of hardware token—the Lynx card in this example is one of Spyrus's products—to take that remittance and add a digital check that has been signed digitally. The consumer then could add their certificate to the whole message, so the bank does not need to look the consumer up in the public yellow pages. Note here that a certificate is somewhat analogous to a driver's license; it digitally identifies the holder of the certificate to the recipient. For further information, see the definitions section of the Digital Signature Guidelines. The consumer then could send the entire data package to the merchant.

You could encrypt the package before you send it, to put privacy into it, but this would not be required for authentication of the transaction. Once the merchant receives the package, he applies an endorsement and a certificate to the check and sends it through the existing electronic automated clearinghouse system. After the check clears, the statement is mailed to the consumer. The only paper you have in this example is the statement being mailed to the consumer. In fact, you could take paper out of the transaction entirely if you e-mail that statement. Essentially what you have is an analog between each component that currently exists in the paper-based checking system; here, it is purely digital.

This is where I am going to wrap up. The focus here is doing business on the Internet. You will see a new paradigm developing, in which the majority of purchases will not be in hard goods, but rather in soft goods such as information, news, or other digital media. The other important thing to consider is that the entry barriers for businesses are going to be much lower. With the Internet, many more "mom-and-pop" type businesses, businesses of one or two people, will spring up. As the paradigm changes, electronic cash, digital cash, and micro-payments will become more important when you are not purchasing large items.

I think that is where I will wrap up. Thank you.

(Applause)

MR. MUCKENFUSS: I will conclude this panel with somewhat of a different perspective. I am not a techie. I am about as low-tech as you get. I am not going to talk about the technical side of either the Internet or smart cards.<sup>413</sup> I want to shift the perspective a little bit, but before I do that, I should tell you a bit about my background. I spent eight years as a bank regulator, first at the FDIC and then as Senior Deputy Comptroller of the Currency for Policy. Since then, I have practiced law for the last fourteen years. So like Mr. Parker, I am a gamekeeper turned poacher. Over the years, my practice has been a mix of legislative/public policy work and hard legal work—putting together deals and products. In the early 1980s, I spent a considerable amount of time on cross-industry products and the entry of nonbanks into the banking business.

The rest of the panel has presented this topic from a very specific perspective—clients who are developing retail products and who want to make money. This is a game in which there will be winners and losers, and the stakes in all of this as it evolves over time are huge.

As a Washington lawyer who does legislative and public policy work, my perspective suggests that one battleground on which winners and losers will be determined is the system that we call Washington. Business persons often think of Washington as a black box that produces results they do not like. My notion is that Washington is not a black box. It is a system of institutions, rules, conventions, individuals, ambitions, hopes, fears, and money. It is a system that is comprehensible, if you conduct your research well. I submit that you will not be able to understand what Mr. Parker and Mr. Brody, and to a certain degree what Mr. Sabett, are talking about if you do not understand what I am talking about. You will miss a huge part of the game.

Now, just for fun, let me make five apparently disconnected points or comments. The first is a personal experience. Last Thursday I was sitting in my office and my secretary gave me a list of phone messages. One message was from my wife who said that AT&T had called and said that we had a \$3000 car phone bill last month. I said, "Oh, no. I am going to be dealing with a bureaucracy forever." Not true. What had happened is that our car phone had been cloned. I assume you all know about this type of technology. People can zap your car phones, take down the code, and use it to run up your bill.<sup>414</sup> I

---

413. See *supra* note 396 and accompanying text (describing smart cards).

414. See Bill Alpert, *Bye-Bye Blackbird? A Battle Is Shaping up in Antifraud Technology for Cell Phones*, BARRON'S, Dec. 16, 1996, at 19 (describing cellular cloning and its cost to industry).

called up the phone company expecting that I would have to talk to six bureaucrats, but I did not have any hassle. They took the loss, without question, just like that.

The second point relates to the pace of change. When I began government service in 1974, the cashless society was thought to be upon us. Now, as we have heard, more than twenty years later, the cashless society still is about to be upon us. Two particular impediments that may stretch the time still farther are worth highlighting. First are the legal issues about which we are hearing. Underlying some of the battles regarding the refined legal niceties of a cashless society is the war about who is winning and who is losing among particular interests. Another impediment to a truly cashless society is, of course, customer acceptance. We have heard that in order to obtain twenty percent participation on the Internet ten years from now, a compound growth of 109% must occur. That may happen, but it may not.

On the other hand, I would note that remarkable things *do* happen. I was listening to PBS the other day. In Blacksburg, Virginia, where Virginia Tech is located, half the town is on the Internet as a result of a project between the university and the city government. I thought it especially amusing to note the role of the government there—socialism—conservative Virginia.

(Laughter)

Anyway, they have wired Blacksburg. It also was interesting to hear the PBS interview of a person who was discussing what he described as the world's first cyberbar.

The third point I want to make is that one of the impediments to this rapidly advancing technology also relates to consumer acceptance. One of the questions I had for the panel as a whole is the following: If the technology exists to have a pure debit card that directly accesses my checking account or that creates a credit account, why would I ever use a stored-value card?

The fourth and clearly unrelated point I want to make highlights another impediment to advancing technology. Technology can enhance customer convenience and efficiency, but it also can eliminate profits along the way.

Now, let me describe a personal experience to illustrate my point. Soon after I left the government, I worked with a client who was a product developer at a bank business that will go nameless. He had created a mortgage product that was quite attractive—combining the features of a mortgage with those of a credit card. Fifty percent of the mortgage was a bond at a very low interest rate, which the bank



was able to sell immediately. On top of it was a second mortgage, also at a relatively low interest rate integrated with the card. The blended rate was lower than the market. Note what he had done, and note what I could do. When I got my paycheck—if I had direct deposit, it would be even better—I could figure out the arbitrage. Instead of depositing my check and then writing another check which pays my mortgage payment, I could pay down the mortgage and then access my funds over the month, running the balance back up.

This was a great product. I absolutely loved it. It smoothed out my cash flow and financing, and was very efficient. It provided a lower rate mortgage than I could get anywhere (and this was an institution that was not prone to giving low mortgages). Have you ever seen that product? Guess what? It never appeared in the marketplace. Why not? The answer is that it was too good. It cannibalized other products and divisions in that particular financial institution even though the product itself was profitable and built great customer loyalty.

Now, take yourself to the future. I flip up my handy-dandy computer screen. I call up my personal balance sheet with my assets, cash, mutual funds, stocks, etc. I flip to some quotes and run some numbers. Now, depending upon how much money I want to have in one place, and how cooperative various and sundry payment systems get, I can either move it, or I suspect, put together a relatively simple program in which I can put in my risk/reward preference. And all of my movements between all of my borrowings, my consumer borrowings, my mortgages, my mutual fund accounts, if I have them, are plugged into a formula which is called—let us call it the Parker maximizer formula—in which the computer simply does it for you. I end up with a direct payment into—well into what? The money is simply allocated. Whether you have to use the Net or not depends upon whether it involves one institution or another.

The folks I have talked to in financial institutions suggest that the technology is there, in terms of the computing power, to put that piece together.

Both my personal experience and this fantasy product make the same point. Both involve eliminating middlemen and float-minimizing transaction costs, interest paid, and maximizing return. But, in short, they employ the sophisticated computing and communications power that technology potentially makes available on a mass basis.

It is easy to see that part of the battle to get to the future involves implementing resistance to innovation that will wipe out existing profit opportunities.

The fifth, and final, thing I want to touch on relates to Mr. Parker's earlier discussion with respect to whether stored-value products will be insured.<sup>415</sup> Underlying this public policy issue is a classic struggle about market structure and the sorting out of winners and losers.

The creation of the cash management account by Merrill Lynch involved a regulatory arbitrage that depended on government action or in this case, inaction.<sup>416</sup> Paul Volker had driven up interest rates to rein in the inflation of the late 1970s.<sup>417</sup> As the interest rates went up and bumped into the Regulation Q interest rate ceiling, the securities industry created competing products such as the CMA account that caused money to flow from bank deposit accounts. Now, all of us who were in the government at the time said, "Hey, don't put any impediment on the securities industry. Let the free market work because what we want to do is get deregulation for the banks."<sup>418</sup> All of us had been brought up in a world where economists taught us that the free market is the answer that cost us about \$100 billion or \$200 billion in the thrift. So those of us in the government who argued that restrictions such as reserve requirements not be imposed on what the securities industry was doing because it would lead to bank deregulation, prevailed.<sup>419</sup>

Let me just stop there, make what may be some obvious points, and conclude. There is nothing intrinsic about financial products. But what a deposit is, what a mutual fund is, and what an insurance contract is, is a product of law, regulation, and convention. As the technology evolves, some of the products fit perfectly in the existing law; some of them fit into existing law but are a little out of focus; and some of them do not fit at all. The match between advancing technology and law raises fundamental questions about how you design this thing called financial services: what finance is; what commerce is; and where one takes over and leaves off.

When I order pizza and pay for it using my computer, will it be considered banking? That is going to be a major question that Mr. Parker and Mr. Brody will be worrying about. How will we define bank? What is money? What is finance, as opposed to banking? If

---

415. See *supra* notes 382-88 and accompanying text (debating whether stored-value products should be treated like cash or should be treated as insured deposits).

416. See William A. Lovett, *Federalism, Boundary Conflicts and Responsible Financial Regulation*, 18 LOY. L.A. L. REV. 1053, 1062 (suggesting push by nation's largest banks led to creation of cash management accounts).

417. See Dennis Bower, *An Evaluation of the Proposed Fair Trade in Financial Services Act*, 27 CASE W. RES. J. INT'L L. 409, 439 n.253 (1995).

418. See *id.* (stating that decentralized system is necessary to ensure competitiveness).

419. See *id.*

we are talking about a cashless society on a global basis, who is in charge and for what purpose? Who issues smart cards, for instance? Banks probably do not want anybody but banks to be able to issue these things. The Treasury may want only the Treasury to be able to issue them. Why can't I issue it? And, if I do issue it, have I become a bank? All of these questions may sound sort of far-fetched, but they are the questions that will be played out in these refined debates.

In short, my message is a simple one: The winners and losers, the quality of the product, and the viability of the technology will be played out inside the beltway as well as in the marketplace and the laboratory. This also means that there will be a lot of room in Washington for lawyers from a law school like this one.

(Laughter)

MR. BRODY: Something Mr. Muckenfuss said caused me to dig into my wallet and pull out this \$2 bill. At the beginning, I spoke in concepts, talking about demand and how demand drives this. Now, I will speak in very specific terms about how the business of employing the Internet and electronic commerce really occurs. All this technology costs money. It costs a lot of money, and product planning, business development, and the growth of companies depends on whether this money is spent the right way. There are product planners, branch managers at banks, and account managers at brokerages whose year-end bonuses really depend on whether the people in the technology department are thinking about this the right way. If these companies cannot reach their customers to sell their product they should not be investing in the product in the first place, no matter what the computer can do.

Let me give you an example that is very close to home to anyone who uses a computer for personal finance. I use Quicken;<sup>420</sup> however, I do not really use it the way Quicken would like me to use it. All I would have to do is spend a year reading the manual—

(Laughter)

—then fool around with the computer, and maybe I will get to where I want to go, unless my daughter or son wants to use the computer.

It is not as magical as the vendors would have you think. Further, most of you are not going to do your home inventory on Quicken because it is a real pain in the neck. It is like a bell curve. Most of us are not going to be faced with that awful task of trying to tell the insurance company what was in our home, because most of us are not

---

420. See Intuit, Inc., *supra* note 347.

going to have our houses burn down. So, play the odds, and we stay away from the difficult programs and equipment.

