

# CRS Report for Congress

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## **Internet: An Overview of Key Technology Policy Issues Affecting Its Use and Growth**

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# Internet: An Overview of Key Technology Policy Issues Affecting Its Use and Growth

## Summary

The growth of the Internet may be affected by a number of issues being debated by Congress. This report summarizes several key technology policy issues.

1. **Internet privacy** issues encompass concerns about information collected by Web site operators, and, separately, about the extent to which law enforcement officials or employers monitor an individual's Internet activities. The 2001 USA PATRIOT Act (P.L. 107-56) has privacy advocates concerned about new authorities granted to law enforcement officials in that regard.

2. Concerns about **computer security** are prevalent in both the government and private sectors. Concerns have also been raised about the vulnerability of the nation's critical infrastructures (e.g. electrical power supply) to cyber attacks. Issues for Congress include oversight and improvement of the protection of federal computer systems and cooperation with and between the private sectors.

3. **Broadband Internet access** gives users the ability to send and receive data at speeds far greater than current Internet access over traditional telephone lines. With deployment of broadband technologies beginning to accelerate, Congress is seeking to ensure fair competition and timely broadband deployment to all sectors and geographical locations of American society.

4. Since the mid-1990s, commercial transactions on the Internet — called **electronic commerce (e-commerce)** — have grown substantially. Among the issues facing Congress are encryption procedures to protect e-commerce transactions, extension of the 3-year tax moratorium on domestic e-commerce taxation, the impact of the USA PATRIOT Act, and how the policies of the European Union (EU) and World Trade Organization (WTO) may affect U.S. e-commerce activities.

5. The new federal anti-**spam** law, the CAN-SPAM Act, permits, but does not require, the Federal Trade Commission (FTC) to create a "do not e-mail" list similar to the National Do Not Call list for telemarketers. Whether to require the FTC to establish such a list, and the extent to which the new law will actually reduce the amount of spam, remain congressional issues in the wake of the law's enactment.

6. The administration and governance of the **Internet's domain name system (DNS)** is currently under transition from federal to private sector control. Congress is monitoring how the Department of Commerce is managing and overseeing this transition in order to ensure competition and promote fairness among all Internet constituencies.

7. The evolving role of the Internet in the political economy of the United States continues to attract attention in the 108<sup>th</sup> Congress. Three major themes characterize legislative activity and interest: Internet infrastructure development, resource management, and the provision of online services by the government (called "**e-government**").

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# Internet: An Overview of Key Technology Policy Issues Affecting Its Use and Growth

## Introduction

The continued growth of the Internet for personal, government, and business purposes may be affected by a number of issues being debated by Congress. Among them are Internet privacy, computer security, access to broadband (high-speed) services, electronic commerce (e-commerce), unsolicited commercial electronic mail (“junk e-mail” or “spam”), Internet domain names, and government information technology management. This report provides brief summaries of those issues, as well as appendices that list related legislation pending in the 108<sup>th</sup> Congress, a list of acronyms, a discussion of related legislation passed in the 105<sup>th</sup> - 107<sup>th</sup> Congresses, and a list of other CRS reports that provide more detail on the issues.

## Legislation Passed by the 108<sup>th</sup> Congress

During the first session of the 108<sup>th</sup> Congress, two laws were enacted related to the topics covered in this report. The first concerns commercial electronic mail (e-mail), and the other is related to Internet domain names. Both of these subjects are discussed in more detail later in this report. Following is a brief summary of the two new laws.

### **The CAN-SPAM Act (P.L. 108-187)**

P.L. 108-187 (S. 877), **the CAN-SPAM Act**, sets civil or criminal penalties if senders of commercial e-mail do not provide a legitimate opportunity for recipients to “opt-out” of receiving further commercial e-mail from the sender, if they use deceptive subject headings, if they use fraudulent information in the header of the message, if they “harvest” e-mail addresses from the Internet or use “dictionary attacks” to create e-mail addresses, if they access someone else’s computer without authorization and use it to send multiple commercial e-mail messages, or engage in certain other activities connected with sending “spam” — variously defined by participants in the debate as unsolicited commercial e-mail, unwanted commercial e-mail, or fraudulent commercial e-mail. This new federal law preempts state laws that specifically regulate electronic mail, but not other state laws, such as trespass, contract, or tort law, or other state laws to the extent they relate to fraud or computer crime. It authorizes, but does not require, the Federal Trade Commission to establish a centralized “do not e-mail” list similar to the National Do Not Call list for telemarketing.

