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A LAWYER'S ROADMAP OF THE INFORMATION SUPERHIGHWAY

By Mark L. Gordon and Diana J.P. McKenzie†

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Forrester Research, a Cambridge, Mass., technology-resource firm, estimates that the commercial on-line computer-service market will grow to a $3 billion industry by 1998, up from today's $530 million, as users move beyond talk and data sharing to buying goods and services.¹

The national news media have been reporting on what the Clinton administration has described as an "information superhighway." The principles behind this system include developing a national data and information network through private initiative, ensuring that all citizens have affordable access to it, creating linking standards, and putting government data and information on the network. The development of this highway has led to an unprecedented realignment of the telecommunications industry, with telephone, cable, cellular, and entertainment companies actively pursuing alliances, mergers and joint ventures with companies that just a few months back were their fierce competitors.

The speed of the realignment of the telecommunications industry is representative of the pace at which change in the entire information area is occurring. However, that realignment is not likely to be the only significant outcome of the construction of the information superhighway. As the superhighway is built, we should expect interesting pricing developments as the entrants struggle to determine the appropriate toll for travelling upon the highway. We should also expect to face new and challenging legal issues as those driving on the highway attempt to maneuver around the concealed potholes.

I. THE INFORMATION SUPERHIGHWAY - THE NEW TOLL ROAD?

The term "information superhighway" was coined in 1978 by Mr. Albert Gore.² Although Vice-President Gore still uses this expression, he now uses the term interchangeably with the terms "electronic highway" and "National Information Infrastructure" ("NII").³ Whatever it is labeled, the information superhighway is a top priority for the Clinton Administration. In its recently released NII Agenda for Action, the White House described its vision of the NII as: "a seamless web of communicat-

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3. Id.
tions networks, computers, databases, and consumer electronics that will put vast amounts of information at users' fingertips. Development of the NII can help unleash an information revolution that will change forever the way people live, work, and interact with each other.\textsuperscript{4} In other words, the NII is a program charged with "making government work better," making "the United States the world leader in science, engineering and technology," and delivering "to all Americans the information they need when they need it, when they want it - at an affordable price."\textsuperscript{5}

The potential for information that could be available on the electronic highway is explosive. Bill Gates, the chairman of Microsoft, gives these examples:

\begin{quote}
Let's say I am sitting at home wondering about some new drug that was prescribed to me. Or wanting to ask a question to my children's teacher. Or curious about my social security status. Or wondering about crime in my neighborhood. Or wanting to exchange information with other people thinking about visiting Tanzania. Or wondering if the new lawn mower I want to buy works well and if it's a good price. Or I want to ask people who read a book what they thought of it before I take my time reading it. In all of these cases being able to reach out and communicate by using a messaging or bulletin board type system lets me do something I could never do before.\textsuperscript{6}
\end{quote}

There is also some less exciting potential. In addition to the uses Mr. Gates suggests, the information highway "could also include graphic sex and violence, the potential of hate-generated channels and broadcast fundraisers for racial supremacy groups."\textsuperscript{7} Unlike TV, which consists of a few channels of very broad interest, the information highway will allow for more specific areas of interest along with an easy way to find things.\textsuperscript{8}

\begin{itemize}
\item \textsuperscript{4} White House, \textit{National Information Infrastructure Agenda for Action}, Sept. 15, 1993. A summary of the Agenda can be found in Appendix A.
\item \textsuperscript{5} Nearly 30 Companies Form Team to Plan NII Requirements, \textit{FIBER OPTICS NEWS}, Dec. 20, 1993.
\item \textsuperscript{7} Tim Jones, \textit{Information Highway Hype Has Familiar Ring}, \textit{CHI. TRIB.}, Jan. 16, 1994, §7, at 3.
\item \textsuperscript{8} Seabrook, \textit{supra} note 6, at 54. In Mr. Seabrook's follow-up to his Jan. 10, 1994 article he writes:
\begin{quote}
I received several requests for electronic reproductions of the piece. I replied that I didn't have one, and reminded people (sweetly) that the copyright belonged to me, and that \textit{The New Yorker} held certain reprint rights, and that the usual procedure was to ask my permission and, in some cases, to pay me. I realize that in saying this I was violating the spirit of the Net, which is all about sharing, and I was sort of surprised at myself, but the idea that my piece could be completely out of my or \textit{The New Yorker}'s control, that it could be reproduced thousands or millions of times, that it could be rewritten or reedited or even re-bylined sort of frightened me.
\end{quote}
\end{itemize}

When all this information actually becomes available in our homes and our businesses, many analysts believe that the "pipes" bringing such information will become "commodity items and, from an economic perspective, little different from the components of a plumbing system."

II. WHO IS BUILDING ON THE HIGHWAY?

Although it is widely agreed that the technology for the information highway exists or will soon be developed, the technology will not be fully operational until an infrastructure is in place to make it a workable system. One writer used this analogy: "The technology for this [electronic highway] exists . . . [b]ut it's like if you built the interstate highway system with no on-ramps, no hotels, no gas stations. We need to build the infrastructure to make this a workable system." Although the White House is enthusiastic about its involvement, even the government admits that ultimately it will be the private sector and not the government that will build the infrastructure.

Some of these private builders are now beginning to emerge.

A. NATIONAL INFORMATION INFRASTRUCTURE TESTBED

The National Information Infrastructure Testbed ("NIIT") is a coalition that includes AT&T, Sprint, Digital Equipment Corporation, Hewlett-Packard Company, Sandia National Labs, and SynOptics Communications. This coalition has been created with the purpose of developing a nationwide trial highway. The NIIT hopes to lure companies that have businesses or applications that might eventually be part of an information highway and desire to "test concepts on the NIIT, work out bugs, [and] see if there's a market."

The first project of the NIIT was an environmental network called the Earth Data System ("EDS"). EDS demonstrates the power and practicability of the emerging information superhighway. Those who have seen a demonstration of EDS describe it as:

- a multimedia application that allows geographically dispersed users to work with large amounts of environmental data and power as if they were sitting next to one another. The EDS information bank includes satellite images of land and oceans, weather statistics, coastline and river data, salinity levels and fishing yields gathered from large and small data bases used by a variety of public and private sources.

11. Id.
The NIIT has indicated that its next application will be unveiled this year and will involve an activity related to health care.

B. INTERNET

Unlike the NIIT, which has just recently been developed, the Internet is one of the earliest large network systems. The Internet was originally developed by the Department of Defense to allow scientists, academics, and others to share files. It is now one of the most extensive networks in existence, with an estimated 2.2 million machines participating. Information available on the Internet includes data and memory intensive items such as video and sound - items that are not available to current home users who must rely on ordinary telephone lines to connect to the network. Despite its limitations, fifteen million to thirty million people in 137 countries are currently using Internet, with approximately one million users added each month.

Although it was originally developed as a network for researchers and academics, various commercial applications are being planned to take advantage of the Internet. A new service called CommerceNet, backed by companies such as Hewlett-Packard, Apple, Sun Microsystems, Lockheed, and Bank of America, would allow users to purchase goods and services and do banking over the Internet.

C. NATIONAL RESEARCH AND EDUCATION NETWORK

The National Research and Education Network ("NREN") was conceived in 1989 by then Senator Albert Gore, and was later authorized by Section 102 of the High Performance Computing Act of 1991. The NREN is designed to build upon and eventually replace the Internet. One of the key differences between the Internet and the NREN is the speed of data transfer. Whereas the Internet transmits at 45 megabits per second, the NREN transmits at 1.2 gigabits per second. The difference in speed is essentially the difference between 1,607 text pages per second and 39,000 text pages per second. To give an example of its capabilities, the NREN would be able to transfer the entire Encyclopedia Britannica in approximately one second. This higher speed is especially important for researchers in fields like astronomy, metrology, and high-energy physics.

who require the higher data-transfer rates to develop more detailed models.

Other possible uses for the NREN include: electronic mail; books; journals and newspaper articles and other textual works available in hard copy; file exchange and transfer; bulletin boards; name look-up; access to supercomputer facilities; bibliographic and other specialized databases; gateways to commercial and foreign networks; computer-based conferencing; transfer of multimedia-formatted information; distributed development and use of computer applications; and collaborative work facilities.17

Efforts to expand the NREN and liberalize access to it seem certain to continue.

D. PRIVATE NETWORKS18

The growth in sales and subscribers of private networks is indicative of the anticipated potential of the electronic highway. Whereas in 1988 there were 105 million sales of private networks, in 1993 this number is estimated to have reached 651 million - a nearly 650 percent increase in five years. Similarly, the number of on-line subscribers has skyrocketed from .96 million in 1988 to an estimated 5.1 million in 1993, an increase of over 500 percent in five years.

1. Prodigy

With approximately 2,005,000 subscribers, Prodigy is an industry leader of private networks in terms of size. It is designed for people with little or no computer background. Like the other private networks, Prodigy allows users to access information quickly and easily. Information available on Prodigy includes: bulletin boards on popular topics; movie reviews; television schedules; and entertainment news.

2. CompuServe

CompuServe is designed for people who want to combine business and academic pursuits with the more family-oriented and hobby-related aspects of personal computing. Although it is easy for the novice to use due to its graphic-based software, CompuServe also allows more sophisticated on-line veterans to access the service with general communications software. CompuServe now has approximately 1,500,000 subscribers. The service recently announced that it experienced the

17. Priscilla A. Walter & Eric H. Sussman, Protecting Commercially Developed Information on the NREN, COMPUTER LAWYER, Apr. 1993, at 1, 2.

18. James Coates, From On-Line Hangout to Data Superhighway, CH. TRIB., Jan. 16, 1994, §7, at 1. Unless otherwise indicated, much of the information on private networks which appears in this section was derived from this article.
largest one month increase in subscribers in its 15-year history when it added 80,000 new members during the month of February, 1994. CompuServe attributed this increase to Americans’ increased awareness of on-line services and the declining cost of computers.

3. America Online

With its easy-to-use icons that let users move about with the click of a mouse, America Online is also designed with families and hobbyists in mind. For example, America Online is advantageous for those in the Chicago Metropolitan area because it includes Chicago Online, which contains on-line features such as local movie and theater schedules and locations, ticket ordering, bus schedules, and the daily and Sunday Chicago Tribune. America Online currently has approximately 1,300,000 subscribers.

4. GEnie

GEnie is known for its games and musical files, graphics and color photographs, and comprehensive stockpiles of software for IBM-compatible, Macintosh, Amiga, Commodore, and Apple II machines. It also allows inexperienced users access to extensive database searches. GEnie now has approximately 400,000 subscribers.

5. Delphi

Delphi is less user-friendly than many of the other private networks and thus is better suited for the more technologically oriented personal computer users. The most dramatic feature of Delphi is its access to the Internet. Delphi offers everything from software to White House press releases and currently maintains approximately 80,000 subscribers.