So what is driving this advancing technology? Demand. What will people pay for? Will they pay for all this technology? Will they pay for a terminal at home? Will we really want to turn on our terminals to do all this technology? Or do we just want to have something that works a little better and a little quicker?

The product planners and the marketers are in a very tense war with the technology people regarding this demand. The technology people are saying, "Look what computers can do. Look what software can do." But the marketers come back with some pretty convincing demographics and say, "I know it can do it. But will the people buy it?"

Now, what is demand? Demand is a need for something, the capacity to buy it, and the will to pay for it. We can take those three measures and apply them against any product that we are talking about. Our business is to go ask ourselves the same question five times over: Is there a critical enough mass of customers who will pay a set price that we have calculated very carefully for the service that we have the technology to deliver today? I can find a computer, I can find software, I can find hardware to do whatever I want to do, even today. Can I find people who will buy what it is that I want to do? If I can, great. If I cannot, we should abandon the technology and just give it up.

That is why I believe—and Mr. Parker and I are in a constant debate over this—that the Internet is a transitory thing. It is great because it captures our imagination. It looks great on the screen. It is in color now, not in amber like the first PCs were. But will you buy them? As Mr. Muckenfuss went through the issues, toward the end of his presentation, he started reeling off issue after issue.<sup>421</sup> I know what everyone was thinking. Which questions do I really want to answer? What are the lawyers really going to be hired for? The technology and the Internet will be driven by the judgment of consumers and by what all these little stores will pay for. If we move away from that, we will move into some very expensive failures.

Now, as for the \$2 bill, I picked this up at Citibank.<sup>422</sup> Take a look at a \$2 bill the next time you have one. Its artistry, particularly on the back, and its rarity—the fact that you do not see them in

---

421. See *supra* pp. 436-37.

422. See Citibank, *The Citi Never Sleeps* (visited Jan. 29, 1997) <<http://www.citibank.com/>> (on file with *The American University Law Review*).

circulation that much—exemplifies what money really is, and what cash and currency really are. It is special. It is unique. We want it. We like to see it. It is our reality check. It is a present. It has value. Nowhere in the future, no matter what technology is out there, unless you guys who are lawyers are miracle makers, will we be able to give a minor the contract rights that go with some of the cards that we're developing. But we can give them money, and they love it. In the value of two bucks, because it is so special, we always will want to be able to have it, touch it, see it, even if most of the time we write checks. It is our reality check.

So we never will be in a cashless society. We will use technology on the bell curve, but we never will be in a totally cashless society. The banks and businesses that keep that in mind will employ technology with reason and with limitations, and they will get the customers who just want to have an easier time keeping track of what they have in the bank for credit, for spending, for accounts receivable, and for accounts payable. It is a control mechanism to keep track.

Except for some people sitting up in a cabin in Montana with some FBI agents outside,<sup>423</sup> most of us use cash without concern for what backs it. Gold used to back our currency. Now the Fed does.

The truth is that we are used to paper money. That does not mean that at some point in the future, this card will not feel just as good to us as this bill. Why doesn't this card feel as good today as money does? Because most of us have not seen this card. I did not see one until one of my clients gave me one. But everybody has seen paper money. We have grown up with it.

I think it is somewhat generational.

(Laughter)

That is, that there are kids who are graduating from college now and who, on their college campuses, have used nothing but stored-value cards to pay for goods and services. They have one card for everything, and they are used to it. When they get out into the marketplace, and they do not have the ability to use this, they will miss it. As a result, when those people are raising kids, and when their kids are four years old, they will not hand them a \$2 bill. They will hand their kids a stored-value card. It strikes me, at that point we will get closer to a cashless society.

---

423. The author is referring to the Freeman, a militant group that holds white supremacist views and rejects government authority. See *Nine Freeman Disrupt Court*, WASH. POST, June 26, 1996, at A1 (noting that one Freeman was charged with attempt to deposit fraudulent \$100 million check in Freeman account in small Montana bank). The Freeman staged an 81-day standoff with FBI agents at a remote Montana ranch in 1996. See *id.*

MR. SABETT: The question was raised earlier, why would someone get and use a stored-value card? I would like to ask how many of you use ATMs? How many of you pay that service fee if you do not use your bank's ATM? The service fee now goes both ways. My bank right now charges seventy-five cents when I use another bank's ATM, and now the other bank is charging me as well.<sup>424</sup> So you already are paying a lot more than you will pay when you are using one of these cards. I think the important thing to remember is that the demand is there because of convenience. ATMs came about because people could not get to the bank to get their cash by 2:30 or 3:00 in the afternoon. So when you are able to use a stored-value card, instead of cash, at the local drug store, you will do so because it is convenient. The demand will be there; the demand already is there.

We, the United States, are much further behind than a lot of the other international areas. In Europe there are many projects underway that are much larger-scale than a college campus. There is a Mondex system<sup>425</sup> and there is a GSM phone system,<sup>426</sup> both of which use stored-value cards. The demand is there.

MR. PARKER: Let me say just two things.

First, Mondex is a company that has a card that can "mind-meld," in addition to just paying merchants. That is, I can transfer money directly from my card to your card.<sup>427</sup> So, with Mondex, you truly start to have something like digital cash in circulation because the transaction does not go from my bank, to my card, to a merchant, and then back to my bank to pay the merchant at the end of the day. Instead, if I owe someone \$10, I can transfer \$10 to him directly.

---

424. See *Fleet Financial Group Inc.: Suite Filed in Bid to Charge Non-customers ATM Fees*, WALL ST. J., Jan. 24, 1997, at A1 (stating major bank is suing Connecticut for right to charge non-customers fees for using its ATM's as it does in several other states).

425. Mondex uses a smart card to store electronic cash, which may be used to pay for goods and services in the same way as cash. See Mondex Int'l (last modified Aug. 20, 1995) <<http://www.mondex.com/>> (on file with *The American University Law Review*). Shops and service providers have their own cards on which Mondex value is accumulated and can be paid to their banks at any time via a Mondex telephone. See *id.* The Mondex system offers the advantage of an electronic locking system, which makes it more secure than cash. See *id.* Additionally, because the system is electronic, Mondex value can be sent and received instantly across telephone lines and computer lines, making it ideal for transactions on the Internet. See *id.*

426. The Global System for Mobile Communication ("GSM") is a pan-European public land mobile system, an alternative to the analog cellular telephone systems that are limited to operation within national boundaries. See generally Trudy E. Bell et al., *What Is GSM?* (visited Feb. 17, 1997) <<http://www.whatis.com/gsm.htm>> (on file with *The American University Law Review*).

427. Mondex enables person-to-person payments. See Mondex Int'l, *supra* note 425. Using a Mondex electronic wallet, two card holders can transfer value between their cards. See *id.* Additionally, with a Mondex telephone, person-to-person payments can be made across the world. See *id.*

Mondex is conducting a test project in Swindon, England.<sup>428</sup> Mondex equipped almost all of Swindon with the readers and gave most of Swindon's population the cards.<sup>429</sup> Tim Jones, Mondex's CEO, said at a conference I attended recently that 1995 was a very successful year in starting the project, but that it was difficult to get people to use the cards and the terminals. I thought this summarized the fundamental problem.

Tim Jones' comment addressed my second thought, which is why Europe is moving toward a cashless society faster than the United States. The reason why England is ahead of the United States is that the United States has the most sophisticated telecommunications system in the world. When we pick up a telephone in this country, we know there will be a dial tone at the other end. When I go into a supermarket and I swipe my credit card down the terminal, the terminal will dial up a phone line, and it will get a point-of-sale authentication. We know it is going to happen. The transaction takes time, and it is incredibly expensive, believe it or not. On the other hand, in Europe generally, the telecommunications system is not as good as in this country. So you cannot rely as fundamentally upon point-of-sale terminals. To compensate, you need a self-authenticating, or an offline device, to do that transaction.

The big debate that is happening right now is whether to use online or offline authentication. The use of online authentication costs a significant sum of money. I forget what the pennies per transaction is, but offline authentication is about one-eighth of that cost. As a result, when it would be uneconomical for a merchant to take a debit card, it is economical for a merchant to take a stored-value card. If that paradigm holds, then the stored-value cards will take off dramatically. But if the cost of online processing debit cards decreases to where it is roughly equal to a stored-value card—and there is some debate about that—then the stored-value cards will not take off.

The technologists and the marketers at the banks that I speak to tell me that an online point of sale transaction is far away from being as cheap as an offline transaction.

---

428. Swindon, a South West England town of approximately 190,000 citizens, was chosen as the Mondex pilot location because it is recognized as one of the United Kingdom's most progressive commercial environments. *See id.* Moreover, for market research purposes, the demographic profile of Swindon consumers is very similar to the United Kingdom national average. *See id.* Shoppers in Swindon can choose from more than 700 participating retailers to explore a cashless society. *See id.*

429. *See id.*

MR. BRODY: The stored-value cards will take off. There is no question about it. I am not suggesting for a second that we stick with money or that we force people away from the cards so that they keep using money. The cards will take off, but they will take off in a direction that is driven ultimately by what the consumer and the merchant will pay to use them.

The cards will not be all things to all people. There will be cost controls. Pilot projects will determine what the consumer will buy. No one really knows what pain the merchant will suffer to buy the machines that allow the consumer to transact with the stored-value card. You need a huge presence at the retail level so that if you go about it the wrong way, you will not have taken a real hit to your current-year profits if some of the customers just do not use it. Banks cannot afford to do it, and technology vendors cannot afford, in terms of their long-term relationships with those banks, to encourage banks to put wrong systems into place.

At the end of the day, Mr. Parker, I must tell you that I want one card in my wallet, too. I am not too old to want that. I want to get rid of all these cards. I want five accounts or fifteen—my medical information, my library account, everything—on a single card. I think that is terrific. But we still will use those cards for relatively few activities compared to the thousands of things the cards could do. From a business standpoint, not a technology standpoint, you must pick out only those things that the customer really wants to do with those cards, and buy the machinery to let the customer do them, and to forget the rest of the things the card is capable of doing. It does not make marketing sense, and it does not make business sense to do anything else. Shareholders will scream if you market home inventory on your system, but no one cares about it, and no one will pay for it. That demand is the business issue that should and does drive what you do with the technology.

MR. MUCKENFUSS: Just to be contentious, I would argue that the stored-value cards are not a step forward, but a step backwards from a consumer point of view. But the government might choose to wire everybody, like in Blacksburg.<sup>430</sup> In the United States, we did not

---

430. See John Hoke, *Electronic Village a Real Community in Blacksburg: BEV a Success and Has Brought Town Together*, RICH. TIMES-DISPATCH, May 12, 1996, at C1 (discussing Blacksburg Electronic Village, a partnership of the city government, Virginia Tech, and Bell Atlantic that attracted Internet participation from more than half of 36,000 community); see also Blacksburg Electronic Village, *BEV Homepage* (last modified Feb. 18, 1997) <<http://www.bev.net>> (on file with *The American University Law Review*).



decide to have a central bank until 1913.<sup>431</sup> In England, the central bank did not become a public institution until after World War II.<sup>432</sup> Governments and people decide to make public investments. I think that there will be people who lose their shirts.

Further, just like in the entertainment/media business, we did not know whether the technology will come through cable, the phone lines, fiber optics, or satellite signals—in fact, it probably will be all of those. The people I see at the financial institutions have to plan in a multimedia world in which there are discontinuities that are disturbing. Old farts like Mr. Brody and me will use our \$2 bills. People like Mr. Parker and Mr. Sabett will do transactions at the terminal.