## The PROTECT Act (P.L. 108-21)

P.L. 108-21 (S. 151), the **PROTECT Act**, contains a provision (Sec. 108, Misleading Domain Names on the Internet) that makes it a punishable crime to knowingly use a misleading domain name with the intent to deceive a person into viewing obscenity on the Internet. Increased penalties are provided for deceiving minors into viewing harmful material. (CRS Report RS21328 provides further information on this and other legislative efforts to protect children from unsuitable material on the Internet.)

## Internet Privacy<sup>1</sup>

Internet privacy issues encompass a range of concerns. One is that the Internet makes it easier for governmental and private sector entities to obtain information about consumers and possibly use that information to the consumers' detriment. That issue focuses on the extent to which Web site operators collect personally identifiable information (PII) about individuals and share that information with third parties, often without the knowledge or consent of the people concerned. Another aspect of Internet privacy is the extent to which Internet activities such as electronic mail (e-mail) and visits to Web sites are monitored by government or law enforcement officials, or employers.

### Collection of Data by Web Site Operators and Fair Information Practices

One aspect of the Internet privacy issue is whether commercial Web sites should be required to adhere to four "fair information practices" proposed by the Federal Trade Commission (FTC): providing *notice* to users of their information practices before collecting personal information, allowing users *choice* as to whether and how personal information is used, allowing users *access* to data collected and the ability to contest its accuracy, and ensuring *security* of the information from unauthorized use. Some add *enforcement* as a fifth practice. In particular, the question is whether industry can be relied upon to regulate itself, or if legislation is needed to protect consumer privacy. Questions also have arisen about whether federal government Web sites should have to adhere to such practices. CRS Report RL30784, *Internet Privacy: An Analysis of Technology and Policy Issues*, provides more detailed information on fair information practices in the Internet context.

**Commercial Web Sites.** Based on surveys of commercial Web sites during the late 1990s, the FTC issued reports and made recommendations about whether legislation is needed to protect consumer privacy on the Web. Although the FTC and

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<sup>1</sup> CRS Report RL31408, *Internet Privacy: Overview and Pending Legislation*, by Marcia S. Smith, provides an overview of Internet privacy issues and tracks pending legislation. It is updated more frequently than this report. CRS Report RL30784, *Internet Privacy: An Analysis of Technology and Policy Issues*, by Marcia S. Smith, provides more comprehensive analysis of many of the issues involved in this debate.

the Clinton Administration favored self regulation, in 1998, frustrated at industry's slow pace, the FTC announced that it would seek legislation protecting children's privacy on the Internet by requiring parental permission before a Web site could request information about a child under 13. The Children's Online Privacy Protection Act (COPPA, part of P.L. 105-277) was enacted four months later.

In 1999, the FTC concluded that further legislation was not needed at that time for children or adults, but reversed its decision in 2000 when another survey indicated that industry still was not self regulating to the desired extent. The FTC voted 3-2 to propose legislation that would allow it to establish regulations requiring Web site operators to follow the four fair information practices. In June 2001, Timothy Muris replaced Robert Pitofsky as FTC chairman and indicated that he did not see a need for additional legislation at that time.

The Internet industry has taken steps to demonstrate that it can self regulate. One example is the establishment of "seals" for Web sites by the Better Business Bureau, TRUSTe, and WebTrust. To display a seal from one of those organizations, a Web site operator must agree to abide by certain privacy principles (some of which are based on the OPA guidelines), a complaint resolution process, and to being monitored for compliance. Another approach is using software called "P3P" (Platform for Privacy Preferences) that gives individuals the option to allow their web browser to match the privacy policies of websites they access with the user's selected privacy preferences. Advocates of self regulation argue that these efforts demonstrate industry's ability to police itself. Advocates of further legislation argue that while the seal programs are useful, they do not carry the weight of law, limiting remedies for consumers whose privacy has been violated. They also point out that while a site may disclose its privacy policy, that does not necessarily equate to having a policy that protects privacy. Some also consider P3P to be insufficient.