6. eWorld

In service since late June, 1994, Apple Computer’s newest venture, eWorld, is considered by to be most graphically attractive and easiest to use of the current private networks. At this time, eWorld is the only available to Macintosh users, but software for IBM-compatible windows users is planned to be released next year. So far, with the exception of Macintosh related subjects, the information offerings fall below those offered by the other major networks. Additionally, eWorld is considered

20. Telephone conference with Carol Wong of America Online (Nov. 9, 1994).
22. Id.
moderately more expensive than its competitors.\textsuperscript{23} However, eWorld has some unique information such as syndicated political columns, and with its already strong offering of Macintosh information, it has a good chance of becoming the major network for Macintosh users.\textsuperscript{24}

\section*{III. CARPOOLING AMONG THE BUILDERS}

Recently, there has been an unprecedented repositioning of the telecommunications industry, with telephone, cable, cellular, and entertainment companies competing for open lanes on the information highway.\textsuperscript{25} The extent of this repositioning is so great that the President of Bell Atlantic Corporation predicts, “five years from now, we will not be able to remember which companies were telephone companies and which were cable companies.”\textsuperscript{26} This repositioning is occurring because each of these companies realizes that it cannot be a significant player on the electronic highway alone. Moreover, they have discovered that in order to be successful they must pursue alliances, mergers, and joint ventures with their former competitors in order to keep pace with the speed of the technology development.

'It's very difficult right now for a telephone company to choose a technology and go forward with it,' said Steven R. Yanis, telecommunications analyst with Kidder, Peabody & Co. The technology is just moving too fast. . . . Forming alliances is a way to hedge your bets. The telephone people benefit from the cable firm's expertise and also reduce their threat as competitors.'\textsuperscript{27}

As fast as the technology is moving, service is expected to eclipse technology once the electronic highway is operational. Here too, however, forming alliances can be especially helpful. For example, cable companies can learn a lot about customer service from telephone companies. John Faier, a division head at Omnitech Consulting Group in Chicago, agrees: “Most cable companies grew very fast, and a lot still don’t have top-flight customer service, even in their largest markets.”\textsuperscript{28}

\subsection*{A. AT&T AND McCaw}

The purchase of McCaw Cellular, the nation’s largest cellular phone company, for approximately $12.6 billion in new stock\textsuperscript{29} by American

\begin{flushleft}
\textsuperscript{23} Id.
\textsuperscript{24} Id.
\textsuperscript{27} Van, supra note 9, at 2.
\textsuperscript{28} Id.
\textsuperscript{29} Andrew Leckey, AT&T At Information Highway's Crossroads, Chi. Trib., Jan. 16, 1994, § 7, at 10.
\end{flushleft}
Telephone & Telegraph Co., the biggest long-distance company, is a good example of the extent of deal-making in the information industry. Just hours after the Federal Communications Commission removed the last regulatory barrier to the proposed merger, the two companies closed the transaction which had started some 13 months earlier.

However, the combination of the largest long-distance telephone company and the largest cellular telephone concern still faces a lawsuit filed by Bell Atlantic Corp. and Nynex Corp. to block the merger. The lawsuit contends that the McCaw acquisition would enable AT&T to "cripple" cellular competitors by using its market power to supply cellular network equipment that is incompatible with other networks. Nonetheless, if the combination of McCaw and AT&T survives the legal challenges that it faces, it will enable the companies to jointly develop fiber-optic and cellular technology that could cut into the markets of the regional phone companies and lead to the development of a new video phone that can transmit images wirelessly.

B. Sprint, Bell Atlantic, and Nynex

In an effort to compete with AT&T's merger with McCaw, Sprint has announced that it is considering merging its cellular phone business with Bell Atlantic Corp. and Nynex Corp. If this merger goes through, Sprint would have over three million cellular subscribers and almost 76 million potential customers, slightly larger than AT&T and McCaw.

C. Bell Atlantic and TCI

When Bell Atlantic Corp. announced that it intended to buy Tele-Communications Inc. ("TCI"), the industry was stunned by the implications of such a merger. One commentator stated, "If the Bell Atlantic/Tele-Communication Inc. merger succeeds, it will combine one of the largest regional phone companies with the largest U.S. cable company, with links to Turner Broadcasting's film/video archives, Time Warner's entertainment services and QVC's home shopping network."

30. Van, supra note 9, at 1.
32. Id.
33. Leslie Cauley, Bell Atlantic and Nynex Sue to Block AT&T's Planned Acquisition of McCaw, WALL ST. J., Aug. 9, 1994, at B7.
34. Id.
36. Id.
37. Van, supra note 9, at 1.
The Bell Atlantic/TCI combination turned out to be a victim of the regulatory environment when the companies announced that they were unable to reach a final agreement. In the wake of a seven percent reduction in cable subscriber rates imposed by the Federal Communications Commission, Bell Atlantic dropped its offering price for fear that TCI's future cash flow would be reduced. This new wrinkle proved to be the final nail in the coffin of the TCI buyout.

D. VIACOM AND PARAMOUNT

Viacom, Inc., the cable network that owns Showtime, Nickelodeon, MTV, and VH1, won a bidding war against QVC Network, Inc., a home shopping service, to acquire Paramount Communications. This bidding war was unusually aggressive. Paramount Communications is known for its film studio, library of television shows (for example, "Star Trek" and "Wings"), book publishing, and sports franchises.

E. U.S. WEST, TIME WARNER, WOMETCO CABLE, AND GEORGIA CABLE TELEVISION

U.S. West, a regional phone company, acquired just over one-quarter of Time Warner's cable company last May in order to build an advanced, cable-television network that could link new types of wireless phones to hand-held computers and create interactive video-networks. It may be years before the impact of the $2.5 billion acquisition is seen. Additionally, U.S. West has said that it will purchase Wometco Cable for $490 million, and purchase Georgia Cable Television for $550 million in cash and $160 million in assumption of Georgia Cable's debt.

F. VIACOM AND BLOCKBUSTER

Blockbuster Entertainment Corporation, the nation's largest video rental company, has merged with Viacom, Inc. "One of Blockbuster's biggest assets is a database filled with more than 30 million customer names and information about their preferences in actors, directors and movie genres that would be helpful in marketing films." Industry analysts believe this is a clever move for Blockbuster which is otherwise un-
likely to preserve its earnings record in the face of the imminent threat from pay-per-view television, a likely outgrowth from the information superhighway.\textsuperscript{45}

G. **BELL SOUTH, SPRINT, AND GTE CORP.**

BellSouth Corporation, Sprint/Carolina Telephone, and GTE Corp. have teamed up to create a high-speed network designed to transmit voice, data, and video images in North Carolina. This system, which should be operational in late 1994, will be designed to use a synchronous optical network (an advanced fiber-optic transmission gear). This transmission gear is so fast that it will be able to transmit a 33-volume encyclopedia set in 4.6 seconds, compared with the 13 hours required using such technology last year. In order to create this high-speed network, BellSouth is investing $69 million, Sprint is investing $60 million and GTE is investing $30 million.\textsuperscript{46}

H. **MCI AND BRITISH TELECOM**

The interest in becoming a dominant player on the information superhighway is not limited merely to United States-based corporations. British Telecommunications P.L.C. recently received the Justice Department's approval to purchase 20\% of MCI Communications Corporation, the second-largest United States long-distance telephone company, for $4.3 billion.\textsuperscript{47}

I. **SPRINT, FRANCE TELECOM, AND DEUTCHE TELEKOM**

France Telecom and Deutche Telekom have agreed to purchase a 20\% stake in Sprint in an attempt to improve their global market share.\textsuperscript{48} The deal is not expected to be finalized until next year, largely due to the strict regulatory rules of both Germany and France.

J. **SPRINT AND EDS**

Sprint is currently negotiating with General Motor's Electronic Data Systems Corporation ("EDS") computer services to form a business alliance, or possibly to merge.\textsuperscript{49} An outright merger would create an "information services powerhouse" with over $19 billion in revenue and $20

\textsuperscript{45} Id. at B1.
\textsuperscript{48} Id.
billion in assets. Industry analysts claim that the merger would be mostly one of convenience, allowing EDS to buy its communications services at wholesale, and allowing Sprint access to EDS's priceless corporate customers. However, most people recognize that the merger would capitalize on a broader market area with the increasing movement towards the combination of computer and communication companies.

K. LDDS COMMUNICATIONS AND WILTEL

LDDS Communications has agreed to purchase the WilTel long-distance unit of Williams Cos. for $2.5 billion. The acquisition of WilTel gives LDDS an 11,000-mile fiber-optic-cable network, allowing it to lower its access costs attributed to leasing lines from other communication companies. This transaction strengthens LDDS's position as the fourth-largest long-distance communications company and enhances its ability to compete against AT&T, MCI, and Sprint for large customers.

IV. THE RULES OF THE ROAD - GOVERNMENTAL REGULATORY IMPACT

A. THE SPEED LIMIT: THE CURRENT REGULATORY INFLUENCE

Despite the recent aggressive convergence of the telephone, cable, cellular, and entertainment markets, the regulatory system remains firmly rooted in the past with regulations governing a multitude of separate and distinct businesses. "Most of these laws and regulations are based on public-policy concerns with respect to the privacy and/or accuracy of information maintained by the government, or the private sector."

1. Consumer Credit Information

The Fair Credit Reporting Act ("FCRA") regulates the dissemination of consumer credit reports by consumer reporting agencies and is the most far-reaching of the federal privacy laws. Both consumer reporting agencies and users of consumer reports are subject to civil liability for willful noncompliance with the FCRA. This includes liability for actual damages sustained by the consumer, punitive damages, and the cost of

50. Id.
52. Emory Thomas Jr. & Caleb Solomon, LDDS to Buy WilTel Unit from Williams, WALL ST. J., Aug. 23, 1994, at A3.
53. Id.
such action together with reasonable attorney's fees. In the event of neg-
ligent noncompliance, the consumer may recover actual damages plus
costs and reasonable attorneys' fees. The statute of limitations for bring-
ing an action is two years from the date the liability arises. Unauthorized
disclosures of consumer reports by consumer reporting agencies are
subject to criminal penalties, including a fine of up to $5,000 and impris-
onment of up to one year, or both.

2. **Cable Television Information**

Cable television operators must provide the subscriber with the op-
portunity to limit disclosure of “his or her” name and address for mail
solicitation purposes. In addition, cable operators are not allowed to re-
lease subscriber information relating to viewing choices, retail transac-
tions, or other personally identifiable information without the
permission of the subscriber.

3. **Financial Records Information**

The Right to Financial Privacy Act restricts the right of the federal
government to obtain financial records from financial institutions. The
government must provide a formal written statement that includes the
nature of the records and the purposes of the disclosure. A copy of the
request is to be sent to the financial institution's customer, who has the
right to challenge access by the government. There are exceptions which
permit a financial institution to provide specific information when it sus-
pects that a law or regulation has been violated. The information which
can be provided, though, is limited to the name of the person involved (or
identifying account information) and the nature of the suspected illegal
activity.