Another thing, though, is that some of these refined legal niceties do not matter. If AT&T does not give a damn about losing \$3000 when someone clones my phone, why would a bank give a damn about losing \$200 if I lose my stored-value card?

A final point. When we came along, people used to say there were no economies of scale in banking. The truth is that as technology came onstream, there was an economy of scale. Government regulation also creates economies of scale. The government regulation is a tool and sword in the debate for winners and losers.

(Applause)

## VII. THE IMPACT OF THE INTERNET ON THE DEVELOPMENT OF LAW

MR. KLEMENS: Thank you. I think we have an eclectic group, and when you hear some of my comments, I probably will border on the heretical or radical side of that group.

I am very excited about the developments in the consolidation or convergence of technologies that has been going on in the last three years. If you do not think that there are obstacles to be overcome as you try to use the Internet in the practice of law, just go next door and sit in on one of the Internet labs that is happening. The introduction that is taking place ranges from how to use the “backspace” key to get to a location on a Lycos<sup>433</sup> search engine to how to download some of the cases and the contents of Supreme Court

---

431. See Jennifer A. Marler, *American Deposit Corp. v. Schacht: Yet Another Attempt to Limit National Banks' Powers to Sell Nondeposit Investment Products*, 74 WASH. U. L.Q. 841, 845 (1996) (stating Congress created first central bank in U.S. by passing Federal Reserve Act, 12 U.S.C. § 221-552, in 1913).

432. See Will Hutton, *A Preserve of Conservative Placemen Will Hutton Finds Flaws in the Partisan Case for Autonomy*, THE GUARDIAN, June 10, 1994, at 17 (stating that Bank of England was private central bank prior to 1947).

433. See Lycos, Inc., *supra* note 177.

Summaries from LII.<sup>434</sup> There still is a tremendous amount of education that will have to occur if the legal community and its clients are going to get beyond the core level of Internet use that we are at now.

I am the president of a venture capital firm that I started a year ago, and what I want to do is present three or four observations on some of the most advanced things I am seeing from a business-to-business and a commercial perspective, and I want to demonstrate how I think the Internet will change the practice of law. First and foremost, I think that there clearly will be pressure to move away from the formal structure of the court system and toward alternative dispute resolution. The Internet's openness and the fact that you do not have to be a lawyer to be a mediator or arbitrator will facilitate this trend. You probably have seen some of the arguments put forth by the groups that are trying to aggregate arbitration case decisions in a very cost-effective fashion. I think that the Internet could provide a forum for these decisions. Questions about ethics and the geographical boundaries exist with regard to admittance to the bar and about whether and why you will be able to practice law globally. Clearly, I do not think the current education and training infrastructure fits the global model. There also is no precedent for the future as to what that regulation, sanctioning, and certification will be.

Clearly jurisdictional issues exist, and not just as the Internet relates to bar admittance. For instance, a number of people who are advocates of arbitration and mediation suggest that we need some national ground rules that will supplant or sit on top of federal statutes and regulations, that will apply to a national bar, and that will be guided by the rules and regulations of the Internet. I believe that approximately fifteen or twenty jurisdictions allow electronic filing of court documents.<sup>435</sup> That will continue apace. Some of the largest professional service organizations in the world are looking at developing software and expanding that capability very aggressively

---

434. See LII, *supra* note 181 and accompanying text (discussing project to publish Court opinions online).

435. See, e.g., National Center for State Courts, *Court and Court Related Web Sites* (visited Feb. 17, 1997) <<http://www.ncsc.dni.us/court/sites/courts.htm>> (on file with *The American University Law Review*) (listing more than 60 state court Web sites); The Third Branch, *Electronic Filing System Brings Order to Mountain of Documents* (Feb. 1996) <<http://www.usCourts.Gov/ttb/feb96ttb/ohio.htm>> (on file with *The American University Law Review*) (remarking that U.S. District Court for Northern District of Ohio now requires electronic filing of maritime asbestos pleadings via specified Internet format); Fourth National Court Technology Conference, *Electronic Filing* (Oct. 1994) <[http://www.ncsc.dni.us/ncsc/ctc4/articles/elec\\_c.htm](http://www.ncsc.dni.us/ncsc/ctc4/articles/elec_c.htm)> (on file with *The American University Law Review*) (detailing efforts to implement electronic court filing in Idaho state courts).

and very rapidly. I just think the whole concept of geographic restrictions and boundaries will come under great pressure.

Let me tell you about three specific projects that are being developed and that will have a radical transformation on the practice of law. There is a large cable company that is developing private-branded satellite distribution systems today to compete with court television. They are looking to link up with a very large legal publisher that was acquired not too long ago by a large Canadian company. They will have the ability, using a Pentium, compact, prolant, standard PC that you could put in your briefcase, to go online to index and catalogue cases at the citation or headnote level. It also will allow you to download digitally, via satellite, into your building or into your hotel room, closing arguments, the presentation of evidence, or the judge's decision, from a case that has been recorded. You even can see the live video from those cases.

This cable company believes that there is a huge market for regional and local coverage of cases that is untapped. The ability to access that coverage with a Pentium that can do a five-hour program in less than two minutes is staggering. The point is that the Internet is but one medium that you need to focus on. The consolidation, or the convergence, of these technologies will be astounding, and it is moving faster than it ever has in the history of computers.

A software company in New York City has joint development deals with two very large legal publishers at this point. They have a software capability that allows neophytes and nontechnical programming personnel to sit and create expert systems online at real time. One of the areas that they think has the greatest promise in terms of applying their technology is the law. This company has developed a template that allows mid-level managers to create sex discrimination and employment discrimination applications real time, and to determine what their liabilities are. The software sits on top of the manager's personnel database and applies that database against a rule template or a legal template without having to do legal research and without having to call up a lawyer and start the clock ticking. This company thinks there is a huge market, particularly in corporate law departments, for the development of these applications.

There is also a significant development with regard to citation reform.<sup>436</sup> Four states, Colorado, Louisiana, South Carolina, and

---

436. See generally Claudia Driver, *Report From the Electronic Data Network Committee*, ARK. LAW., July 1996, at 6 (discussing new citation systems to include electronic publications); Kathy Shimpock-Vieweg, *Citation Reform: The Time is Now*, ARIZ. LAW., Aug.-Sept. 1996, at 10 (discussing simpler alternatives to the *Bluebook* and West system of legal citation); Kathy Shimpock-Vieweg,

South Dakota, have adopted alternate citation schemes.<sup>437</sup> It clearly will open up to other legal publishers the ability to catalogue content that primarily has been the domain of West Publishing for the last few years. There is a tremendous opportunity for CD-ROM publishers. On March 22, 1996, forty state court administrators and the chief justices met to support a final resolution on the ABA's Standing Committee on Citation Reform<sup>438</sup> that an alternate national structure be adopted in addition to the West Citation System. That resolution, supporting alternate citation and organizational schemes, will go before the Board of Governors in June.<sup>439</sup> The acceleration will be significant if all forty states at that meeting endorse that position. I will turn it over to the rest of our panel.

MR. MARTIN: Today, as I listened, I heard talk about change of a profound nature, change that was characterized alternatively as revolutionary and earth-shaking. When the earth shakes or when some other unexpected change alters lives in dramatic ways, there is an understandable human tendency to characterize and interpret this large scale event in very personal terms. It is what I would call the "where were you when" phenomenon. When technology causes rapid and profound change, human response is no different.

Those of us who live in the United States have matured to the point that we can understand automobiles in a generic way. Many are maturing in their understanding of wordprocessors beyond the point where knowledge was grounded in an understanding of what happened when one hit the "F7" key. But our discourse and comprehension of a wide-scale digital revolution, and that most recent eruption of it called the Internèt, I think, continues to exhibit very parochial vantage points.

Despite repetitious use of words like "world," "global," and the somewhat less grandiose, "national," most often the talk is, in truth, about me and us. Now, that is understandable, and it is, in some respects, commendable, because "us" is, after all, who we are. The problem comes in extrapolating a recent, powerful, intense, personal

---

*Cite Fight at the DOJ Corral*, LEGAL ASSISTANT TODAY, Mar./Apr. 1995, at 81-83 (recounting government's consideration of potential antitrust violations inherent in sole citation scheme).

437. Cf. *Law Libraries Become Tech Sleuths*, NAT'L L.J., July 22, 1996, at B11.

438. See Brian Cummings, *ABA Panel Proposes New Cite System*, CHI. DAILY L. BULL., Mar. 28, 1996, at 1. In the proposed system, a cite would include the year a decision was released, a unique number for each court jurisdiction, a number assigned to the decision and a paragraph number pinpointing the material. See *id.*

439. See M.A. Stapleton, *ABA Backs Universal System for Legal Cites*, CHI. DAILY L. BULL., Aug. 2, 1996, at 17 (recounting ABA decision to support single citation scheme). The Board of Governors unanimously approved the new citation scheme on August 2, 1996. See *id.*

experience to others and, indeed, to the rest of the globe. Under these circumstances, I think a radical shift in perspective is helpful.

Two months ago, I had the good fortune to spend a month in the nation of Zambia, helping to establish a national legal database that now is on the Internet.<sup>440</sup> I want to give you a several-point example of what digital law can mean in a setting that is quite different from our own. I want to do that (1) so we can escape the parochialism of our own situation; and (2) because I think it helps us to think about our own situation. Although I am not an expert on Zambia, I may have the edge on a few of you. Consequently, I will begin by situating the discussion geographically and historically before moving very concretely to an examination of several Zambian law artifacts that are now on the Net and some reflections on what that might mean for Zambia and for us.

Last April I had the opportunity to address a meeting of African law deans at New York University. It was a very interesting conversation because this group, brought to the United States by the ABA, focused on books. They described libraries that had huge holes, indeed, that had not been replenished for the last decade. They spoke about faculties that were cut off from the rest of the world. In return I described what was happening to law libraries in the United States. I showed them how digital law was transforming the practice of law, and I demonstrated several examples. In conclusion, I sketched some opportunities now opening for law schools, generally, and for African law schools, in particular.

One of the deans present at that gathering gave me a chance to put my body where my mouth had been. I was invited to spend part of January and February 1996 in Zambia at the University of Zambia Law School.

Zambia is located in the southern part of Africa. It is a landlocked nation. To the immediate south is Zimbabwe; Angola is to the west; Zaire is to the north; Tanzania is on the northeast and Malawi on the southeast. The country is within the economic and political force field of South Africa. It has a population of nine million, space approximately that of Texas, and only thirty-one years of independence.

While I was in Zambia, I did a lot of reading about the development of law in the United States, focusing on our country at thirty-one years of independence. We do not have time to explore the

---

440. See ZamLII: *Zambian Legal Information Institute, Zambian Law Server* (visited Feb. 17, 1997) <<http://lii.zamnet.zm:8000>> (on file with *The American University Law Review*).

parallel, but I found substantial resonance between what I was experiencing in Zambia and the United States at a comparable stage of nationhood.

Zambia was not well prepared for independence by its colonial master, the United Kingdom. "Not well prepared" insofar as the challenges it faced. The new country had, for example, no institution of higher education. There was one Ph.D. in the nation, very few lawyers. Needless to say, none of these lawyers had been educated within the country; the first law school class at the University of Zambia Law School was the Class of 1970. It was a class just shy of forty graduates, and that size has held more or less constant throughout the following years. So we are dealing with a nation that is attempting to fill the profession, including the judiciary, with the alumni of one law school that has a graduating class of forty people.

Because of its British heritage, Zambia is a common law country, and it is a nation that had its first multi-party elections in 1991. During much of Zambia's history, its economy suffered severely because of the role the country played in the battles for independence that were being fought around it. The resulting lack of hard currency pretty much caused Zambia's information resources of all types to shrivel up.