In the 108<sup>th</sup> Congress, H.R. 69 (Frelinghuysen) would require the FTC to prescribe regulations to protect the privacy of personal information collected from and about individuals not covered by COPPA. H.R. 1636 (Stearns) is a broad consumer privacy bill. S. 745 (Feinstein) requires commercial entities to provide notice and choice (opt-out) to individuals regarding the collection and disclosure or sale of their PII, with exceptions. S. 1350 (Feinstein) requires federal agencies and persons engaged in interstate commerce, who possess electronic data containing personal information, to disclose any unauthorized acquisition of that data. See CRS Report RL31408 for the status of Internet privacy legislation.

**Federal Web Sites.** Until the summer of 2000, attention was focused on privacy issues associated with commercial Web sites. That changed in June 2000, however, when controversy erupted over the privacy of visitors to government Web sites. The issue concerned federal agencies' use of computer "cookies" (small text files placed on users' computers when they access a particular Web site) to track activity at their Web sites. Federal agencies had been directed by President Clinton and the Office of Management and Budget (OMB) to ensure that their information collection practices adhere to the Privacy Act of 1974. A September 5, 2000 letter from OMB to the Department of Commerce further clarified that "persistent" cookies, which remain on a user's computer for varying lengths of time (from hours

to years), are not allowed unless four specific conditions are met. “Session” cookies, which expire when the user exits the browser, are permitted.

In June 2000, however, it became known that contractors for the Office of National Drug Control Policy (ONDCP) were using cookies to collect information about those using ONDCP’s Web site during an anti-drug campaign. The White House directed ONDCP to cease using cookies, and OMB issued a memorandum reminding agencies to post and comply with privacy policies and detailing the limited circumstances under which agencies should collect personal information.

Congress passed a provision in the FY2001 Treasury-General Government Appropriations Act (the “Treasury-Postal” Appropriations Act) and the FY2001 Transportation Appropriations Act (P.L. 106-346, Section 501) that prohibited funds from being used by any federal agency to collect, review, or create aggregate lists that include personally identifiable information (PII) about an individual’s access to or use of a federal Web site or enter into agreements with third parties to do so, with exceptions. Similar language was included in the FY2002 Treasury-Postal Appropriations Act (P.L. 107-67), and the Treasury-Postal section of the FY2003 Consolidated Appropriations Resolution (P.L. 108-7). Congress also passed the E-Government Act (P.L. 107-347, H.R. 2458), which requires federal Web sites to include a privacy notice that addresses what information is to be collected, why, its intended use, what notice or opportunities for consent are available to individuals regarding what is collected and how it is shared, how the information will be secured, and the rights of individuals under the 1974 Privacy Act and other relevant laws. It also requires federal Web sites to translate their privacy policies into a standardized machine-readable format, enabling P3P to work, for example.

## **Monitoring of E-Mail and Web Activity**

**Government and Law Enforcement Monitoring.** Another Internet privacy storm broke in the summer of 2000 when it became known that the FBI, with a court order, can install software on Internet Service Providers’ equipment to intercept e-mail and monitor an individual’s Web activity. The extent to which that software program, originally called Carnivore (now “DCS 1000”), can differentiate between e-mail and Web activity involving a subject of an FBI investigation and other people’s e-mail and Web activity is of considerable debate, with critics claiming that Carnivore violates the privacy of innocent users. The 21<sup>st</sup> Century Department of Justice Authorization Act (P.L. 107-283) requires the Justice Department to report to Congress on its use of DCS 1000 or any similar system.

Conversely, following the September 11, 2001, terrorist attacks, Congress passed the USA PATRIOT Act (P.L. 107-56), which expands law enforcement’s ability to monitor Internet activities. The Internet privacy-related provisions of the USA PATRIOT Act are discussed in CRS Report RL31289. The most controversial provision is Section 212. As originally enacted, that section allows ISPs to divulge records or other information (but not the contents of communications) pertaining to a subscriber if they believe there is immediate danger of death or serious physical injury or as otherwise authorized, and requires them to divulge such records or information (excluding contents of communications) to a governmental entity under certain conditions. It also allows an ISP to divulge the contents of communications



to a law enforcement agency if it reasonably believes that an emergency involving immediate danger of death or serious physical injury requires disclosure of the information without delay. In 2002, Congress amended this section, lowering the threshold for when ISPs could voluntarily divulge information, and to whom. Under the Cyber Security Enhancement Act, section 225 of the Homeland Security Act (P.L. 107-296), ISPs need only a “good faith” belief (instead of a “reasonable” belief), that there is an emergency involving danger (instead of “immediate” danger) of death or serious physical injury. The contents of the communication can be disclosed to “a Federal, state, or local governmental entity” (instead of a “law enforcement agency”).