The Electronic Funds Transfer Act requires financial institutions op-
erating electronic banking services to notify customers of the circum-
stances under which account information will be disclosed to third
parties.

Many states have adopted legislation that restricts disclosure of fi-
nancial records to state agencies and officials or to the private sector.
Most state legislation treating banking records as confidential requires
consent of the account holder or a subpoena before the records can be
released.

4. **Criminal Justice Information**

Many states restrict the dissemination of criminal justice informa-
tion and provide access rights by an individual to his or her files. At the
federal level, the Justice Department has promulgated regulations to as-
sure the privacy and confidentiality of information in federally funded
criminal justice information systems.

The Privacy Act of 1974 covers information about an individual
maintained by a federal agency. This Act defines such information to
include financial transactions, medical histories, and employment histo-
ries. The Act limits disclosure of such information outside the govern-
ment without the individual's consent.

5. Medical Information

Many states prohibit the disclosure of a patient’s medical informa-
tion to third parties without the consent of the patient. For example,
Colorado has criminalized the act of knowingly obtaining medical infor-
mation without authorization with the intent to appropriate it for one’s
own use or for the use of another.

6. Public Records Information

Many state statutes incorporate public policy concerns that govern-
ment-maintained information should only be used in a manner consist-
tent with the purpose for which it is maintained and/or that individual
privacy should be preserved. Other statutes restrict computer access or
use of public records data.

7. AT&T Consent Decree

If it is not modified by legislation now before Congress, the consent
decree causing the divestiture of AT&T will have a significant impact on
the ability of the regional Bell companies to compete on the information
superhighway. Specifically, the consent decree prohibits the baby
Bells from engaging in certain telecommunication businesses - most no-
tably the provision of information services and the manufacturing of tele-
communications equipment. If passed, a bill now before Congress
would allow the baby Bells into these businesses if they first obtained
approval from the Federal Communications Commission and the Justice
Department. In addition, Congress is considering legislation that would
“give cable and local telephone companies greater freedom to compete in

55. H.R. 3636, The National Communications Competition and Information Infrastruc-
ture Act of 1993 and H.R. 3626, The Antitrust Reform Act of 1993 and the Communications
Reform Act of 1993: Hearings on H.R. 3636 and H.R. 3626 Before the Subcomm. on Tele-
communications and Finance of the House of Representatives Comm. on Energy and Com-
merce, 103d Cong., 2d Sess. (1994) (statement of Reed E. Hunt, Chairman, F.C.C.). Both of
these Bills are summarized in Appendix B.

prohibited the baby Bells from providing interLATA interchange services but the court sub-
sequently revised the decree to eliminate this information services restriction.
each other's businesses.\textsuperscript{57} It is unclear whether either of these bills will be passed.\textsuperscript{58}

The consent decree has made it difficult for AT&T to expand into new lines of business. AT&T's proposed buyout of McCaw cellular was originally blocked because Federal District Judge Harold H. Greene, who oversaw the AT&T breakup and continues to enforce the consent decree, ruled that the buyout would be a technical violation of the decree.\textsuperscript{59} The consent decree bars AT&T from acquiring any of the assets of the former Bell companies. Judge Greene ruled that the buyout would violate this decree because some of the baby Bells own portions of several of McCaw's cellular networks. However, the Justice Department recently gave its permission for the acquisition after AT&T agreed not to unfairly favor McCaw in equipment sales, not to tip McCaw to the purchasing plans of cellular rivals, and to let long-distance rivals have equal access to McCaw customers.\textsuperscript{60}

8. Rate Regulation

Telephone and cable television operators are subject to rate regulation by the Federal Communications Commission. This necessarily restricts the pricing alternatives available for new services created by the recent mergers, acquisitions, and business combinations between information service providers. Regulations also have been blamed for derailing some of the biggest proposed combinations. As mentioned earlier, when the FCC announced a cable rate cut, the news brought an end to the Bell Atlantic/TCI combination. The uncertainty caused by rate regulation also was blamed for ending a proposed $4.9 billion partnership between Southwestern Bell and Cox Cable Communications. Jim Kahan, a vice-president of Southwestern Bell stated, "We are convinced that the new regulatory environment... significantly hinders the ability of the partnership as initially structured to meet its growth and financial objectives."\textsuperscript{61}

\textsuperscript{57} Daniel Pearl, Administration Defers Its Phone, Cable Proposal, WALL St. J., Jan. 26, 1994, at A3.

\textsuperscript{58} The Clinton administration has indicated that it wants "a more sweeping prohibition against telephone companies buying cable systems in their service areas." Id. Also, the White House is "seeking stronger provisions to ensure that telephone companies give competitors access to the local phone network." Id. The White House does, however, agree with the proposal that the telephone companies be permitted to provide video services. Id. at A6.

\textsuperscript{59} Judge: AT&T, Cellular Firm Deal Violates Decree, Chi. TRIB., Apr. 6, 1994, § 3, at 1.

\textsuperscript{60} Cauley, supra note 32, at B7.

\textsuperscript{61} Baby Bell's Deal With Cox Is Off, Chi. TRIB., Apr. 6, 1991, § 3, at 3.
B. A New Police Force?

Because the information superhighway is high on the priority list for Vice President Gore, it is probably not surprising that the White House has taken a great interest in working with both Houses of Congress in determining the rules of the road for the companies vying to build on the information superhighway. Central to Congress' and the White House's direction is the Information Infrastructure Task Force ("IITF"), chaired by Secretary of Commerce Ronald H. Brown. The IITF includes high-level representatives of many of the federal agencies that are responsible for the development and application of information and telecommunications technologies.

The IITF, with members from a cross-section of more than 20 government agencies, consists of three committees. The Information Policy Committee, chaired by Sally Katzen, Administrator of the Office of Information and Regulatory Affairs, is responsible for identifying and suggesting information policy to fully deploy and utilize the NII. The Telecommunication Policy Committee, chaired by Larry Irving, Assistant Secretary of Commerce for Communications and Information, develops the Administration's position on key telecommunications issues. The Committee on Applications and Technology, chaired by Arati Prabhakar, Director of the National Institute of Standards and Technology, coordinates the Administration's efforts to develop the NII and recommends strategies and policies to accelerate its implementation.

Each of the IITF's committees is comprised of various working groups which are responsible for examining issues such as universal service, intellectual property rights, privacy, and government information. The IITF working groups include members from the Office of the Vice President, the Office of Management and Budget, the Patent and Trademark Office, the Office of Privacy, the Office of Telecommunications Management, the Advanced Research Projects Agency, the Defense Information Systems Agency, the Department of Justice, the National Library of Medicine, the Department of Transportation, the National Security Council, and the Department of the Treasury.62

Aiding Congress and the White House are at least a dozen government agencies whose directive at least in part is to encourage the development of the NII. These agencies include: the Executive Branch - Office of Science and Technology (advises the President on technical issues); the National Economic Council (advises the President on budget issues); the National Science and Technology Counsel (advises the President on budget issues); the Committee of Advisors on Science and Technology (private-sector group that advises the President on industry

views); the National Infrastructure Task Force (more than 20 agencies focusing on NII policy issues); the Commerce Department - National Telecommunications and Information Administration (advises the White House on telecommunications policy); the National Institute of Standards and Technology (sets standards); the National Technical Information Services (runs the government's Fedworld electronic information service); the Department of Energy (involved in the development of the Internet and the National Research and Education Network); the Department of Defense (provides research and development seed money, mostly to the private sector, and is implementing an electronic procurement pilot project); Congress (shapes policy through legislation); and the Independent Agencies - National Security Agency (handles national security issues for the NII), National Science Foundation (provides NSFnet, the Internet backbone, and provides research and development seed money), and Federal Communications Commission (implements telecommunications policy).63 All these agencies are attempting to shape policies, change regulations, guide and encourage standards, and seed development - especially in the areas that may be overlooked by the private sector. The work of these agencies in some instances extends internationally as well. For example, the Department of Commerce is talking with Japan and other countries about making the NII a global entity.64

Already, the impact of these agencies is being felt. Currently, an extensive amount of legislation is being introduced at the federal level concerning issues of importance to the construction and use of the information superhighway. Additional legislation is under consideration in many states. Appendix B summarizes some of the legislation currently in process at the federal level.

C. THE POLICE: UNABLE TO CATCH THE SPEEDERS?

Just as a Yugo would not be the right vehicle for the police to use in attempting to pull over a Corvette speeding on the interstate, the government is not well equipped to develop the rules of the road for the information highway. One law professor and former FCC employee put it this way: “The future is coming and the government will be overtaken by it.”65

Two primary factors explain the government’s inability to effectively set the rules of the road. These factors are: (i) the speed of the evolving technology as compared to the speed at which the government is able to

63. Id.
64. Id.
65. Jones, supra note 7, at 3.
operate; and (ii) the financial advantage of private industry as compared to the financial constraints of the government.

1. **Speed of the Evolving Technology**

   While the technology used to develop the information superhighway is developing at an astronomical rate, the government is moving very slowly. Perhaps this is not surprising. The time-line for the passage of legislation, which must be proposed, drafted, and passed into law, simply cannot be expected to effectively control an industry where major technological improvements occur every few months. The Washington-based Council on Competitiveness used this analogy:

   The good news is the information superhighway that the Clinton administration likes to talk about with such passion is being built faster than anyone thought possible. The bad news... is that America's regulatory framework remains rooted in the past, reflecting a time when the information superhighway was still little more than a dirt road.\(^6\)

   In the patent arena, the Patent and Trademark Office (PTO) has had great difficulty handling the increase in applications for software patents. The PTO currently has over 3,000 applications for software patents waiting to be processed.\(^6\)\(^7\) Even though the PTO is implementing new procedures in an attempt to alleviate the backlog, at the present time it does not employ any software specialists as examiners.\(^6\)\(^8\)

2. **Financial Constraints**

   Even if the government could keep pace with the technology, it would not and could not spend the amount of money necessary to regulate private industry effectively. For example, government wages historically have not been competitive enough to recruit the kind of highly trained and motivated individuals necessary to effectively regulate the dynamic developments now occurring.

V. CONTROLLING THE TOLLGATES - MAKING MONEY ON THE HIGHWAY

A. **Demand/Cultural Shifts**

   Even if the new technology developed is in line with whatever rules and regulations exist at the time of implementation, a largely unanswered question is, to what extent is the market ready to accept new technological developments? In order for this acceptance to occur, a tre-

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\(^6\) Yates, supra note 25, at 1.


\(^8\) G. Pascal Zachary, *Patent Commissioner Outlines Steps to Avoid Disputes Over Software*, Wall St. J., Apr. 11, 1994, at B6. Seven software specialists are expected to become patent examiners this year. *Id.*
mendous cultural shift must take place in the way businesses and individuals operate on a day-to-day basis.