It was in this setting that a national law server was established on the Internet in February 1996.<sup>441</sup> Let me first show you its two faces. Then I want to discuss three illustrative documents.

A growing collection of Zambian legal materials is on the ZamLII server. The Zambian Constitution is there,<sup>442</sup> as are the decisions of the Supreme Court.<sup>443</sup> There are a few decisions of the High Court<sup>444</sup> and selected statutes.<sup>445</sup> There are a few articles from the Zambian Law Journal,<sup>446</sup> and there is, needless to say, information

---

441. See *id.*

442. See ZamLII: Zambian Legal Information Institute, *The Constitution of Zambia, 1991* (visited Aug. 12, 1996) <<http://lii.zamnet.zm:8000/const/const91.htm>> (on file with *The American University Law Review*).

443. See ZamLII: Zambian Legal Information Institute, *Decisions of Supreme Court of Zambia* (visited Aug. 12, 1996) <<http://lii.zamnet.zm:8000/cases/supct.htm>> (on file with *The American University Law Review*).

444. See ZamLII: Zambian Legal Information Institute, *Decisions of the High Court of Zambia* (visited Aug. 12, 1996) <<http://lii.zamnet.zm:8000/cases/highct.htm>> (on file with *The American University Law Review*).

445. See ZamLII: Zambian Legal Information Institute, *Acts of Zambia* (visited Feb. 17, 1997) <<http://lii.zamnet.zm:8000/acts/acts.htm>> (on file with *The American University Law Review*).

446. See ZamLII: Zambian Legal Information Institute, *Zambian Law Journal* (visited Aug. 12, 1996) <<http://lii.zamnet.zm:8000/commentary/zljtable.htm>> (on file with *The American University Law Review*).

about the law school.<sup>447</sup> All of this comprises what I will call the Zambian face of this law server.

Its other face is a collection of links out to legal information elsewhere in the world of importance, relevance, and value to lawyers and judges in Zambia.<sup>448</sup> Both of these faces have tremendous importance to the country.

Let us now examine how such an information resource, utterly unremarkable in the United States, might have a powerful effect in this quite different setting. Zambia has a common law system that is not yet truly independent from England. The English Law (Extent of Application) Act<sup>449</sup> says that, subject to any provisions of written Zambian statutes, the law of Zambia consists of English common law and doctrines of equity.<sup>450</sup> Some British statutes enacted before a specified date in 1911 also apply.<sup>451</sup> What does this mean for the daily law life of Zambia? It means that, unless and until there is an enactment of the Zambian Parliament, or unless and until the Zambian appellate courts say otherwise, determining the law of Zambia on any point requires researching British law. Like the United States early in its independence, most of the common law of Zambia is British common law.

Zambia has appellate courts that can and do displace English precedent, and it is to two Supreme Court decisions now at the Zambian law site to which I now turn. The first one concerns a traffic accident that produced substantial damage.<sup>452</sup> The parties entered into an agreement for payment of the repair costs, and a document was signed.<sup>453</sup> When the injured party later brought an action for additional damages and for loss of use of the vehicle, it was met with the defense that the parties had settled—that there had been an

---

447. See ZamLII: Zambian Legal Information Institute, *The University of Zambia Law School* (visited Aug. 12, 1996) <<http://lii.zamnet.zm:8000/unzalaw.htm>> (on file with *The American University Law Review*).

448. See ZamLII: Zambian Legal Information Institute, *Zambian Law Server*, *supra* note 440 (containing "Foreign and International Legal information important to Zambia," including United Nations materials, multilateral treaties, human rights documents, constitutions of other nations, legal materials from other African nations and other common law jurisdictions outside Africa).

449. See ZamLII: Zambian Legal Information Institute, *The English Law (Extent of Application) Act, CAP.4* (visited Feb. 17, 1997) <[http://lii.zamnet.zm:8000/acts/cap\\_4.htm](http://lii.zamnet.zm:8000/acts/cap_4.htm)> (on file with *The American University Law Review*).

450. See *id.* § 2.

451. See *id.* § 2(c).

452. See ZamLII: Zambian Legal Information Institute (visited Aug. 12, 1996) <[http://lii.zamnet.zm:8000/cases/supreme/summary/sum92\\_9.htm](http://lii.zamnet.zm:8000/cases/supreme/summary/sum92_9.htm)> (on file with *The American University Law Review*) (providing case summary of *Zambia State Ins. Corp. v. Joseph Chanda*).

453. See *id.*

accord and satisfaction.<sup>454</sup> In 1992, the Zambian Supreme Court addressed this question and concluded that the document signed in receiving the check for the cost of repairs did not bar the subsequent suit.<sup>455</sup>

My second illustrative case is a 1993 decision on a criminal case in which there was a gruesome murder, and the issue on appeal was whether several people the victim spoke to shortly before her death could testify at the trial regarding what she had told them about the circumstances of her slaying—basically, whether or not an exception to the hearsay rule applied.<sup>456</sup> The Zambian Supreme Court concluded that the exception did apply.<sup>457</sup> The text of these two decisions and many others that in theory comprise Zambian common law were, until January 1996, unavailable in Zambia.

Unavailable? Surely they were available. The court handed them down. They were shared with the parties, they were mimeographed, and there was one copy in the High Court library. There also was one copy in the law school because one of its faculty members sat on the moribund committee that had been charged with seeing to it that the decisions would be published some day. But decisions of the Supreme Court and the High Court in Zambia had not been published for a decade, and what was to say that it was likely to happen soon? But Zambia is a common law jurisdiction, in which appellate decisions are intended not just to resolve matters for the parties but also to give guidance to actors in future situations, including the lower courts. The decisions also were unavailable to law students and professors who were engaged in the process of legal instruction. Law instruction in Zambia takes place with British texts that have scant veneer of Zambian law.

Putting these two decisions plus all others they stood for into digital form and into a database makes it possible for them to be distributed in a much more efficient and cost-effective way to the judiciary, to the practicing bar, and to the organs of legal education in the nation. That, in short, is my first proposition.

---

454. See *id.*

455. See *id.* (finding that payment of liquidated claim does not constitute consideration for promise to settle second unliquidated claim).

456. See ZamLII: Zambian Legal Information Institute (visited Aug. 12, 1996) <<http://lii.zamnet.zm:8000/cases/supreme/full/93scz5.htm>> (on file with *The American University Law Review*) (providing case summary of *Sinyama v. The People*, which discusses whether statement of deceased prior to death contained necessary spontaneity to qualify as *res gestae* exception to Zambian common law hearsay rule).

457. See *id.* (holding that deceased did not have sufficient time to concoct statement and that statement was made contemporaneously with event).



Let me share two other Zambian law documents with you. The first is an important 1995 fundamental rights decision of the Supreme Court of Zambia. It addressed the country's Public Order Act that required a permit for holding any kind of public meeting or demonstration.<sup>458</sup> The Zambian Supreme Court found this Act to be unconstitutional.<sup>459</sup> Reading that decision, one finds some very interesting authorities cited by the Zambian Supreme Court. To begin, the court cites not a single British or Zambian case. Instead, the Zambian Supreme Court relied on several other African nations, the Supreme Court of India, and two decisions of the United States Supreme Court.<sup>460</sup> I submit that this decision supports a second proposition—namely, that the courts, the lawyers, and the legal institutions in Zambia are most eager to draw upon useful models of law and judicial decision making from all over the world. Putting law up on the Internet provides better access to external law that serves as a model or as persuasive precedent.

My final example is the 1995 Lands Act.<sup>461</sup> This is one of the few acts one finds still in print and available in the government printing office in Zambia. The penal code of the nation, for example, is unavailable at the government printing office and also in the university library. Access to statutes has been as limited as has access to appellate decisions. That is a particular problem as the nation now looks to the rest of the world for capital. With the elections in 1991, the nation moved on a path of privatization, which is to say that it moved from a single party, state-run economy toward one in which the private sector would play a much greater role. Zambia wants to signal the rest of the world that it offers a hospitable environment for private investment. That message is an uncertain one so long as the details of Zambia's legal regimes surrounding private investment effectively are unavailable.

---

458. See ZamLII: Zambian Legal Information Institute (visited Aug. 12, 1996) <<http://lii.zamnet.zm:8000/cases/supreme/full/95scz25.htm>> (on file with *The American University Law Review*) (providing case summary of *Mulundika v. The People*).

459. See *id.* (finding that Act violated fundamental freedoms and Rights of Assembly due to absence of adequate and objective guidelines to govern enforcement of Act, similar to violation of Due Process).

460. See *Shuttlesworth v. Birmingham*, 394 U.S. 147 (1969) (holding that ordinance allowing Birmingham absolute discretion to prohibit any public parade or demonstration was unconstitutional prior restraint); *Whitney v. California*, 274 U.S. 357, 375 (1927) (Brandeis, J., concurring) (stating that freedom cannot exist without free speech and assembly).

461. See ZamLII: Zambian Legal Information Institute, *The Lands Act, 1995* (visited Aug. 12, 1996) <<http://lii.zamnet.zm:8000/acts/land95.htm>> (on file with *The American University Law Review*) (containing full hypertext of Zambian Lands Act of 1995 which provides for continuation of leaseholds and leasehold tenures, vesting all land in President and enacted by Zambian Parliament on Sept. 13, 1995).

Putting digital law materials into the Zambian legal environment potentially has a far more pervasive and earth-shaking effect than our own digital revolution. Multi-party democracy still is fragile in Zambia. The economy is rocky. The judiciary is small but both fiercely independent and very professional. The law school is working very hard to educate, not just lawyers, but Zambian lawyers, despite the fact that the teaching materials still are imported from a foreign nation. Putting digital law materials into this environment can have an enormous effect. A necessary question about Internet resources that I heard in earlier discussions today is, what does the Internet offer that LEXIS or Westlaw do not offer? There is no question but that digital law materials put into Zambia provide something that was unavailable before, and speculating about the impact in that setting is truly mind-boggling.

(Applause)

MR. KLEMENS: Thank you, Mr. Martin. Mr. Katsh will speak next.

MR. KATSH: Let me frame my comments with a little story. It is about a naval commander who was guiding a ship on maneuvers one night in stormy weather. At a distance, the commander spots a light and quickly is informed that his ship is on a collision course. He immediately orders his assistant to signal the other ship, and a message is sent that says, "Immediately change course twenty degrees." A moment later, a reply arrives, and it says, "You change course twenty degrees." The captain looks at his aide and says, "Send another message. Have this one say, 'I'm a Captain; you change course twenty degrees.'" Again, a response quickly comes, and it says, "I'm a Seaman Second Class; you change course twenty degrees." The Captain is increasingly angry and says, "Send one more message. Have this one say, 'I'm a Captain. I'm also a battleship.'" This time, thirty seconds pass and a message comes back. It says, "I'm a Seaman Second Class. I'm also a Lighthouse."

(Laughter)

I am curious about what we see when we look at the phenomena of the Internet and the World Wide Web. Clearly, the Net is an extraordinary informational resource, and I think a lot of people have been talking about that today. I think a lot of people today have seen the Internet as a place where legal doctrine is challenged and where traditional legal categories are called into question. But I would like to talk about seeing something somewhat different here. I am not suggesting, by any means, that those visions are inappropriate or incorrect, but I think one thing that I have been seeing more of lately is the Internet as a place where conflict and disputes are likely to

occur. I would like to talk for a few minutes about why I see this vision of the Internet. Then, I would like to talk about a small project that I am involved in that has attempted to do something about these conflicts.