Privacy advocates complain that it is extremely difficult to monitor how the USA PATRIOT Act is being implemented. They are especially concerned about the amendment made by the Cyber Security Enhancement Act. For example, the Electronic Privacy Information Center (EPIC) notes that allowing such information to be disclosed to any governmental entity not only poses increased risk to personal privacy, but also is a poor security strategy; and that the language does not provide for judicial oversight of the use of these procedures.

S. 1695 (Leahy) would amend the PATRIOT Act to provide more oversight. *Inter alia*, it would amend the sunset provision (Sec. 224) such that all of the above cited sections would terminate on December 31, 2005, including Sections 210 and 216, which currently are not subject to the sunset clause. S. 1709 (Craig) would amend the USA PATRIOT Act, *inter alia* to include Section 216 in the sunset provision.

**Employer Monitoring.** An emerging issue is whether employers should be required to notify their employees if e-mail or other computer-based activities are monitored. A 2003 survey by the American Management Association [<http://www.amanet.org/research/index.htm>] found that 52% of the companies surveyed engage in some form of e-mail monitoring. The public policy concern appears to be less about whether companies should be able to monitor activity, but whether they should notify their employees of that monitoring.

## Spyware

Some software products include, as part of the software itself, a method by which information is collected about the use of the computer on which the software is installed. When the computer is connected to the Internet, the software periodically relays the information it has collected back to the software manufacturer or a marketing company. The software that performs the collection and reporting function is often called “spyware.” Software programs that include spyware can be obtained on a disk or downloaded from the Internet. They may be sold or provided for free. Typically, users have no knowledge that the software product they are using includes spyware. Some argue that users should be notified if the software they are using includes spyware. Two bills in the 107<sup>th</sup> Congress would have required such notification, but there was no action on either bill. In the 108<sup>th</sup> Congress, H.R. 2929 (Bono) would require the FTC to prohibit, by regulation, transmission of a spyware program to a computer via the Internet unless the user of the computer expressly consents to the transmission, to establish requirements for the transmission of

spyware, and to prohibit the use of spyware to collect PII unless notice of that usage is given in a prominent location.

Another use of the term spyware refers to software that can record a person's keystrokes on a computer keyboard. In this way, all typed information can be obtained by another party, even if the author modifies or deletes what was written, or if the characters do not appear on the monitor (such as when entering a password). Commercial products have been available for some time, but the existence of such software was highlighted in 2001 when the FBI used it in an illegal gambling and loan sharking case. Law enforcement officials armed with a search warrant installed spyware (called "key logging" software in this context) on the suspect's computer, allowing them to obtain his password for an encryption program he used, and thus to obtain evidence. Some privacy advocates argued that wiretapping authority should have been obtained, rather than a search warrant, because the software intercepts communications. The court upheld the FBI. Press reports also indicate that the FBI is developing a program dubbed "Magic Lantern," which performs a similar task, but can be installed remotely on a subject's computer by surreptitiously including it in an e-mail message, for example. Privacy advocates are questioning what type of legal authorization would be required for use of such techniques.

## Computer Security

On October 21, 2002, all 13 of the Internet's root Domain Name System servers were targeted by a distributed denial of service attack. While the attack had little overall effect on the performance of the Internet, a more sophisticated and sustainable attack might have had a more deleterious impact. As use of the Internet grows, so has concern about security of and security on the Internet. A long list of security-related incidents that have received wide-ranging media coverage (e.g. the Melissa virus, the Love Bug, denial-of-service attacks, and the Code Red, Code Red II, and Nimda worms) represents the tip of the iceberg. Every day, persons gain access, or try to gain access, to someone else's computer without authorization to read, copy, modify, or destroy the information contained within. These persons range from juveniles to disgruntled (ex)employees, to criminals, to competitors, to politically or socially motivated groups, to agents of foreign governments.

The extent of the problem is unknown. Much of what gets reported as computer "attacks" are probes, often conducted automatically with software widely available for even juveniles to use. But the number of instances where someone has actually gained unauthorized access is not known. Not every person or company whose computer system has been compromised reports it either to the media or to authorities. Sometimes the victim judges the incident not to be worth the trouble. Sometimes the victim may judge that the adverse publicity would be worse. Sometimes the affected parties do not even know their systems have been compromised. There is some evidence to suggest, however, that the number of incidents is increasing. According to the Computer Emergency Response Team (CERT) at Carnegie-Mellon University, the number of incidents reported to it has grown just about every year since the team's establishment — from 132 incidents in

1989 to over 82,000 incidents in 2002. For the first three quarters of 2003, nearly 115,000 incidents have been reported.