Although there are many examples of these cultural shifts, there are also many cases where they have not occurred. Two examples of successful cultural shifts as a result of new technology are automated teller machines and voice mail systems. The popularization of these machines required a cultural shift whereby the users accepted interaction with a machine rather than a person. Computerized grocery services, which require a cultural shift of consumers accepting others selecting their groceries, are also gaining popularity.69

On the other hand, the inability of the marketplace to undergo the cultural shifts necessary to make other potential components of the information highway successful has also been well documented. For example, " Efforts to market videophones combining TV with telephone conversations have flopped several times in the past two decades. Various pay-per-view offerings and an early interactive TV effort launched 16 years ago by Time Warner, called QUBE, have either met with only modest success or spectacular failure."70

More recently, an analyst specializing in electronic services pointed out that although slightly more than 50% of people who buy a computer with a modem eventually connect with an on-line private network service (e.g., Prodigy, CompuServe, etc.), a majority of them cancel their subscription when they get their first bill.71 Even more surprising, "only 10 to 20 percent of the people who get on-line for the first time stay for the long haul."72

Although we are now experiencing significant cultural shifts, it is unclear how far they will continue. One columnist summed it up this way:

Despite enthusiastic talk about information superhighways and interactive multimedia from industry executives and politicians, no one has a clear view of what those terms may mean for potential products and market demand. Without doubt, more technology to deliver entertainment and information to Americans is on the horizon than anyone could ever need, want or use.73

B. Price

Economists believe that demand varies inversely with price.74

69. In the Chicago metropolitan area a grocery delivery service called Peapod has been extraordinarily successful.
70. Van, supra note 9, at 1.
71. Coates, supra note 18, at 1.
72. Id. at 6.
73. Van, supra note 9, at 1.
74. MILTON H. SPENCER, CONTEMPORARY ECONOMICS 353 (3d ed. 1977).
Translated to the information superhighway, this means that the lower the prices of goods and services on the electronic superhighway, the more such goods and services will be used. This leads to the question of how technology used on the information superhighway will be priced. Economist also believe that the price of technology is a result of balancing the expectation of profit against the risk of loss. One of the most significant challenges for builders on the information superhighway is to ascertain the primary factors in determining the variables in this balancing equation. Some of the factors that these builders may consider include the following:

1. **Quality of the Product**

   Technology that has been used by a number of customers is usually more valuable than technology that is being tested for the first time. Similarly, technology with proven reliability and availability and adequacy of support services should be priced higher than technology without these qualities. The ability of the user to have immediate and free access to new enhancements is also a significant factor. Technology with a long life cycle should also be priced higher than technology with a short life cycle.

2. **Market Conditions**

   The size of the market and the potential market share have always been significant factors in determining price. Often, small markets do not support the cost of creating the technology. For example, many businesses have scrapped plans to develop technology in certain countries due to the high costs of translation of the code as compared with the expected market. The distinctiveness of the product and of the market niche is also influential. That is, if there is little or no competition, the producer has more flexibility in setting price. For example, when it was first created, Visi-Calc owned the spreadsheet market because it was the only available product of its type (its competition was a pad of paper). The extent of available substitutes (i.e., the availability of competitive products) is a related and significant factor. If the technology is similar to other technology available in the market and the going market rate is a certain price, it will be difficult for others entering this market to charge a higher price. Other market conditions that have a significant impact on the determination of the price include: (i) demand for the tech-

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75. For a good discussion of these and other factors, see Arnold, White & Durkee, 100 Factors Involved in Pricing the Technology or Software License, (Sept. 21, 1989) (manuscript from the 3rd Annual Computer & Information Technology Law Institute, University of Texas School of Law) (on file with authors).

76. Id. at 6.
nology; (ii) value of the technology to the user (i.e., technology that gives the user significant cost savings or significantly greater profits is worth more than technology that does not produce these results); (iii) ease of access to the technology; and (iv) general economic conditions.

3. Financial Considerations

In order to stay in business all companies must realize an appropriate rate of return on capital. The requirements for this rate of return vary tremendously not only from industry to industry but also from company to company and from country to country. There are, however, certain constants.

First, an entrant into a particular market must determine the cost to develop, maintain, upgrade, and sell its product. This cost includes variables such as employment costs (which in a service industry can be a significant portion of the bottom line), cost of sales, administrative costs, and overhead costs. Administrative costs include the costs of insuring against risk, legal fees, legally-related protection (i.e., the strength of the intellectual property protection), and administrative functions necessary to operate, such as the operation of the human resources and accounting departments. In addition, the revenue from related services, if billed separately, must be considered. It is common for businesses to price the license for technology lower due to an expectation that the majority of profits will result from the sale of future support-related services. In the long run, related-services sales are expected to be where the major profits are made on the information superhighway. For example, in a recent Business Week article, the Media Business Segment Managing Director for Digital Equipment Corporation estimated that for every dollar of video-server sales on the electronic highway, there could be seven dollars in related service sales.77

After determining expected costs, the entrant must then subtract these costs from the expected revenues from the sale or licensing of the technology. In order to determine expected profits, the entrant must consider such factors as the expected volume of sales and the payment terms. Payment terms can take on a surprising level of importance depending on interest, inflation rates, and internal revenue requirements. It is relatively common for technology companies to accept significantly less money if the money is given up-front rather than later in the development cycle (often to an extent greater than justified merely by the time value of money). For technology that will be used on an international electronic highway, the type of currency and the ability to send local currency outside of the country may also be factors.

Note that the user's interest in licensing a product is not necessarily related to the financial considerations of the company creating it. Instead, these financial considerations are more likely to determine whether the company creating a piece of technology will succeed.

Once price is determined, it can be expressed in a number of ways. Common ways to price on the information superhighway will likely mimic pricing for licensing rights to software, such as pricing by: (i) access; (ii) site; (iii) time; (iv) term; (v) key strokes or transactions; (vi) machine; and (vii) entity. Common sense might suggest that the mechanism for pricing be consistent within each industry. This has not necessarily been the case, though, particularly in the development of new technology where the typical determining events for analyzing price are uncertain. For example, when Prodigy first entered the market it was priced at a set fee per subscriber per month. It quickly became apparent however, that a change was required. As a result, Prodigy switched its pricing formula to one based on actual usage.\[78\]

VI. AVOIDING THE POTHOLES

A. COPYRIGHT AND OTHER INTELLECTUAL PROPERTY LAWS

The technology lawyer should expect changes in copyright and other intellectual property laws as the current law is molded to fit new technology. At the same time, the technology lawyer should continue to expect that on many legal issues relating to the information superhighway there is no law and there will be no law for quite some time.

Some of the intellectual property standards that will evolve at least in part due to the development of the information superhighway include:

1. Protection of Database as Compilations

As the information superhighway is built, the most valuable databases will continue to be the ones that contain the largest amount of information. For example, the telephone book is valuable because it contains access to all (not some) telephone numbers in a particular location. However, by providing all telephone numbers, the courts have determined that the database compiler does not meet the standard required for copyright protection because the "selection, coordination and ar-

\[78\] By way of comparison, the pricing for private networks is as follows: Prodigy - $7.95 for two hours a month, plus $3.60 for each additional hour, and 25 cents for each e-mail message; or $14.95 for five hours per month, plus $3.60 for each extra hour, first 30 e-mail messages free; CompuServe - $8.95 per month for basic services; $39.95 registration fee, $4.80 per hour for extended services and prime time at 2400 baud and $9.60 at 9600 baud; America Online - $9.95 per month for five hours, plus $3.50 for each additional hour. Coates, supra note 18, at 1.
rangement” of the telephone numbers is not “sufficiently original to merit protection.” Consequently, many believe that under current law, the more comprehensive the database, the less available the copyright protection. This result is disturbing. From a public policy perspective it would be advantageous to reward the creation of those databases with the largest amount of information (i.e., the least selectivity). One solution suggested by legal commentators is for compilers to use “creative techniques in the presentation of their material.” One commentator explains:

The technology presently used in virtually all on-line textual material limits the presentation to simple text formats generating the all-too-familiar awkward pages lacking graphics and ease of use. The advent of new technologies that promise the electronic delivery of text and graphics in visually attractive formats is likely to open new ground for competition, based on particularly imaginative or useful organizational and presentation techniques. Since these formats may be protectable under copyright or trademark principles (or both), their use may provide not only an advantage in the marketplace, but also a basis for legal protection.

Another solution would be to petition Congress to create a “distinct copyright status for databases.” Yet another solution may be for database compilers to use contractual protection in protecting their material. Whatever solution (or combination of solutions) is found, we should expect copyright law to be challenged as database compilers attempt to discover new ways to secure protection and preserve revenue.

2. Extent of Protection of Digitized Music and Images

As the technology develops, it is becoming increasingly difficult to determine when a work is a copy or when it is a jointly developed work.

80. Id.
81. Greg Umberson, Protection of Online Databases in Europe and the U.S., (manuscript unpublished and not dated) (on file with authors).
82. Walter & Sussman, supra note 17, at 4. But note the potential for success with this solution was hindered by BellSouth Advertising & Publishing Corp. v. Donnelley Information Publishing, Inc. 999 F.2d 1436 (11th Cir. 1993), cert. denied, ___ U.S. ___, 114 S.Ct. 943 (1994). In BellSouth, the Eleventh Circuit found that selection, coordination, and arrangement of BellSouth’s yellow page directory lacked the originality necessary to hold Donnelley liable for copyright infringement. Id. In particular the court determined that the alphabetical list of business types and the headings were not sufficient to afford protection. Id.
83. Walter & Sussman, supra note 17, at 4.
85. Id. at 127.
For example, if a user pulls a copyrighted photograph from a database and uses it in an advertisement for the user's services, this would be a violation of copyright law. It is less clear whether there is a copyright violation where, for example, instead of pulling the exact photograph, the user changes the colors in it and "touches up" the photograph by adding or deleting portions to the image. This issue is now before the Southern District of New York in a case involving digitized music.  

3. Distribution of Copyrighted Works

Once a valid copyright has been secured for a work, the owner is entitled to the exclusive right to reproduce the work, to prepare derivative works, to distribute copies, to perform the work publicly, and to display the work publicly. When an author publishes the work, he or she may sell the copyright to the publisher or merely grant it a license to copy and distribute the work. With an advanced network such as the information superhighway, the publisher could easily distribute the work to millions of users at the press of a button. With this option, authors and publishers will be faced with the question of whether their existing agreements cover distribution over a vast computer network. This scenario is being played out in a New York case involving several authors and publishers including Newsday, Time, the New York Times, and Mead Data Central's NEXIS computer research service. In that case, as often happens, the authors did not have a written agreement and did not specifically discuss on-line distribution with the publishers.