What is happening? What have we been told during the day today? If any of you heard Mr. Bruce speak earlier, he talked about two *D* words, disaggregation and disintermediation.<sup>462</sup> I think I would characterize the Internet with two *C* words. One of the *C* words is "complexity." I think that all of this technology, whether the end result is good or not so good, brings us into an environment that is more complex than what we are familiar with. For educators, it is a more complex environment; for citizens, it is a more complex environment; for publishers, it is a more complex environment. It is hard for me to think of a field or endeavor that the Internet does not make more complex. The Internet may be a lucrative environment, but it also is a complex environment, and that is one of the *C* words I would apply to this environment.

The other *C* word I would apply is the word "change." I think we are witnessing an environment that is undergoing rapid change. The change is being felt at all levels. Earlier, Mr. Klemens described software changes and hardware changes. Print is a fairly stable environment. The library is a fairly stable environment. These days the library is being challenged by technology, but when one walks into a library, the architecture alone communicates a feeling of stability. When one walks into a courtroom, one has a similar feeling. When one plays around with this technology, however, and with the network, one knows that one is not participating in an environment that is going to be the same 365 days from now as it is today.

So what do you get when you have a complex environment and an environment in which there is a lot of change? I think there will be many end results. One possible desirable result is that the economy flourishes. One possible result is that there will be a lot of business for lawyers. I am not sure it is a likely result, but it is a possible result. I think, however, that when you are engaged in an environment in which people are communicating, establishing relationships, interacting with others, both close by and at a distance, one of the consequences is that sometimes those relationships break down. Sometimes they go sour. Inevitably, I think that this is an environment, which, whatever benefits it brings, will bring a need to devote some attention to how do we deal with the conflicts that arise online. What I am

---

462. See *supra* Part IV.

suggesting is that we not simply see copyright disputes or privacy disputes, but that we understand that there is a continuum. We should understand that these disputes are all a consequence of the fact that the environment that allows us to interact with each other in ways that were not possible before also brings us into contact with each other in some ways that might not be as desirable to us.

What can we do about this? Well, I have referred to the Internet once or twice as a place or as a space. I do that because I actually have come to feel comfortable with referring to the Web or cyberspace as a space, and I would encourage you to try to think of it in those terms. It is hard to refer to the Internet as a space, and some people would argue with me that it is inappropriate to do so. Virtually everyone who has spoken today has referred to the Internet or to the World Wide Web as a type of communication tool rather than as a space. Up till now it largely has been a publishing tool. The reason why we have been focusing on certain legal doctrines all day is that most of those doctrines are related to the publication or the distribution of information. Well, it is undeniable that the Web is a very powerful publication tool. Can it be more, however?

Mr. Martin has told me that he is teaching a class over the Internet next Fall.<sup>463</sup> It is a class that will have students in it from four law schools. Where is the class? Or should we even refer to it as a class? Are you comfortable saying that the class is at a particular Web site, because they are not going to need a classroom like this one we all are in today? Can we create spaces on the Internet that have parallels to spaces that we are familiar with? We certainly all are familiar with classroom spaces. Can we create learning spaces on the Internet and call them classrooms or classes if we want to? We are somewhat comfortable talking about libraries on the Internet because we think about libraries as being collections of information, but can we think about places on the Internet that are not simply collections or bodies of information, but are places where transactions occur?

I think that more and more we will see the Internet as being a place where transactions occur. If you can create a space on the Internet where people are comfortable transacting and exchanging data and information, then I think you can create spaces on the Internet that have parallels to many physical places where we are comfortable. I think that dispute resolution areas are exactly these types of places.

---

463. See *supra* note 207 and accompanying text (describing intellectual property course available online).

I am engaged in a project to develop what is called an Online Ombuds Office.<sup>464</sup> The ombudsperson concept exists in many institutions in this country.<sup>465</sup> What happens when you go to an office? What happens when you encounter a mediator or an ombudsperson? Can such a person apply his or her skills online? Can you create spaces online that are suitable for the application of the expertise that these people have? I think that is a challenging task, and I think that we will see more and more efforts towards that end.

There currently are three projects at their beginning stages that are aimed at designing online dispute resolution spaces. One of them is called the Virtual Magistrate Project.<sup>466</sup> It employs an arbitration model to try to resolve copyright or privacy disputes at an early stage.<sup>467</sup>

Another project is located at the University of Maryland Law School. It focuses on mediating family law disputes.<sup>468</sup> Why would one want to create an online dispute resolution place for mediating family law disputes? Well, in many cases, the parents may be in different places. How do you currently mediate disputes or mediate problems that arise when the parents are in different places? If you can create an online space where these people can meet while remaining in their own locations, you may have new tools to deal with the kinds of disputes that arise in family law situations.

The last one is the online Ombuds Office that I mentioned. Let me just mention one or two challenges that are involved in setting up such a space. Such a space is a creation of software, and currently, we don't really have very powerful tools for creating these spaces. E-mail

---

464. See Online Ombuds Office, *The Online Ombuds Office* (visited Jan. 28, 1997) <<http://www.ombuds.org>> (on file with *The American University Law Review*).

465. The ombudsperson role is a varied one that includes providing and receiving information, reframing issues and developing options, making referrals, working with disputants, and assisting persons to help themselves. The ombudsperson is not an authoritative or final decisionmaker but is "a confidential and informal information resource, communications channel, complaint-handler and dispute-resolver." Mary Rowe, *Options, Functions, and Skills: What an Organizational Ombudsperson Might Want to Know*, *NEGOTIATION J.*, Apr. 1995, at 103. The ombuds role originally was intended to be an antidote to abuses of governmental and bureaucratic authority and administration, and ombudspersons continue to be effective intervenors in cases of arbitrary decisionmaking.

466. See National Center for Automated Information Research, *supra* note 340 (explaining background of project).

467. See National Center for Automated Information Research, *The Virtual Magistrate: Concept Paper* (visited July 24, 1996) <<http://vmag.law.vill.edu:8080/docs/VMpaper.html>>, ¶¶ 9-12 (on file with *The American University Law Review*) (outlining concept of Virtual Magistrate); David Post, *Virtual Magistrates, Virtual Law*, *THE AM. LAW.*, July/Aug. 1996, at 104.

468. See The Center for Online Mediation, *Mediation* (last revised Oct. 4, 1996) <<http://www.mediate-net.org>> (on file with *The American University Law Review*).

is very attractive. It allows us to encounter people whom we might not encounter all that often, but it is not sufficient for what I am talking about. If you walk into a mediator's office, the mediator is thinking of many things: What happened? What is the relationship between the parties? Should I let these people meet together? Should I meet with the parties separately? Should I allow some time to pass before I bring people together? Should I have a conference call? The range of communication opportunities and "meeting" opportunities that all of us enjoy in the physical world are not yet present on the Net. One of the things I am involved in is trying to see that we do have opportunities to use the Net in ways that are not currently possible.<sup>469</sup>

What other kinds of challenges are there? What kinds of problems can one run into in such a space? Well, most mediations, unlike court hearings, are private. How do you maintain this privacy using a medium that often leaks? What kinds of strategies and interfaces do you use to make the online alternative dispute resolution spaces both easy to use and confidential enough so that everybody is not copying everything that comes their way and sending it to other people? Can you create a space on the Internet where you are as comfortable about keeping information confidential as you are in an office when you are meeting with someone face-to-face? These are some of the kinds of things I think that we will be working on.

(Applause)

MR. NYHART: I have been keeping track of the three prior speakers, who have spoken, in some form, about reaching agreements and how the Internet might affect that process. Mr. Klemens talked about the combination of technologies. Mr. Martin dealt with global communications and also about variables. Mr. Katsh talked about transactions and about developing the software for online alternative dispute resolution spaces.

My research interest in using computers to reach agreements goes back to the 1970s when I directed a project to create an economics and engineering sizing model of deep ocean mining that was used in the Law of the Sea negotiations that were going on the 1970s. Our computer model played a significant role in that large international negotiation.<sup>470</sup> The fact that it actually was useful led me, errone-

---

469. A transcript of the first dispute mediated by the Online Ombuds Office is located at <<http://www.ombuds.org/narrative1.html>>.

470. See Lance N. Antrim & James K. Sebenius, *Incentives for Ocean Mining Under the Convention*, in *LAW OF THE SEA: U.S. POLICY DILEMMA* 79, 83-85 (Bernard H. Oxman et al. eds., 1995); JAMES K. SEBENIUS, *NEGOTIATING THE LAW OF THE SEA* 1-2, 10, 27, 95 (1984).

ously it turns out, to think that the use of computer models in negotiations would be a snap. I have spent the interim learning that this just is most often not so and trying to figure out why. Today, however, I remain optimistic about the use of new information technologies in negotiations and reaching agreement.

Nicholas Negroponte, who also works at MIT, wrote in *Being Digital*<sup>471</sup> that the change from atoms to bits is irrevocable and unstoppable.<sup>472</sup> He wrote about the thirty million people who are estimated to be on the Internet currently.<sup>473</sup> That is a very large number, and I think it helps to demonstrate that the nature of communication has been and is being totally altered. Communication is faster and more inclusive. New bodies of knowledge and data are available, and there is increased access to information generally, as well as improved data management and analysis tools. All of these changes will have important effects on negotiation.

I want to focus the remainder of my remarks on the idea of Virtual Negotiations and in doing so will touch on some of the points raised in the comments of prior speakers. I want to take the next few minutes to: (1) sketch the idea of virtual negotiations; (2) suggest how the Internet and the Web may be combined with other information technologies to provide sets of software to facilitate virtual negotiation; (3) identify how some pieces of negotiation theory supports the concept; (4) give two examples—the regulatory process and international negotiation—to illustrate its potential; and (5) close with caveats regarding its promises.

Virtual Negotiation relies on virtual presence, which is the idea that you and the other negotiating parties will appear to each other to be in the same room although, in fact, you will be in different physical spaces. Now, I am a new kid on the block in terms of these technologies, but I have found out from a technical colleague that, in fact, 3-D caves already are in experimental and developmental stages.<sup>474</sup>

If it is possible to have a feeling of physical presence when there is no actual presence, what will that do to negotiation? For one thing, it may mean that to negotiate you will not have to get on an airplane and travel. When will you still want to meet in real, face-to-face space, rather than in what might be called cyberspace?

---

471. NICHOLAS NEGROPONTE, *BEING DIGITAL* (1995).

472. *See id.* at 11-12.

473. *See id.* at 5.

474. *See* Robert Rossney, *Metaworlds*, *WIRED*, June 1996, at 142 (discussing various Internet chat rooms where users are represented by graphical representations called avatars).

I was talking with one of our colleagues here today, Mr. Hellmann,<sup>475</sup> about when a lawyer really wants to see the twitch in the other party's eye. When are you going to be content and satisfied with an electronic image of people knowing that they really will not be there? But think in the alternative of how many times you may be able to accept virtual presence and may be content and comfortable with having a "face-to-face" meeting without going to Los Angeles or having the West Coast people come here.

Being comfortable with cyberspace negotiations will be aided by negotiation workspaces. Mr. Katsh mentioned the kinds of things that they are building for alternative dispute resolution. I think that in a negotiation workplace, you and other negotiators will have a full range of technology available. In that respect, I want to join others who have spoken about combining the Internet with other kinds of cutting-edge technologies, such as supercomputing and video and audio applications. That's what I consider the information revolution.