The White House has recently proposed new copyright laws to extend the current copyright act to cover text, audio, video, or databases that are transmitted electronically. Currently, copyrighted works are protected when they change hands only if they are on some form of physical medium, such as paper or disk. The White House expects the proposed law will be sent to the next session of Congress. Meanwhile, a task force assigned to study the proposal will hold hearings early this Fall, with a final report due by the end of the year.

4. Protection of Names and Corporate Identities

Just as people prefer readily remembered telephone numbers, they will also likely prefer readily remembered addresses linking them to the

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90. Id.
91. Id.
92. Id.
information superhighway. Some of the addresses created will probably
spark litigation about the likelihood of confusion.

5. **Patent Protection**

As a result of some of the recent decisions in copyright law, many
software developers and their lawyers are turning to patent law for pro-
tection. Mr. Paul Goldstein, an intellectual property law professor at
Stanford, explains:

> As copyright’s balance has been restored in the sweep of decisions . . . it
> is probably becoming increasingly clear that it is not satisfactory for
> protecting methods and processes - the things that underlie software
> and make it efficient. That explains the renewed interest in patent law,
> [which is] better aimed at protecting this innovation.\(^93\)

One developer that turned to patent law was Compton’s New Media.
In August, 1993, Compton’s received a patent for software multimedia
search and retrieval. Compton’s asserts that its patent covers “not only
products copying Compton’s product, but any product using similar
search-and-storage methods, including other compact disc-read only
memory products and even interactive television.”\(^94\) Shortly after the
patent was granted, many expressed the fear that it would allow
Compton’s “to go after almost every multimedia venture, charging in-
fringement and using the threat of litigation to extract huge royalties.”\(^95\)
At a trade show, Compton’s announced that it intends to ask for a one
percent royalty on infringing titles.\(^96\) In late 1993, the PTO announced
that it would reexamine Compton’s patent to determine whether the in-
vention was new and non-obvious. Bruce A. Lehman, the assistant sec-
retary of Commerce and Commissioner of Patents and Trademarks,
explained that the PTO was reexamining the patent because of the
strong reaction from the industry.\(^97\) After its initial reexamination, the
PTO indicated that it will overturn the patent.\(^98\) However, a final deci-
sion will not be made until Compton’s successor, Tribune Co., has had an
opportunity to appeal the recommendation.

Patent law will also dictate some other important elements for the
success of the information superhighway. For example, a jury recently

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\(^95\) Slind-Flor, *supra* note 93, at S1.


\(^97\) Slind-Flor, *supra* note 93, at S27.

decided that Microsoft's DOS 6.0 and 6.2 computer operating systems infringed on certain data compression patents of Stac Electronics. The issue in the case was whether Stac Electronic's patents covered the technology by which digitized data is compressed so that it can be efficiently transmitted. This decision could affect the players in the market for compression technology on the information superhighway.

B. A NEW COMMUNITY STANDARD?

Liability in some areas of the law, such as obscenity and medical malpractice, is based in part on whether actions are appropriate given the community in which they were performed. As the number and scope of uses of the electronic highway increases, our traditional notions of what constitutes a "community" will be challenged. This issue recently got nationwide publicity when a California couple was convicted for sending over a computer bulletin board materials found to be obscene when viewed in Memphis.

C. PERSONAL JURISDICTION

Traditionally, courts have recognized that a defendant may only be required to defend an action in a location where that defendant has certain minimum contacts. The advent of the electronic superhighway creates the issue of whether using a computer to transmit information to a computer in another state subjects the transmitter to the jurisdiction of the state where the information is received. Although it seems clear that the minimal requirements are not met by a simple transition of information via cyberspace to another state, the answer becomes less clear when the number of transactions or the associated activity increases. In a recent decision, a court held that the actions of a shareware developer calling CompuServe and leaving a program on the network was insufficient to subject the share-ware developer to the jurisdiction of the state where CompuServe was located even though the CompuServe user agreement states it is "made and performed in Ohio," and that the shareware developer's software resides in "the computer system in Columbus, Ohio."

100. Pornography Conviction Alarms Users of Internet, Cm. Trub., July 31, 1994, § 1, at 11.
D. Confidentiality/Privacy

1. Protection of Privacy and Confidentiality

By definition, when technology becomes part of the information superhighway, the ability to access and transmit this technology to users is dramatically increased. At the same time, the greater the ability to access and transmit information, the greater the risk of improper access, use, and disclosure.\(^{102}\)

As mentioned earlier, a patchwork of laws exists to protect the privacy of certain information. Unfortunately, these laws lack uniformity and consistency and are not comprehensive in the treatment of confidentiality and the protection of privacy. Moreover, the legislation now under consideration does not appear to change this inconsistency, and in fact may add to it.\(^{103}\)

2. Potential Liability

In addition to the liability for breach of privacy laws described earlier in this article, there are several other common theories under which liability may be imposed.

a) Invasion of Privacy

Liability for the tortious invasion of privacy consists of four specific causes of action: (i) disclosure of private or embarrassing facts; (ii) appropriation of a person's likeness; (iii) invasion of a person's solitude; and (iv) placing a person in a false light in a public eye.\(^{104}\) Moreover, if disclosure of confidential information occurs with a reckless or willful breach of confidential information, punitive damages may also be awarded.

b) Defamation

Even inadvertent disclosure of a false statement may result in a successful suit for defamation. Generally, the elements required to prove a cause of action for defamation are: (i) defamatory language (i.e., language that tends to adversely affect another's reputation); (ii) language

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103. Compare H.R. 135, 103d Cong., 1st Sess. (1993) (establishing Privacy Protection Commission to study electronic systems which store and retrieve personal data, and to propose legislation to protect personal privacy affected by the dissemination of this data) with H.R. 3432, 103d Cong., 1st Sess. (1993) (restricting use of telephone caller identification services, but allowing certain uses such as marketing).
104. Pechette & McKenzie, supra note 102, at 3. Unless otherwise indicated, the remainder of this section is based extensively on this article.
about or concerning the plaintiff (i.e., it must reasonably identify the defamed person); (iii) publication of the defamatory language (i.e., communication to a third person who understood it); and (iv) damage to the defamed parties' reputation. In addition, if the defamation refers to a public figure or involves a matter of public concern, two additional elements must be proved; (v) the defamatory language must be shown to have been false; and (vi) malice must be shown (i.e., knowledge that the statement was false or a reckless disregard as to its truth or falsity).

c) Negligence

Liability may also exist for negligent acts. In order to find a party guilty of negligence, the court must find: (i) a duty to use reasonable care existed; (ii) a failure to conform to this required duty; (iii) a reasonably close casual connection between the conduct and the resulting injury; and (iv) actual loss or damage.

d) Malpractice

Depending on the type of disclosure and the party responsible for the disclosure, a cause of action also may be had for malpractice. For example, if a patient's medical record becomes available on a network and, as a result of disclosure of sensitive information over the network, the patient's condition worsens, a basis for a malpractice claim may exist.

3. Evidentiary Issues

Although courts and juries naturally will be less familiar with records produced in electronic form than in paper form, there has been an increasing acceptance of evidence submitted in electronic form. Under the best evidence rule, an original document must be offered at trial unless an exception allows a copy to be introduced. Under the Federal Rules of Evidence, if data is stored in a computer system or similar device, "any printout or other output readable by sight, shown to reflect the date accurately, is an original."105

4. Risk Management; Retention Policies

Many of the risks of information being transmitted over the electronic highway also are present with the traditional paper record, such as: (a) destruction; (b) tampering; (c) data falsification; and (d) unauthorized access and disclosure. But information transferred over the electronic highway may be dramatically more vulnerable to these risks because the access to these records is more widespread. On the other hand, information transmitted over the electronic highway may be

105. Fed. R. Evid. 1001(3).
viewed as actually safer in some ways than paper records. Although there is no sure way to completely eliminate risk, there are certain actions that, if taken consistently, can prove helpful in defending claims arising from or involving the disclosure of information on the electronic highway. These actions include: a) access restrictions; b) education and training; c) security monitoring; d) disaster recovery procedures; e) contractual protection; f) insurance protection; and g) record retention policies.

VII. CONCLUSION

The entrants who own or control data will likely be the winners in this emerging market. As for the many issues unique to transactions over the information superhighway, it is probably too early to predict the solutions. One should note, however, that no matter how developed and regulated the information superhighway might become, its very existence will require technology lawyers and their clients to operate in the fast lane.

106. Note that security monitoring helped spot a large computer security breach on the Internet which occurred in February. For further information see, Jared Sandberg, Security Breach at the Internet Raises Worries, WALL ST. J., Feb. 7, 1994, at B5.

APPENDIX A: SUMMARY OF NII AGENDA FOR ACTION
ADMINISTRATION AGENDA FOR ACTION

I. BASIC GOALS OF THE NII

The NII has an expansive definition which includes all of the physical facilities to store, process, and transmit data, as well as any other electronic equipment that can utilize the data. The basic goals of the NII include:

A. Education: Make educational resources available without regard to geography.
B. Arts: Make resources of big-city museums and libraries available without regard to geography.
C. Healthcare and Social Welfare: Improve health care system.
D. Employment: Allow people to telecommute.
E. Commerce: Give small manufacturers access to global commerce.
F. Entertainment: Create home access to video and shopping.
G. Government Reform: Obtain government information directly; obtain government benefits electronically.

II. NEED FOR GOVERNMENT ACTION TO COMPLEMENT PRIVATE SECTOR LEADERSHIP

Government must support private sector activities. The private sector already spends $50 billion annually on telecommunications infrastructure improvements. The Administration proposes nine guiding principles, which relate to:

A. Reforming the tax and regulatory structure;
B. Providing universal service;
C. Increasing government research and development grants;
D. Creating standards to ensure that data can be transferred across networks;
E. Ensuring data security and reliability;
F. Reforming radio frequency management;
G. Protecting intellectual property rights;
H. Avoiding unnecessary obstacles and preventing unfair policies; and
I. Providing access to government information and improving government procurement.

III. MANAGING CHANGE / FORGING PARTNERSHIPS

An interagency Information Infrastructure Task Force ("IITF") chaired by Commerce Secretary Ron Brown is established.
A. **PURPOSES**

Work with Congress and the private sector to propose policies and initiatives to accelerate development of the NII.

Establish private sector Advisory Council on the National Information Infrastructure to advise IITF on matters relating to development of NII.

Streamline the Federal Communications Commission and create information policy-making guidelines (NTIA, Office of Information and Regulatory Affairs at OMB, and the FCC).

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**IV. PRINCIPLES AND GOALS FOR GOVERNMENT ACTION**

A. **PROMOTE PRIVATE SECTOR INVESTMENT**

Expand competition in communications and information markets and promote private sector infrastructure investment in cable and telephone industries by passing Communications Reform Legislation by the end of 1994.

B. **EXTEND UNIVERSAL SERVICE CONCEPT**

Provide universal service to advanced communications and information services, regardless of income, disability, or location.

C. **PROMOTE TECHNOLOGICAL INNOVATIONS AND NEW APPLICATIONS**

Continue High Performance Computing Communications Program that was established by High Performance Computing Act of 1991. Fund research and development designed to create more powerful computers, faster networks, and more efficient software.

Administration has requested $96 million for fiscal year 1994 to create Information Infrastructure Technologies and Applications, to create high-speed networking technology and high performance computing.

Provide matching grants to state and local governments, health care providers, school districts, and libraries. Funding will occur after competitive merit review.

D. **PROMOTE SEAMLESS, INTERACTIVE, USER-DRIVEN OPERATION**

Use Commerce Department's National Institute for Standards and Technology to review government involvement in network requirements and standards.

Reform government regulations that impede development of interactive services.

E. **ENSURE INFORMATION SECURITY AND NETWORK RELIABILITY**

Ensure that data will go where it is intended to go; if properly designed, advanced communications can provide more security than less advanced systems.

Ensure individual privacy, while recognizing societal and law enforcement needs for information.

Use federal agencies to develop encryption hardware and software.
Use National Security Telecommunications Advisory Committee to coordinate with NII Advisory Council.

F. IMPROVE MANAGEMENT OF RADIO FREQUENCY SPECTRUM
Implement spectrum management provisions of the Omnibus Budget and Reconciliation Act of 1993 to promote market principles in spectrum distribution.

G. PROTECT INTELLECTUAL PROPERTY RIGHTS
Study how current copyright laws and traditional fair use concepts will apply to new media and new works.
Develop standards for identifying and reimbursing copyright owners of information products on electronic systems.

H. COORDINATE WITH OTHER LEVELS OF GOVERNMENT
Resolve policy issues with state and local government.
Open overseas markets by implementing new export control policies for computers and telecommunications equipment.
Eliminate barriers caused by incompatible standards and standardize measurement techniques.
Examine international and U.S. Trade Regulations.

I. PROVIDE ACCESS TO GOVERNMENT INFORMATION
Develop virtual card catalogue of what government information is available.
Upgrade infrastructure for delivery of government information.
Increase electronic dissemination of government information.
Ensure that government recoups only the actual cost of distributing information and not cost of creating or collecting the information.
Make governmental leading-edge technology adopter.

V. BENEFITS

A. ECONOMIC
Computer Systems Policy Project estimates NII will generate $300 billion in new sales annually.

B. HEALTH CARE
Reduce administrative costs by providing electronic insurance filing.
Estimate $36 - $100 billion savings each year.
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I. H.R. 135 - INDIVIDUAL PRIVACY PROTECTION ACT OF 1993

A. INDIVIDUAL PRIVACY PROTECTION BOARD

1. Technological advances have expanded the collection of personal data and enhanced the ability to retrieve and disseminate this data. For this reason a privacy protection board is created to investigate privacy concerns.
2. The Board is composed of five members, appointed by the President with the advice and consent of the Senate, who will hold office for four years.

B. DUTIES OF THE PRIVACY PROTECTION BOARD

1. Study information systems to determine standards and procedures in force for the protection of personal information.
2. Develop guidelines, requirements and publications on 5 U.S.C. § 552a, which relates to records maintained on individuals.
3. Conduct research and studies on how personal data is used and what restrictions should be placed on this use.

C. POWERS OF BOARD

1. The Board may: (a) conduct hearings and issues subpoenas; (b) prepare model legislation; and (c) request assistance from any agencies of a federal, state, or local government.

II. H.R. 1504 - COMMUNICATIONS COMPETITIVENESS AND INFRASTRUCTURE MODERNIZATION ACT OF 1993

A. VIDEOPROGRAMMING SERVICES

1. Common carriers may provide videoprogramming services to their subscribers, but only through a separate programming affiliate.
2. Business transactions between carriers and affiliates are subject to FCC regulation.

B. VIDEO DIAL TONES

1. All common carriers who provide videoprogramming must establish a basic video dial tone platform.

C. PROHIBITION ON CROSS-SUBSIDIZATION

1. Common carriers must not include in telephone exchange rates any expenses associated with videoprogramming.

D. PROHIBITION ON BUYOUTS

1. Common carriers may not buy out cable systems in their telephone service area.

2. Exceptions are provided to allow common carriers to: (a) obtain a non-controlling interest in a cable system in its service area; and (b) to acquire use of transmission facilities if the use is reasonably limited in scope and duration.

E. Waiver

1. The FCC may grant a waiver if: (a) cable facilities will be substantially upgraded; (b) cable system capacity and services will be expanded; (c) the purchase or acquisition of control will be in the public interest; and (d) the local franchising authority approves the waiver.

III. H.R. 1757 - HIGH PERFORMANCE COMPUTING AND HIGH SPEED NETWORKING APPLICATIONS ACT OF 1993

A. National Information Infrastructure Act of 1993

1. Requires the Federal Coordinating Council for Science, Engineering, and Technology to establish a plan to develop high-performance computing applications.
2. The plan will outline ways to (a) foster local network access; (b) develop projects in education, health care, libraries, and government information access; (c) provide funds for network services to connect to the Internet; and (d) ensure network privacy.
3. The National Research and Education Network Program is revised to define test-bed network characteristics and limit fund use to non-federal entities whenever feasible.

IV. H.R. 1900 - PRIVACY FOR CONSUMERS AND WORKERS ACT

A. Definitions

1. Electronic monitoring includes collection, storage, analysis, and reporting of electronic observations of an employee's activities.
2. Telephone call accounting includes recording telephone numbers called from a specific telephone for the purpose of evaluating employees, or setting production quotas or work performance expectations.

B. Notice Requirements

1. All employers who engage in electronic monitoring must post a general notice, prepared by the Secretary of Labor, specifying the circumstances for monitoring and employee rights under the Act.

2. Employers must give specific prior notice to employees specifying: (a) the form of monitoring; (b) what personal data will be collected; (c) the hours and days per week that monitoring will occur; (d) what use will be made of the data; (e) how the data will be interpreted; (f) what are existing production standards; and (g) the methods that will be used to determine standards based on the data collected.

3. Prospective employees must be notified at the first personal interview that on-the-job monitoring may take place; and written notice must be given to the prospective employee on request or at the time the job offer is made.

4. Customers and members of the public who may be included in electronic monitoring observations must be given notice of the monitoring that is to take place.

5. Exceptions to the notice requirement are provided if the employer suspects that the employee is violating criminal or civil law.

C. Periodic or Random Electronic Monitoring

1. Periodic and random monitoring is prohibited unless it follows the restrictions imposed by the Act. These restrictions allow monitoring to take place if: (a) the employee is new and has been employed less than sixty days; or (b) a work group is being monitored not more than two hours per week, and none of the employees have been employed more than five years.

D. Review of Continuous Electronic Monitoring

1. During monitoring, no employer may review data from continuous monitoring, unless the data: (a) are from an electronic card system; (b) are from video used to deter crime; or (c) appear on multiple television screens.

2. After monitoring is completed, review is limited to the specific data that the employer believes is relevant to the employee's work.

3. Employees must be allowed to review the data unless monitoring is being done on suspicion of a criminal or civil law violation.
E. LIMITATIONS ON COLLECTION AND USE OF DATA

1. Data collected by electronic monitoring may not be used as the sole basis for performance evaluation or production quotas, unless the employee is not working at the employer's facility and transmits data remotely, and that data is the only basis to evaluate the employee.

2. No employer may intentionally collect personal data on employees if the data are not confined to work; nor may the employer monitor in bathrooms, locker rooms, or dressing rooms unless the employer has a reasonable suspicion of violation of civil or criminal law.

3. An employer may not disclose personal data except to the employee and: (a) officers and other employees who have a legitimate need; (b) law enforcement agencies; or (c) pursuant to a court order.

4. If the employer has an immediate need and the employee is not available, the employer may access employee data if: (a) the data does not include aural or visual monitoring or interception of employee communications; (b) the data will not be used for discipline or evaluation; (c) the employer notifies the employee.

F. ENFORCEMENT AND WAIVER

1. Enforcement provisions include: (a) civil penalties; (b) actions by the Secretary of Labor; and (c) private civil actions which allow such legal or equitable relief as may be appropriate, including costs and fees to the prevailing party.

2. Rights may not be waived except pursuant to settlement of a pending action or complaint.

V. H.R. 2639 - TELECOMMUNICATIONS AND INFORMATION INFRASTRUCTURE AND PUBLIC BROADCASTING ASSISTANCE ACT OF 1993

A. INFORMATION INFRASTRUCTURE

1. Authorizes grants to assist development of the national telecommunications and information infrastructure to: (a) enhance delivery of social services; and (b) support the formation of a nationwide, multimedia, interactive infrastructure.

2. Creates a program to collect and disseminate information on distance learning and telemedicine.

3. Extends appropriation of funds for the National Telecommunications and Information Administration through the 1996 fiscal year.

VI. H.R. 3432 TELEPHONE CONSUMER PRIVACY PROTECTION ACT OF 1993

A. Title I - Privacy of Proprietary Network Information for Common Carriers

1. Customer proprietary network information includes: (a) information that is available to the telephone company by virtue of the telephone company/customer relationship; and (b) information contained in customer bills.

2. Unless required by law or requested by the customer, local exchange carriers may not use customer proprietary network information: (a) to provide any service other than telephone service or service necessary to provide telephone service; nor (b) in identification or solicitations of customers for any service other than service from which the information is derived.

3. Local exchange carriers: (a) must disclose information if the customer requests it; (b) must notify the FCC that aggregate information is available whenever the common carrier provides aggregate information to any personnel of the common carrier, or an affiliate of the common carrier; (c) may not discriminate between affiliated and unaffiliated service or equipment providers; and (d) must provide subscriber list information to any person upon a reasonable request.

B. Title II - Privacy of Calling Party Information

1. Callers will be able to withhold, on a per call basis, the display of the callers telephone number, name, and other personally identifying information. No additional charges may be assessed for this service.

2. Automatic number identification services must be provided under a contract which contains restrictions on the collection and use of data pursuant to the requirements of the Bill.

3. If a customer is established, information of past use can be utilized to provide products or services directly related to the product or service previously acquired by the customer.

4. Restrictions do not apply to calls within the same limited system, such as office systems; nor to emergency phone lines, nor legally authorized tracing or tapping.

VII. H.R. 3609 - TELECOMMUNICATIONS EQUIPMENT RESEARCH AND MANUFACTURING COMPETITION ACT OF 1993

A. REGULATION OF MANUFACTURING BY BELL TELEPHONE COMPANIES

1. Bell telephone companies may manufacture and provide telecommunications equipment through a separate affiliate which: (a) keeps separate books and records; and (b) prepares separate financial statements.

2. In-kind benefits to affiliates are restricted by prohibiting joint sales and advertising, unless the advertising is institutional, not for specific equipment, and the affiliate pays its pro rata share.