What are some of those technologies? Here are some of the things that I would expect to be in a negotiation workplace: open architecture systems to provide consistency of access with others; synchronous, as well as asynchronous, capacity so that everyone can work on the same text at the same time even though they are physically separate; and the use of simulation models so that you can play "what if": What if we go this way? What if we do this? What if we take Jon's proposal rather than Dan's proposal; what are the outcomes? I also would expect the negotiation workplace to have systems dynamics, which is a means of bringing people to agreement and getting them to think at a systems level, at a more complete level. I also presume that the workplace will have better analytic models. We already have text management capability. I presume that the negotiation workplace would have databases that you could share, comment on, modify, or shift. Finally, one that is terribly important, although untried, is the prospect of having a simulation model that describes something that the parties have agreed to, thereby having some predictive quality about what will happen. All the parties to the negotiation could use that model to monitor the implementation of what has been agreed.

Those are some complimentary tools that help define a negotiation workshop, some of its components. That kind of technology, coupled with the Internet, really is communication-oriented. These technologies are naturals for use in virtual negotiation or in distance negotiation because they are communication-oriented.

---

475. See *supra* Part II.B.



The reason for that is that top notch negotiation theory and practice is based on concepts primarily of integrative bargaining and are communication-based. When all of the people involved in a negotiation are present and are sharing information, you find a readiness to understand other people's mental models. These are some of the signature characteristics of several leading theoreticians in negotiation.

My mind runs to Walton and McKersie, who, in 1965, developed the idea of integrative bargaining and distributive bargaining.<sup>476</sup> Other negotiation models that share similar characteristics and are communications-based include Fisher and Ury's *Getting to Yes*,<sup>477</sup> Bazerman and Lewicki's *Negotiating in Organizations*,<sup>478</sup> and Lax and Sebenius' *The Manager as Negotiator*.<sup>479</sup>

Thus, I think it is fairly easy to make the link, at least at the superficial level, between the Internet and its impact on negotiation.

Now, I would like to turn to the regulatory side and address how these technologies might be turned to good purpose in negotiations in the field of regulation. First, we have to ask what we mean by "turn-to-good-purposes." Here we mean using technology to help people negotiate to reach agreements that improve the regulatory system.

There are many complaints about the regulatory systems in the United States.

The first is coordination among regulatory agencies. Currently, problems regarding coordination among agencies involve overlapping legal mandates, laws, regulations, interests, positions, and customers. The availability of remote negotiations among agencies would seem to offer potential added value through facilitating joint building of databases, sharing of technical data, and greater ease in ongoing negotiations on a wide range of issues requiring implementation.

A second arena is the collection of information through the regulatory hearing process under the long-standing Administrative Procedure Act.<sup>480</sup> It traditionally has been a bimodal affair at which those with stakes in the issue at hand appear one at a time before the agency hearing panel. The technology of virtual negotiation will

---

476. See ROBERT E. WALTON & ROBERT B. MCKERSIE, A BEHAVIORAL THEORY OF LABOR NEGOTIATIONS; AN ANALYSIS OF A SOCIAL INTERACTION SYSTEM (1965).

477. ROGER FISHER & WILLIAM URY, GETTING TO YES: NEGOTIATING AGREEMENT WITHOUT GIVING IN (Bruce Patton ed., 2d ed. 1991).

478. MAX H. BAZERMAN & RAY J. LEWICKI, NEGOTIATING IN ORGANIZATIONS (1983).

479. DAVID A. LAX & JAMES K. SEBENIUS, THE MANAGER AS NEGOTIATOR: BARGAINING FOR COOPERATION AND COMPETITIVE GAIN (1986).

480. See Administrative Procedure Act, 5 U.S.C. §§ 551-559 (1994).

make it technically possible to hold hearings with witnesses located around the country participating simultaneously in the rule-making process.

Very closely related is a third process, negotiated rule-making, or RegNeg, which got underway seriously a dozen years ago.<sup>481</sup> A major law-making innovation, RegNeg is built around the concept of bringing the major stakeholders in an issue together to negotiate a consensus-based draft rule to be inserted into the traditional rule-making process.<sup>482</sup> The idea of including a much broader group of people, nationwide perhaps, is an idea that will be facilitated by the availability of the technology we have been talking about.

At the international level, the impacts of the advantages of these technologies seem fairly straightforward. Negotiations over the issues of governance that are best handled at the global stage will be facilitated greatly by the ability to negotiate while staying at home, instead of traveling to Geneva or New York. Some say that international diplomats may come to miss those cities. However, the advent of Virtual Negotiations would seem to benefit the development of a world rule of law in such areas as the environment, health, shipping, and trade, as well as other subject areas truly global in scope. At the federal level, consider the impacts the new information technologies may have in these arenas.

I want to end by raising two problems that I see in the application of Virtual Negotiation, over and above issues of authenticity and security. First, there is the issue of metrics for measurement. How do we know how the evaluation is to be made? I think innovators of technology often make things because they are makeable, being less interested in spending time on systems for evaluating what they have created. Today we heard a lot about managing the flood of data and whether lawyers can keep up with it. We need to develop the tools—identify the variables—by which we measure the effectiveness of the information technology that brings us those data.

Finally, there is the question of buy-in, the acceptance of the new technology. I will summarize the conclusions Professor Wanda Orlikowski, a colleague of mine at the Sloan School, made when she studied the introduction of Lotus Notes<sup>483</sup> in a large consulting firm.<sup>484</sup> She, in effect, said that mental models, and specifically the

---

481. See *id.* § 552(a)(4)(F).

482. See *id.* § 561.

483. See Lotus, *supra* note 84.

484. See Wanda J. Orlikowski, *Learning from Notes: Organizational Issues in Groupware Implementation*, 9 THE INFO. SOC'Y 237 (1993).

absence of mental models that appreciate the collaborative nature of groupware, and structural properties significantly influence how group technology is implemented and used.<sup>485</sup> In such situations, technology will be interpreted in terms of familiar technologies. Orlikowski says that in competitive and individualistic organizational structures in which there are few incentives or norms for cooperating or sharing expertise, groupware, on its own, is unlikely to engender collaboration.<sup>486</sup> This conclusion has importance for the acceptance of Virtual Negotiation, whether it is in regulatory reform or other negotiations, for the rapidity of accepting these new ways of reaching agreement will turn heavily on the internal culture of the organizations involved. Thank you.

MR. ADAM: We see that there are some trends here that are very clear. There is a tremendous growth in networking, and there is a tremendous growth in the way people are using the network and the Internet. We have a wide range of users. No longer do we have just scientists using these technologies; we also have many specialists, like lawyers and physicians.

So we have seen a tremendous growth in networking. We see that researchers, educators, business publishers, and lawyers, all are using the network. The nature of the information that we are dealing with no longer is just text, but other media, including video, images, and audio.

We also have what we refer to as digital libraries, and I think several people already have alluded to this. Basically, digital libraries are collections of objects covering a wide range of interests and domains, such as law, arts, music, medicine, literature, and history. These objects are of a wide variety of data types including text, images, audio, and video. These collections of objects are linked together by networks and are available remotely to diverse users for a widely varying usage.

The Global Legal Information Network ("GLIN")<sup>487</sup> is a type of digital library. It basically is a project that was initiated by the Law Library of Congress, the purpose of which was to develop a more efficient way to collect and disseminate legal information globally. The network grew out of a need expressed by a number of nations to

---

485. See *id.* at 247-49.

486. See *id.*

487. See Law Library of Congress: Global Legal Information Network, *The GLIN Welcoming Page* (last modified Apr. 29, 1996) <<http://lcweb2.loc.gov/glin/glinhome.html>> (on file with *The American University Law Review*).

harmonize their legal systems with other countries.<sup>488</sup> For example, these countries want greater similarity in dealing with trade, narcotics, and firearms so that they might improve international cooperation in these areas. We, at NASA, also saw the need for such effort, and recently the Law Library of Congress asked NASA to help with GLIN because NASA is involved in several technical projects that deal with digital libraries.

The goal of GLIN basically is to operate in a sound technological infrastructure. We also want to assure active users anywhere in the world that the legal information they receive is secure and authentic.

Where do we stand now? Currently, member countries include Argentina, Brazil, Hungary, Republic of Korea, Kuwait, Lithuania, Mauritania, Mexico, Poland, Romania, and Ukraine. A number of other countries have expressed interest in joining and their membership is being negotiated. These countries include Albania, Egypt, Israel, Nicaragua, Paraguay, Sweden, Tunisia, and Uruguay. Each piece of legal information that is made available to the GLIN system is abstracted and summarized in terms of the source and the title. The abstract is available in English and in the original language. Legal experts have taken all of this information and have developed indices and index terms by hand. This has been done for every law that has been made available to us. From our point of view, that is a large manual effort to summarize those laws and regulations.

I do not have any legal background. I am a professor in computer information systems. I have looked at this project from the technical point of view. Currently, we provide only text data, which obviously is limited. You can search on specific countries, publication dates, and key words, and we have a search engine included, which was developed by the University of Massachusetts.<sup>489</sup> Basically, it produces ranked queries. So, for instance, if I asked for all the laws that deal with Mexico, that were published during a particular period, and that pertain to import/export, the search engine will give you all types of answers. It does limit the number of queries returned to 100. To me, this is not an efficient way of doing business because the user must go through all those answers and try to identify the ones that are relevant.

---

488. See Nabil R. Adam et al., *The Global Legal Information Network ("GLIN")*, 46 AM. U. L. REV. 477, 479 (1996).

489. See Law Library of Congress: Global Legal Information Network, *Database Search Form*, Law Library (last modified Apr. 29, 1996) <<http://lcweb2.loc.gov/glin/mdbquery.html>> (on file with *The American University Law Review*).

So we are working toward an international system that will provide not just text, but multimedia types of data: images, maps, and so on. We also would like to automate or to semi-automate the process so that those summaries do not have to be developed manually by experts. We would like the computer to make a first cut, and then have an expert go through and refine the summaries. We also would like to have a richer and more intelligent user interface.

Let me share some of the ideas and some of the challenges that we are thinking about. The first idea is how do you extract information. How are we able to search as domain experts based on semantic concepts, not just key words, because key words are not an efficient way of searching? How do we achieve universal access, given that we are talking about such information that is available across the world and not just across the nation? How do we develop a user interface that is rich and has some intelligence in it? How do you deal with security, and how do we develop a query language that will enable us to narrow that query so that it is efficient? Let me spend a few seconds on these ideas and problems.

When I say searching or extracting information "based on concepts" I mean searching with keywords in a context. For instance, if I want information on trade restriction, I do not want to base a keyword search on the words "trade restriction" because the system will look for all the laws that have to do with trade restriction and give me hundreds and hundreds of laws that may or may not be relevant. I also will miss some laws that I need because not every law that deals implicitly with trade restrictions actually will have those terms. So we need to have those kinds of extractors that use the context and do not just look for key words. This idea is not really something that is new. The University of Massachusetts is working on message understanding that extracts information automatically. But it is a very limited domain. We would like to expand the domain to the domain of law and to develop it in a systematic way.

Another thing I would like to talk about is universal access. What do we mean by universal access? Well, we are dealing with a large number of users who have a wide variety of information appliances, meaning computers, televisions, personal assistant devices, workstations, and PCs, all of which have different capabilities. So, there is no standard on information appliances. We need to have a system that all people can access, even though there is no standard.

I would like to have some intelligence built into the system that will facilitate universal access, that is, if a certain user has a powerful workstation that can display the graphs and images and deal with the

audio, the system on our side should be able to detect that and send the user what is appropriate and what fits his or her machine. Similarly, if the user's information appliance is not powerful and can only deal with sound—like my cellular phone—our side should adjust and send only the sound to the user and not send the rest of the material. The system should have the intelligence to adjust and to send to the user the information that suits the capabilities of the hardware that he or she is using. This is what we mean by universal access—being able to deal with the user in terms of his or her hardware capabilities, preferences, and user profiles. So, if I know that the user is in his or her office from three to five p.m. and would like to see only text and not have images or sounds, the user will receive only the text. But, if at a different point during the day, the user is in a different place and would like to have text, images, and sound, our system will recognize the user's preferences and will accommodate them.