3. All manufacturing must be conducted in the U.S. including components, subject to limited exceptions. The exceptions allow affiliates to obtain components outside of the U.S. if it is unable to obtain them in the U.S. after making a good faith effort. Penalties may be assessed for failure to make a good faith effort.

4. Equipment and network services created pursuant to the authority granted by the Bill must be accessible to individuals with disabilities, unless accessibility would impose an undue burden or have an adverse competitive impact.

B. SALES PRACTICES OF AFFILIATES

1. Affiliates may not discontinue or restrict manufacture and sale of any telecommunications equipment as long as there is a reasonable demand, unless the manufacturing affiliate is not making a profit.

2. Reasonable demand is determined by taking into account: (a) profitability; (b) technological obsolescence; (c) availability of components; (d) availability of alternative equipment, and (e) other appropriate factors.

C. ENFORCEMENT

1. A private cause of action is available to any regulated local telephone exchange carrier that is injured by an act or omission of a Bell Telephone Company or manufacturing affiliate. The in-

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jured party may recover the full amount of damages caused by
the violation and may obtain court orders to prevent future
harm.

VIII. H.R. 3626 TITLE I - THE ANTITRUST REFORM ACT OF
1993

A. SUPERSESSION OF THE MODIFICATION OF FINAL JUDGMENT

1. The primary purpose of Title I is to supersede the modified final
judgment ("MFJ") order in United States v. Western Electric, 552
The MFJ is the final consent decree under which AT&T and the
regional bell companies operate.

B. AUTHORIZATION FOR BELL COMPANIES TO ENTER COMPETITIVE LINES
OF BUSINESS

1. Bell operating companies are prohibited from providing alarm
monitoring services or interexchange telecommunications unless
authorization is first obtained pursuant to the provisions of the
Bill, or the D.C. District Court has authorized the activities pur-
suant to the MFJ prior to the passage of the Bill.

2. Authorization may be granted if there is no actual or potential
competition in activities that include: (a) interexchange telecommu-
nications through the acquisition and resale of telecommunications
services; (b) interstate telecommunications; and (c) alarm monitoring services.

3. Bell companies may engage in certain activities regardless of
current competition. These activities include: (a) any activity as
authorized by the U.S. District Court prior to enactment, or any
activity pending authorization before the court; and (b) providing
interstate exchange telecommunication services through the
resale of telecommunications services if: (1) telecommunications
originate in a State in which the company provided wireline tele-
phone service on the date of enactment; and (2) the State has
approved nonaffiliated enterprises to provide intraexchange toll
communication services that customers may route automatically
to the provider of their choice.

Version 5 introduced on Sept. 20, 1994. The Bill is divided into five titles. Title I is the
Antitrust Reform Act of 1994. Title II is the Regulation of Manufacturing, Alarm Services,
and Electronic Publishing by Bell Companies. Title III is Telecommunications
Infrastructure Competition. Title IV is Communications Competitiveness. Title V is the
Procurement Practices of Telecommunications Providers. Title 6 is the Federal
Communications Commission Resources.
C. SEPARATE AUTHORIZATION DETERMINATIONS BY ATTORNEY GENERAL
AND FCC

1. The Attorney General and the FCC must make separate determinations whether to authorize a Bell company to participate in the requested activity. Approval may only be granted if: (a) the Attorney General determines that there is no substantial possibility that monopoly power will be used to impede competition; and (b) the FCC determines that approval is consistent with the public interest, convenience, and necessity.

2. In determining whether approval would be in the public interest, convenience, and necessity the FCC will consider whether:
   (a) rates will be reduced for the activity; (b) rates will be increased for exchange services; (c) delivery of new products and services will be expedited; (d) predatory pricing or coercive economic behavior will result; (e) the risk of collusion between Bell companies will be increased; (f) consumers will be protected from unreasonable or discriminatory rates; and (g) in the case of alarm monitoring services, whether the FCC has the capabilities to effectively enforce the established regulations.

3. Authorization is final unless overturned by the United States Court of Appeals for the District of Columbia Circuit.

D. INTRASTATE TELECOMMUNICATIONS AND TELECOMMUNICATIONS RESALE

1. Authorization is not required for: (a) intrastate telecommunications interexchange services if approved by the State involved; and (b) purchase and resale of telecommunications services from a non-affiliate if the State of origin approves and the Attorney General has not filed an action to enjoin the activity.

E. LIMITATIONS ON MANUFACTURING

1. For one year from the date of enactment, Bell operating companies are absolutely barred from manufacturing or providing telecommunications and customer premises equipment either directly or through an affiliate.

2. After a one-year waiting period a Bell operating company can manufacture or provide equipment either directly or through an affiliate as long as it notifies the Attorney General and the Attorney General does not attempt to obtain a court injunction against the company.
F. ENFORCEMENT PROVISIONS

1. Knowing violations of the Act constitute a felony punishable to the same extent as a violation of section 1 of the Sherman Act.

2. Any person whose business or property is injured by a violation of the Act may sue for triple damages, attorneys fees, interest, and costs.

IX. H.R. 3626 TITLE II - REGULATION OF MANUFACTURING, ALARM SERVICES AND ELECTRONIC PUBLISHING BY BELL OPERATING COMPANIES

A. REGULATION OF MANUFACTURING BY BELL OPERATING COMPANIES

1. Bell operating companies are permitted, through an affiliate, to manufacture and provide telecommunications equipment and to manufacture customer premise equipment. Affiliates are required to: (a) maintain separate books, records and accounts which identify transactions between the affiliate and the Bell operating company; and (b) prepare financial statements and file them with the FCC.

2. Bell companies are prohibited from performing sales, advertising, installation, production, or maintenance operations for a manufacturing affiliate, with limited exceptions.

3. Exceptions allow Bell companies to: (a) engage in specific prohibited activities after acquiring equipment from the affiliate; and (b) engage in institutional advertising.

B. DOMESTIC MANUFACTURING

1. Affiliates must conduct all manufacturing within the United States, and may only use domestically manufactured component parts.

2. Exceptions are provided if the affiliate is unable to obtain equivalent component parts that are domestically produced, and the cost of the foreign components does not exceed 40 percent of the sales revenue derived from the equipment in which it is used. Likewise, intellectual property is not subject to the domestic production restriction.

3. If the affiliate does not make a good faith effort to comply with the domestic manufacturing provisions, the FCC may impose penalties and require a forfeiture. In addition, any supplier who is damaged by an affiliate's failure to manufacture domestically may sue to recover actual damages.

C. Availability of Equipment to Other Carriers

1. Telecommunications equipment manufactured by an affiliate and used to provide telephone exchange service must be made available on non-discriminatory terms to any common carrier, as long as: (a) the common carrier does not manufacture telecommunications equipment itself or through an affiliate; or (b) the common carrier agrees to make available to the Bell operating company any telecommunications that it makes and is used to provide telephone exchange service.

D. Sales Practices of Manufacturing Affiliates

1. Manufacturing affiliates may not discontinue or restrict sales to a common carrier of any telecommunications equipment as long as there is a reasonable demand for the equipment.

2. Reasonable demand is determined by the FCC based upon: (a) profitability of the equipment; (b) technological obsolescence; (b) continued availability of the equipment; (c) available alternatives; and (d) any other appropriate factors.

E. Requirements

1. Each Bell operating company must file with the FCC protocols and technical requirements for use with its telephone exchange service facilities. Competitors will be given access to this information subject to FCC regulations.

2. Bell operating companies that have an affiliate: (a) must provide opportunities to other manufacturers to sell the Bell operating company equipment that is similar to that manufactured by the Bell's affiliate; and (b) must not subsidize the affiliate with revenues from telephone exchange services.

3. Equipment and network services must be accessible to individuals with disabilities or functional limitations, unless it would impose an undue burden on the Bell operating company.

F. Regulation of Alarm Monitoring Service

1. The FCC will prescribe regulations governing entry into the alarm monitoring service market. The regulations will also pro-
hibit Bell operating companies from recording the occurrence or contents of calls received by alarm monitoring providers.

G. Regulation of Electronic Publishing

1. Bell operating companies and affiliates are prohibited from engaging in electronic publishing through their basic telephone service. Limited exceptions allow electronic publishing to be conducted through separated affiliates, joint ventures, or through means other than basic telephone service.

2. Separated affiliates and joint ventures are subject to restrictions similar to those of manufacturing affiliates.

3. Bell operating companies under common ownership or control with a separated affiliate or joint venture are also subject to restrictions similar to those of manufacturing affiliates.

4. Bell operating companies are prohibited from providing any electronic publisher with customer proprietary network information, unless made available to all electronic publishers.

5. A Bell operating company may not provide an affiliate any facilities, services, or basic telephone service unless it makes the same facilities available to unaffiliated customers.

6. Electronic publishing joint ventures are permissible provided that the Bell operating company or affiliate: (a) does not have more than a 50 percent equity interest in the venture; (b) does not have the right to more than 50 percent of the gross revenues; and (c) does not have more than 50 percent of the voting control.


1. Any electronic publishing service will have one year from the date of enactment of the Act to comply with the provisions of the Act.

2. The provisions of the Act will cease to operate on June 30, 2000.

I. Private Cause of Action

1. Any person claiming injury due to a violation of the Act may file a complaint with the FCC or file suit in federal district court.

2. Damages may not be awarded if a violation is discovered through the compliance review process and the violation is corrected within 90 days.
J. PRIVACY OF CUSTOMER INFORMATION

1. A carrier that provides a subscriber list to any affiliated or unaffiliated service provider shall provide any individual the same information on request.

2. A carrier shall not use customer proprietary network information in the provision of any service except if required by law, approved by the customer, or to the extent necessary to provide proper service.

X. H.R. 3626 TITLE III - TELECOMMUNICATIONS INFRASTRUCTURE AND COMPETITION

A. EQUAL ACCESS

1. A provision on equal access is added to the Communications Act to ensure: (a) open and accessible networks; (b) that interconnection is available to any other provider of telecommunication services so that networks are fully interoperable; and (c) that features and functions are offered in an unbundled manner.

2. Local exchange carriers in rural areas are exempted from the requirements to provide equal access and interconnection. In addition, the FCC may modify these requirements for small carriers.

B. PRICING

1. Local exchange carriers must: (a) set cost-based prices; and (b) offer unbundled services.

2. In appropriate circumstances, the FCC may establish flexible pricing in lieu of tariffs.

C. RESALE OF SERVICES

1. Resale of telephone exchange services or unbundled elements may not be prohibited or subject to unreasonable conditions when provided in conjunction with telecommunications or information services.

D. Network Functionality

1. The FCC will establish procedures to: (a) develop standards for interconnection and interoperability; (b) develop standards for designs that promote access by disabled individuals; (c) develop standards to ensure that rural exchange subscribers have access to information services; and (d) ensure accessibility to the disabled unless the cost of access would impose an undue burden on the carrier.