We would like to have a notetaker feature where we allow users to be able to add margin notes to text that has been read and accessed by other users. Thus, a user will be able to find out what other users have been accessing and what their thoughts are about a particular subject. This facility can be viewed as an abbreviated form of forum discussions and electronic meeting rooms. We want to make sure that the notes of users are tied to the legal text that makes the notes contextual and relevant. In addition, only users who are reading a certain text will see these notes; all other users will not be subjected to irrelevant information. We also want to create a virtual discussion room where you can propose a question on a given object or a given law and discuss it. So, if you are looking at a document, you will be able to tap any discussion that has to do with that document.

Security is an issue, and there are a few other challenges that we are dealing with. We are in the process of starting to implement that system, but we do not want to start from scratch. We are looking around to see what is already available and to make use of it in our system.

I will stop here and thank you for your patience.

(Applause)

Thank you.

## APPENDIX: PARTICIPANTS

NABIL R. ADAM received his M.S., M. Phil, and Ph.D. degrees from Columbia University. He is a Professor of Computers & Information Systems and Chair of the MS/CIS Department and the Director of the Center for Information Management, Integration, and Connectivity (CIMIC) at Rutgers University. He is also a Member of the Rutgers Graduate Program in Industrial and Systems Engineering.

Dr. Adam contributes to many journals including *IEEE Transactions on Software Engineering*, *ACM Computing Surveys*, *Information Systems*, and *Journal of Intelligent and Cooperative Information Systems*. He served as a guest editor for the *CACM*, *Operations Research*, and *Journal of Management Information Systems*. In addition, he co-edited seven books including *Electronic Commerce* (1996), *Digital Libraries* (1995) and *Advanced Databases* (1993) all published as part of the Springer Verlag Lecture Note Series in Computer Science.

Dr. Adam is a co-editor-in-chief of the *International Journal on Digital Libraries* and serves on the editorial board of the *Journal of Management Information Systems* and the *Journal of Electronic Commerce*.

Dr. Adam's research work has been supported by the Defense Logistics Agency, The NASA Center for Excellence in Space Data and Information Science, and Bellcore. He serves as a consultant to several organizations, including Bellcore, The NASA Center for Excellence in Space Data and Information Sciences, and NASA Goddard Space Flight Center.

JAMES B. ALTMAN is a partner with the Washington, D.C. firm of Miller & Chevalier. He has a background in science and technology and specializes in matters involving complex technical and economic issues, such as intellectual property disputes; issues involving the electronics, computer, and biotechnology industries, including application of U.S. export control laws and the use of cryptography; issues involving pricing of natural resources and industrial and consumer products; and issues of international trade regulation.

Mr. Altman has extensive litigation experience in administrative, judicial, and international panel hearings and trials, as well as various forms of alternative dispute resolution, including considerable experience with very large, complex cases.

He is a 1978 graduate of Boalt Hall School of Law, University of California, Berkeley, where he was an Associate Editor of the *California Law Review* and a member of the *Ecology Law Quarterly*. He has his

B.S. and M.S. degrees in physics from the Massachusetts Institute of Technology.

CLIFFORD L. BRODY of Clifford Brody Associates, Inc., currently advises leading international commercial firms (U.S. West, Hearst Publications, and Hewlett-Packard) and banks (Morgan Guaranty and CitiBank) on the best strategies and implementation programs for using electronic commerce, the Internet, and offline processing for introducing new products and services, and on the most effective traditional and electronic marketing and advertising programs to assure success in highly competitive domestic and foreign markets.

Before establishing his consulting firm, Mr. Brody was a Foreign Service Officer from 1966 to 1979. He was posted to U.S. embassies in Paris and Prague; to Secretary of State Henry Kissinger's staff; as a liaison between the Department of State and Congress; as a negotiator for economic agreements with the former Soviet and Eastern European governments; and as a Special Advisor for European Affairs to the Joint Congressional-Executive Commission on Security and Cooperation in Europe ("CSCE").

Mr. Brody received his B.A. from Dickinson College in 1964 (Political Science, Accounting, and History) and his M.A. in Public Administration from George Washington University in 1966.

THOMAS R. BRUCE is a Research Associate at the Cornell Law School. (He is, by the way, the first individual without a law degree to have been appointed to the faculty at the Cornell Law School). With Peter Martin, he co-directs the Legal Information Institute ("LII"), which they characterize as "the equivalent of a small, electronic university press." The LII engages in the distribution of legal information in hypertextual format on disk and via the Internet, including materials of interest to law students, legal academics, legal practitioners, and managers in industries impacted by regulation. The LII also provides a variety of publishing, consulting, and software development services through joint-study corporate sponsorship and licensing arrangements with companies such as IBM, West Publishing, LEXIS-NEXIS, Shepard's McGraw-Hill, Folio Corporation, Counsel Connect, Matthew Bender, Distinct Corporation, Softronics, Transnational Juris Publications, and Lawyer's Cooperative Publishing.

Mr. Bruce is author of the now sadly dated Internet browser Cello, 150,000 or more copies of which have been used by people ranging from high school students in Massachusetts to engineers at Martin-Marietta Corporation and scientists at Bellcore Communica-



tions Research. The program has received notices in *PC Week*, *PC Magazine*, *Network World*, *Internet World*, *PC Computing*, and 400 other computer industry publications, newspapers, books, and magazines. Despite its failure to age gracefully, Cello still is downloaded 100 or more times daily.

Mr. Bruce maintains a lingering contact with an earlier career in show business by producing the occasional video on legal matters; the last was a commissioned piece on the history of the Supreme Judicial Court of Massachusetts produced for its tercentenary. He is a member of the Board of Directors of the Center for Computer-Assisted Legal Instruction, the Advisory Board of the *Journal of Online Law*, and a frequent presenter at meetings of lawyers, legal technologists, and law librarians, here and abroad.

MARY J. CULNAN is an associate professor in the School of Business, Georgetown University, where she teaches courses on information systems including electronic commerce. Her current research focuses on consumer privacy and database marketing. She has testified before Congress on a range of privacy issues including the Driver's Privacy Protection Act, the Fair Credit Reporting Act, telecommunications privacy, the use of mailing lists for direct mail marketing, and private sector use of the Social Security number. She also consults on privacy to a number of organizations including Mobil Oil, the U.S. Postal Service, Equifax, MasterCard International, American Express, and AT&T.

Before joining the faculty at Georgetown in 1988, Professor Culnan held faculty positions at American University, the University of California, Berkeley, and the University of Virginia. She also worked part-time on the staff of two U.S. Senators. In spring 1993, she served on a White House Task Force on Presidential Correspondence. Prior to earning her doctorate, she was employed for seven years as a systems analyst by the Burroughs Corporation.

Professor Culnan's work has been published in the *MIS Quarterly*, *Management Science*, *Organization Science*, *Decision Science*, *Journal of the American Society for Information Science*, and *The New York Times*. Her research on consumer privacy has been profiled in two direct marketing trade publications. She is also a co-author of *The Ethics of Information Management* (Sage, 1995), and received funding from the National Science Foundation for a study of constituent mail handling in the U.S. Senate. She holds an A.B. in political science from the College of Wooster, an M.S. in library/information sciences from

Florida State University, and a Ph.D. in management from the Graduate School of Management at UCLA.

ROBERT GELLMAN, a 1973 graduate of Yale Law School, served for seventeen years as counsel to the Subcommittee on Information, Justice, Transportation, and Agriculture of the House of Representatives' Committee on Government Operations. His responsibilities centered on information policy issues such as privacy, electronic data policy, freedom of information, archives, and security classification.

He has written and spoken frequently on privacy and information policy matters, both in the United States and abroad.

He is now a consultant specializing in health records confidentiality policy, privacy policy, access to government records, and legislative affairs. He also serves as Executive Director of the Virtual Magistrate Project, an Internet arbitration service.

CLAUDIO GROSSMAN is the Dean of the Washington College of Law of American University, the Raymond Geraldson Scholar of International and Humanitarian Law, and President of the Inter-American Commission on Human Rights, Organization of American States.

MARK HELLMANN is a partner at Pattishall, McAlliffe, Newbury, Hilliard, and Geraldson. He has an extensive computer and information technology background. While receiving a B.A. and M.S. in physics, he became involved in computer programming, design and information usage.

Mr. Hellmann has practiced computer law for the past twenty years and has substantial litigation, transactional, and arbitration experience in this area. At Palo Alto Research Center (Xerox), he worked on operating systems design, as well as information structure, creation and distribution systems. He has represented computer manufacturers and online services in contract negotiations and seller/purchaser disputes, emphasizing intellectual property and licensing issues.

His transactional practice in the area of computer law involves vendor and purchaser contracts, licenses, and other agreements. He also provides guidance in the purchase and sale of hardware and software companies and assists corporate counsel in the acquisition of major computer and digital hardware and software.

Mr. Hellmann is the former chair of the Computer and Technology Division of the Law Practice Management Section of the American

Bar Association and sits on the ABA's Technology Counsel. He is also the former chair of the Computer Section of the Federal Bar Association. Mr. Hellmann was responsible for designing and developing the computer lab at the John Marshall Law School where he also teaches computer law as an adjunct faculty member.

ETHAN KATSH is Professor of Legal Studies at the University of Massachusetts at Amherst. He is a graduate of the Yale Law School. His main area of expertise is in law and computer technology, and he is the author of two books on the subject, *Law in a Digital World* (Oxford University Press, 1995) and *The Electronic Media and the Transformation of Law* (Oxford University Press, 1989), as well as many articles. He is co-director of the Online Ombuds Office (<http://www.ombuds.org>), and moderator of the Internet Dispute-res listserv, a forum of more than 600 persons with interests in alternative dispute resolution.

ELEANOR KERLOW is Executive Editor at Counsel Connect, Washington, D.C., the largest online service for lawyers. Ms. Kerlow is a 1985 graduate of the George Washington University National Law Center.

Before deciding to pursue a career in legal journalism, Ms. Kerlow worked for the Inter-American Development Bank and for a telecommunications boutique then known as Goldberg & Spector.

Ms. Kerlow is a former Senior Editor at *Legal Times* in Washington D.C. Ms. Kerlow's book, *Poisoned Ivy: How Egos, Ideology, and Power Politics Almost Ruined Harvard Law School* (St. Martin's Press, 1995), is a ground-breaking study of that institution, featuring new information and discussion of the controversies and personalities that have marked the school in recent years.

JON E. KLEMENS is President and COO of First Renaissance Ventures, Inc., a venture capital and financial services firm that provides a range of advisory, strategic planning, and financial services to companies marketing and developing legal products and services.

Prior to assuming the presidency of First Renaissance, Mr. Klemens was a shareholder and administrative principal of Altman Weil Pensa, Inc., a leading international legal consulting firm. During his fifteen year career at the consulting firm, Mr. Klemens headed both the Technology Services and Market Research/Vendor Advisory practices. In addition to law firm and law department client projects, Mr. Klemens managed and conducted projects for clients such as

Microsoft, Apple, the ABA, IBM, LEXIS-NEXIS, CCH, Kodak, and Xerox.

Mr. Klemens currently serves as a Chair of the National Association of Legal Vendors and a Co-Chair of the TAP 2 Inter-Association Educational Exhibit now traveling and co-sponsored by the Association of Legal Administrators, the ABA, and NALV. He is a member of the Law Practice Management and Judicial Administration Division Sections of the ABA and is an Associate Member of the American Bar and International Bar Associations. He has served as an advisor and consultant to ABANet, the ABA Legal Technology Resource Center and to the ABA's Project 2000 Planning committee. He has spoken at numerous legal conferences and has been published and quoted in the *Wall Street Journal*, *ABA Journal*, the *National Law Journal*, *American Lawyer*, and numerous state and local bar publications.

Mr. Klemens has a B.A. in Economics from Bucknell University. Prior to consulting, Mr. Klemens worked as a systems engineer and marketing representative for IBM.

JOHN M. KUTTLER is a Senior Manager in the Washington, D.C., office of Price Waterhouse's Law Firm and Law Department Services Group. He has been with Price Waterhouse for seven years and focuses on providing technology consulting services to law firms. His work includes the development of law firm technology strategies as well as requirements definition, selection, and implementation of a wide range of systems including document management and financial systems. Several of Mr. Kuttler's recent technology planning projects address the use of the Internet by lawyers, as well as the applicability of Intranets for law firms.

Mr. Kuttler received his B.S.E. degree in Electrical Engineering from Duke University and his M.B.A. from the Fuqua School of Business. Mr. Kuttler wishes to recognize the contributions of Eric Haas, a Senior Consultant at Price Waterhouse LLP, who developed much of the material presented, and who contributed to editing the transcript.

RONALD D. LEE has been the General Counsel of the National Security Agency since August 1, 1994. As General Counsel, Mr. Lee serves as the chief legal officer of the Agency and represents the Agency in all legal matters.

Mr. Lee was a partner in the law firm of Arnold & Porter, Los Angeles from 1993-94. Prior to that he was an associate at Arnold & Porter in Washington, D.C., and Los Angeles. While at Arnold &

Porter, Mr. Lee's practice areas included: product liability litigation and corporate investigations involving medical devices and blood, including regulatory aspects; prelitigation investigations and representation of lawyers and law firms in civil suits and in threatened indictments or referrals to the Department of Justice; and antitrust, aviation, and general business litigation and counseling. From 1986-87, Mr. Lee was a law clerk to Justice John Paul Stevens, United States Supreme Court. From 1985-86, he was a law clerk to Judge Abner J. Mikva, United States Court of Appeals, D.C. Circuit.

Mr. Lee received his J.D. from Yale Law School in 1985; M. Phil. in 1982 from Oxford University (International Relations), and A.B. in 1980 from Princeton University, with highest honors (History).

Mr. Lee was a Rhodes Scholar (California and Balliol) in 1980-82. In 1980, he received the M. Taylor Pyne Prize, Princeton University (for excellence in scholarship and effective support of the interests of Princeton University, the highest general award for a graduating senior). In 1980, Mr. Lee was elected to Phi Beta Kappa, Princeton Chapter and he received the Laurence Hutton Memorial Prize in History (for highest departmental standing as a senior). In 1979 he received the William Koren Jr. Memorial Prize in History (for highest departmental standing as a junior). In 1980 and 1978, Mr. Lee received Book Prizes awarded by the Consulates of Austria and the Federal Republic of Germany for Excellence in German Language Courses.

PETER W. MARTIN is the Jane M.G. Foster Professor of Law at Cornell Law School where he has been a member of the faculty since 1971 and was dean from 1980-88. He is the author of an electronic treatise, *Martin on Social Security Law* released on LEXIS in November 1990 and published on CD-ROM by Clark Boardman Callaghan in July 1994 as *Social Security Plus*, an electronic reference work, "Basic Legal Citation" (Hypertext, 1993), and an electronic article on the history of legal information technology, first published on the Internet in January 1996 by *GNN Magazine*. His most recent journal articles have addressed the implications of computer technology for legal research and law libraries. He received the 1992 Law Library Journal Article of the Year Award, and his Social Security treatise received the 1994 Infobase Industry Award for "Best from the Field of Education."

Professor Martin is a past president of the Center for Computer Assisted Legal Instruction and immediate past chair of the Association of American Law Schools Section of Law and Computers. His

electronic treatise work was supported in part by the National Center for Automated Information Research ("NCAIR"), which awarded him the Center's first Dixon Senior Research Fellowship in 1988. In 1992 with support from NCAIR and others, he (and Thomas R. Bruce) established the Legal Information Institute at Cornell that publishes legal materials on disk and maintains Internet servers (both Gopher and World Wide Web) focusing on and distributing legal material.

CANTWELL F. MUCKENFUSS III is a partner in the Washington, D.C., office of Gibson, Dunn & Crutcher. He specializes in the representation of financial institutions and coordinates the firm's Financial Institutions Group. Before joining the firm in 1981, Mr. Muckenfuss was Senior Deputy Comptroller for policy at the Office of the Comptroller of the Currency (1978-81), and Special Assistant to the Director (1974-77) and Counsel to the Chairman (1977-78) of the Federal Deposit Insurance Corporation. In 1980, he was awarded the Presidential Rank Award.

Mr. Muckenfuss is Co-Chair of the International Banking and Finance Committee, Section of International Law and Practice, American Bar Association, and a member of the American Bar Association Committee on Banking Law and Committee on Savings Institutions. He is also a member of the Board of Advisors of the *Review of Banking and Financial Services*, and served as a member of the Administrative Conference of the United States.

Mr. Muckenfuss received his bachelor of arts degree from Vanderbilt University, where he was a member of Phi Beta Kappa, and his law degree from Yale Law School. He was a clerk to the Honorable William E. Miller of the U.S. Court of Appeals for the Sixth Circuit (1971-72).

DANIEL NYHART is Professor of Management and Ocean Engineering at MIT. His educational background includes an A.B. degree from the Woodrow Wilson School of Public and International Affairs at Princeton in 1953 and a J.D. degree from Harvard Law School in 1958. Professor Nyhart's main research areas are the development, application, and evaluation of computer based models in many kinds of negotiations and the study of managerial jurisprudence in the United States. His teaching responsibilities are in the area of managerial, international and ocean law, and government business relations.

Professor Nyhart is the editor of *Coastal Zone and Continental Shelf Conflict Resolution; Law and Science in Collaboration* (with Milton

Carrow), and *Science Technology and Judicial Decision Making*. Current working papers include: *Generic Computer Tools as Aids in Negotiation: The Issue of User Adoption* (with Dhanesh Samarasan); *Does the Use of Models in Negotiations Increase the Integrative Character of the Bargaining?*, and *Strategic Restructuring of the General Counsel's Task: Creating a Managerial Jurisprudence for Tomorrow's Organizations*. Recent journal articles include: *The Elements of Negotiation Management* (with Samarasan); *A Preliminary Analysis of the Uses of Scientific Models in Dispute Prevention, Management and Resolution* (with Edward A. Dauer); and *Dispute Resolution and Preventive Law: A Reply to Professor Brown* (with Dauer).

He is a member of the Advisory Council of IDEA, and the American Bar Association.

IRA H. PARKER is a partner in the Financial Institutions Group of Alston & Bird's Washington, D.C. office. Mr. Parker specializes in bank technology and electronic commerce matters. He is a frequent lecturer on bank technology issues, editor-in-chief of the Electronic Banking Law and Commerce Report, and serves on numerous committees on digital signatures, encryption technology, and stored-value products.

Mr. Parker was formerly Vice President and Associate General Counsel with the Resolution Trust Corporation ("RTC"). At RTC, he headed the department of litigation and supervised a national staff of attorneys responsible for all litigation affecting RTC nationwide. His responsibilities included developing RTC litigation policies and procedures, testifying before the House and Senate Banking Committees, supervising major litigation, and assuming a lead role in negotiating significant matters.

Prior to joining RTC, Mr. Parker was Assistant General Counsel for litigation and policy with the Federal Deposit Insurance Corporation ("FDIC"). At the FDIC he was responsible for the coordination of the FDIC's closed bank litigation efforts in trial courts throughout the United States. While at the FDIC, he also developed policy on major banking issues and drafted many of the banking provisions of the Crime Control Act of 1990 and the Federal Deposit Insurance Corporate Improvement Act of 1991. He spent eight years with the FDIC and RTC.

Mr. Parker graduated from the Emory University School of Law in 1981 and received a B.A. magna cum laude from Brooklyn College, City University of New York in 1978.

RONALD L. PLESSER is a graduate of the George Washington University with a degree in English Literature and Law. In 1972, Mr. Plesser joined the Center for Study of Responsive Law and was primarily responsible for litigation and legislative activities concerning the Freedom of Information Act. In 1975, Mr. Plesser served as General Counsel to the U.S. Privacy Protection Study Commission. Currently he is a partner with the law firm of Piper and Marbury, Washington, D.C. Mr. Plesser is Chair of the Individual Rights and Responsibilities Section of the American Bar Association. He has been an adjunct professor of law at George Washington University (1982-86), and was also Deputy Director of the Science, Space, and Technology Cluster of the 1992 Clinton-Gore Transition.

Mr. Plesser specializes in issues that concern legislative matters, telecommunications, privacy, data base companies, publishers, information and software providers and users, marketers, and other companies affected by the emergence of new information technologies. Representing numerous clients, including trade associations and individual companies, Mr. Plesser has appeared before the United States Congress, federal agencies, and in federal and state court.

RANDY V. SABETT currently is an associate in the Washington, D.C. office of Venable, Baetjer, Howard & Civiletti. Prior to that Mr. Sabett was a field application engineer for Spyryus, Inc., and has more than five years of experience in the government and commercial information security marketplace. He has extensive experience in the development of high grade cryptographic products to ensure confidentiality, authentication, and access control utilizing public/private key exchanges methods. Mr. Sabett works with customers to develop and deploy secure messaging and communications products/systems utilizing PCMCIA security tokens. In addition, he is active in several organizations including the Information Security Committee of the Section of Science and Technology of the American Bar Association. Within that committee he is the co-chair of the Key Escrow Working Group which focuses on issues involved in the commercial key escrow area.

Prior to joining Spyryus, Mr. Sabett worked in the active noise cancellation field, including the initial implementation of the structured design process for software development at Noise Cancellation Technologies, Inc. He was awarded a patent (#5,440,642) for an "Analog Noise Cancellation System Using Digital Optimizing of Variable Parameters," and has another patent pending. In addition, he worked for the National Security Agency in the fields of software



cryptography and embedded cryptographic modules for four years. Mr. Sabett holds a Bachelor of Science degree in Computer Engineering from Syracuse University. He received a Juris Doctorate degree from the University of Baltimore.

ROSEMARY SHIELS is the American Bar Association's director of the Section of Law Practice Management. The Section provides its 20,000 members with programs, publications, and direct assistance on individual and firm practice development and management topics.

Prior to this post, Ms. Shiels was the Law and Computer Fellow, and the Director for Center for Law and Computers at Chicago-Kent College of Law. During her tenure, she researched and analyzed the impact of technology on law practice and legal education. In addition, Ms. Shiels managed and guided the law school's mission of developing and delivering core legal education material electronically. In the Fall of 1994, Ms. Shiels directed the Chicago-Kent College of Law Legal Writing/Notebook Computer project in which thirty first-year students received five core casebooks in electronic format on the hard drives of their notebook computers. Before joining the law school, Ms. Shiels practiced with the firm of Burke, Wilson & McIlvaine in the Estate Planning Department, and later, was policy analyst for Protection & Advocacy.

Ms. Shiels received her J.D. from Chicago-Kent College of Law, Illinois Institute of Technology; her M.A. from the University of Colorado; and her B.A. from Mundelein College of Loyola University of Chicago.