2. The FCC will initiate a study to determine the rules necessary to make open platform service available to all subscribers.

3. The FCC will establish quality performance measures or benchmarks for common carriers.

XI. H.R. 3626 TITLE IV - COMMUNICATIONS COMPETITIVENESS

A. Videoprogramming Services / Affiliates

1. Common carriers may not provide videoprogramming directly to subscribers in their telephone service area unless the service is provided through a separate affiliate.

2. Telephone exchange and videoprogramming costs must be kept separate so that video costs are not included in telephone rates.

3. Common carriers and affiliates must: (a) maintain separate books and records; (b) carry on their own promotions; and (c) not own any property in common.

4. Common carriers may provide inbound telemarketing or referral services related to videoprogramming by an affiliate; however, these services must be made available to any videoprogrammer or cable operator at compensatory prices.

5. All business transactions between common carriers and videoprogramming affiliates are subject to regulation by the FCC.

6. A common carrier may petition for permission to market videoprogramming directly if a cable operator is providing telecommunications services jointly with videoprogramming services.

7. Any common carrier that provides videoprogramming through an affiliate must establish a video platform and provide non-discriminatory access to the platform.
8. The FCC will establish procedures to: (a) prohibit discrimination among video programming providers; (b) require a suitable margin of available channels capacity for future expansion; (c) require video platforms to provide services for unaffiliated video program providers; and (d) prohibit a common carrier from excluding service areas based on income, race or ethnicity.

B. Prohibition on Buyouts

1. Common telephone carriers may not acquire control over any cable system in its telephone service area. Limited exceptions to this rule apply to: (a) rural area cable systems; (b) cable systems which serve less than ten percent of households in the common carrier's telephone service area; and (c) cases in which the common carrier only acquires use of a cable system from the last multi-user terminal to the premises of the end-user, and the use is limited in scope and duration.

XII. ELECTRONIC ANTI-STALKING ACT OF 1994

A. Harassment by Electronic Device

1. Provides protection from and penalties for the electronic harassment by amending section 223(a) of the Communications Act to include the terms computer modem and two-way wire or radio telecommunications device in the definition of the terms telephone and telephone call.

XIII. S. 4 - NATIONAL COMPETITIVENESS ACT OF 1993

A. Title I - Purpose and General Provisions

1. To promote industrial competitiveness by expanding the technology programs of the Department of Commerce.

B. Title II - Manufacturing Technology and Extension Act of 1993


2. Creates: (a) an Advanced Manufacturing Technology Development Program; (b) a National Manufacturing Outreach Program; and (c) a Manufacturing Advisory Committee.

C. TITLE III - CRITICAL TECHNOLOGIES

1. Amends the Stevenson-Wydler Technology Innovation Act of 1980 to establish: (a) an Office of Technology Monitoring and Competitive Assessment; and (b) a Commerce Technology Advisory Board.

2. Authorizes the Secretary of Commerce to provide financing for: (a) civilian technology loans; (b) critical technology investment companies; and (c) State technology development programs.

D. TITLE IV - COMMERCE DEPARTMENT PROVISIONS

1. Promotes dissemination of U.S. technical standards and requires the Secretary of Commerce to report on what role the federal government should have in developing product and quality standards.

E. TITLE V - APPROPRIATIONS

1. Authorizes for various activities associated with the Act.

F. TITLE VI - INFORMATION INFRASTRUCTURE AND TECHNOLOGY ACT OF 1992

1. Requires the Director of the Office of Science and Technology Policy to establish an information infrastructure program and a five-year implementation plan.

2. Provides for the establishment of the National Research and Education Network Program, which will include (1) research and development of networking hardware and software; (2) experimental testbed networks; and (3) user assistance to the Internet.

XIV. S. 473 - DEPARTMENT OF ENERGY NATIONAL COMPETITIVENESS TECHNOLOGY PARTNERSHIP ACT OF 1993

A. TECHNOLOGY PARTNERSHIPS


2. The primary purpose is to strengthen the relationship between the Department of Energy ("DOE") and the private sector.
3. Requires that at least 20 percent of the funds allocated to DOE laboratories be used in cost-shared partnerships with U.S. industry.
4. DOE Partnership Fund
   a. Funds may be advanced for any partnership with small businesses, not-for-profit groups, and State or local governments.
   b. Establishes a Laboratory Partnership Advisory Board.
5. Simplifies procedures for small business partnerships to gain access to DOE laboratories.
6. Post-employment Restrictions

XV. S. 1040 - TECHNOLOGY FOR EDUCATION ACT OF 1993

A. TITLE I - LEADERSHIP FOR TECHNOLOGY IN EDUCATION
1. Establishes an Office of Educational Technology to be administered by an Assistant Secretary for Educational Technology.
2. Creates the National Commission on Technology in Education which will advise the President and Congress on the steps needed to use technology to enhance education.

B. TITLE II - SCHOOL TECHNOLOGY SUPPORT
1. Authorizes the Assistant Secretary of Education to award grants to State education agencies to develop plans to use modern technology in education.

C. TITLE III - INFORMATION DISSEMINATION, TECHNOLOGY TRAINING, AND TECHNICAL ASSISTANCE
1. Directs the Assistant Secretary of Education to establish an electronic network to be used to disseminate educational information throughout the U.S.

D. TITLE IV - EDUCATIONAL TECHNOLOGY PRODUCT DEVELOPMENT, PRODUCTION, AND DISTRIBUTION
1. Technology for the Classroom Act of 1993

a. Authorizes competitive grants to develop computer-based instructional programs or technology-enhanced systems.

E. **Title V - Educational Technology Research, Development, and Assessment**

1. Authorizes grants for development of requirements, specifications, and prototypes related to high-performance educational computing and telecommunications networks.

XVI. **S. 1086 - Telecommunications Infrastructure Act of 1993**\(^{123}\)

A. **Open Access**

1. The FCC will prescribe regulations that require telecommunications carriers to provide to anyone seeking to provide telecommunications or information services: (a) interconnection to the carrier's telecommunications facilities; (b) non-discriminatory access; and (c) telecommunications services and network functions without restrictions on resale or sharing.

2. Telecommunication carriers are entitled to reasonable compensation for providing access to these services.

B. **Universal Service**

1. Telecommunications carriers are required to contribute to the advancement of universal service.

2. The FCC is required to set a goal of directly assisting individuals who cannot afford the cost of telecommunications equipment or services.

3. Requires FCC to ensure that rural and non-competitive areas have access to high-quality telecommunications network facilities.

C. **Cable Television Systems**

1. Prohibits local exchange carriers from: (a) acquiring more than a five percent interest in an unaffiliated cable system within its telephone exchange area; or (b) entering into a joint venture with an unaffiliated cable system within its telephone exchange area.

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D. OTHER SERVICES

1. Defines requirements for provision of information services by Bell Telephone companies.
2. Imposes restrictions on the use of customer proprietary network information to protect customer privacy.
3. Limits state regulation of information services.

XVII. S. 1822 - COMMUNICATIONS ACT OF 1994

A. TITLE I - PROTECTION AND ADVANCEMENT OF UNIVERSAL SERVICE

1. Promotes universal service by requiring common carriers engaged in intrastate, interstate, or international communications to contribute to the enhancement of universal service.
2. The FCC is directed to promulgate guidelines for the provision of universal service, with the States given primary responsibility for defining universal service.

B. TITLE II - TELECOMMUNICATIONS INVESTMENT

1. FCC is given full authority to ensure that rural and non-competitive markets are given access to high-quality telecommunications networks.
2. The FCC is directed to develop interconnection and interoperability standards.
3. Subject to FCC regulation, telecommunications carriers are encouraged to jointly plan and design public switched network infrastructure and services. Additionally, local exchange carriers are required to share public switched network infrastructure and functions with small carriers.

C. TITLE III - REGULATORY REFORM

1. Regulations are reformed to: (a) remove barriers to entry into the interstate and intrastate telecommunications markets; (b) allow other regulated public utilities to provide telecommunications services; (c) enable telecommunications numbers to be portable; and (d) permit flexible pricing.

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D. **Title IV - Authorized Activities of Bell Operating Companies**

1. **Subtitle A - Telecommunications Equipment Research and Manufacturing Competition**
   a. Overrides the AT&T break-up consent decree to permit Bell companies, through a separate affiliate, to manufacture telecommunications equipment and customer premise equipment.
   b. Affiliates are subject to regulation, as are transactions between Bell companies and their affiliates.

2. **Subtitle B - Regulation of Alarm Services and Electronic Publishing by Bell Operating Companies**
   a. Allows Bell operating companies to transport alarm monitoring service signals on a common carrier basis only.
   b. After 5 1/2 years from the date the Bill is enacted, Bell operating companies may petition the FCC to provide alarm monitoring services.
   c. Bell operating companies may provide electronic publishing services, but only through a separated affiliate. A sunset provision nullifies these restrictions after June 30, 2000.

3. **Subtitle C - Information Services**
   a. Bell operating companies that offer gateway services must make the service available to all of its subscribers on non-discriminatory terms.

4. **Subtitle D - InterLATA Telecommunications Services**
   a. Bell operating companies are allowed to engage in interLATA telecommunications service, subject to regulatory restrictions (LATA refers to the local access and transport areas defined in the AT&T break-up consent decree).

E. **Title V - Regulatory Parity Between Telephone and Cable Companies**

1. Prohibits local exchange carriers from acquiring more than a five percent interest in any cable system within its service area. Local exchange carriers are also prohibited from providing cable service, unless through a separate subsidiary.

2. Prohibits cable service providers acquiring more than a five percent interest in any local exchange carrier within their service area. Cable operators are also prohibited from providing telecommunications service, unless through a separate subsidiary.
F. Title VI - Customer Control over Information

1. Various restrictions are imposed on the use of proprietary customer network information, including automatic number identification.

G. Title VII - Media Diversity

1. After one year from the date of enactment, national and local ownership rules on radio and television broadcast stations will be removed to ensure that broadcasters are able to compete with other media providers.

XVIII. S. 2111 - Telecommunications Service Enhancement Act of 1994

A. Removal of Entry Barriers

1. State and local statutes and regulations can not prohibit an entity from providing interstate or intrastate telecommunication services.

2. State and local government agencies may not discriminate among telecommunication carriers.

B. InterLATA Telecommunication Services

1. The definition of InterLATA is local access and transport areas as defined in United States v. Western Electric Co., 569 F.Supp. 990.

2. A Bell operating company or affiliate may engage in providing interLATA telecommunication service.

C. Regulatory Pricing

1. Cable operators may not provide telephone exchange service or telephone exchange access service in areas where it provides video programming if the local telephone carrier is prohibited from providing video programming services

2. The Commission shall enact regulations that ensure all competitive telecommunication providers are subject to equivalent regulation.

3. A local exchange carrier may provide video programming directly to subscribers, and may provide channels of communication to be used for video programming.