The impact on society from the unauthorized access or use of computers is also unknown. Again, some victims may choose not to report losses. In many cases, it is difficult or impossible to quantify the losses. But social losses are not zero. Trust in one's system may be reduced. Proprietary and/or customer information (including credit card numbers) may be compromised. Any unwanted code must be found and removed. The veracity of the system's data must be checked and restored if necessary. Money may be stolen from accounts or extorted from the victim. If disruptions occur, sales may be lost. If adverse publicity occurs, future sales may be lost and stock prices may be affected. Estimates of the overall financial losses due to unauthorized access vary and their accuracy is untested. Estimates typically range in the billions of dollars per major event like the Love Bug virus or the denial-of-service attacks in February 2000. Similar estimates have been made for the Code Red worms. Estimates of losses internationally range up to the tens of billions of dollars. In the 2003 Computer Crime and Security Survey,<sup>2</sup> 251 responders (out of a total of 530) estimated financial losses of \$202 million in the previous 12 months. A majority of the losses were attributed to loss of proprietary information and fraud.

Aside from the losses discussed above, there is also growing concern that unauthorized access to computer systems could pose an overall national security risk should it result in the disruption of the nation's critical infrastructures (e.g., transportation systems, banking and finance, electric power generation and distribution). These infrastructures rely increasingly on computer networks to operate, and are themselves linked by computer and communication networks. To address this concern, President Clinton issued a Presidential Decision Directive (PDD-63) in May 1998. PDD-63 set as a national goal the ability to protect critical infrastructures from intentional attacks (both physical and cyber). It set up organizational and operational structures within the federal government to help achieve this goal and called for a coordinated effort to engage the private sector. (See CRS Report RL30153, *Critical Infrastructures: Background, Policy and Implementation*). The Bush Administration has chosen to follow a similar policy as articulated in Executive Order 13231 (as amended by Executive Orders 13284 and 13286) and in Homeland Security Presidential Directive HSPD-7. In November 2002, Congress passed the Homeland Security Act of 2002 (P.L. 107-296), transferring a number of the federal organizations established by PDD-63 to the new

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<sup>2</sup> The Computer Crime and Security Survey is conducted by the Computer Security Institute (CSI) in cooperation with the San Francisco Federal Bureau of Investigation's Computer Intrusion Squad. The CSI/FBI Survey, as it has become known, has been conducted annually since 1996, and surveys U.S. corporations, government agencies, financial and medical institutions and universities. The 2003 figure for financial losses is a sharp decline from the 2002 survey results which estimated losses at \$456 million, but is in line with previous years' reporting. The CSI/FBI survey does not represent a statistical sampling of the nation's computer security practitioners, nor can it be extrapolated to estimate losses on a national scale. The survey can be found at [<http://www.gocsi.com/>]. This website was last viewed on Dec. 23, 2003.

Department of Homeland Security.<sup>3</sup> The President's Critical Infrastructure Board (established by E.O. 13231 but later dissolved by E.O. 13286) released a National Strategy to Secure Cyberspace in February 2003. The National Strategy assigns a number of responsibilities to the new Department.

As a deterrent, the federal computer fraud and abuse statute, 18 U.S.C. 1030, makes it a federal crime to gain unauthorized access to federal government computers, to be exposed to certain information contained on government computers, to damage or threaten to damage federal computers, bank computers, or computers used in interstate commerce, to traffic in passwords for these computers, to commit fraud from these computers, or from accessing a computer to commit espionage. The statute also provides for penalties. For more information on this statute, see CRS Report 97-1025, *Computer Fraud and Abuse: An Overview of 18 U.S.C. 1030 and Related Federal Criminal Laws*. Most states also have laws against computer fraud and abuse. The USA PATRIOT Act (P.L. 107- 56), passed in the wake of the September 11, 2001 terrorist attacks, increased some of the penalties associated with these illegal activities. The USA PATRIOT Act also permits a single warrant to be granted to allow investigators to track hackers across jurisdictions. The Homeland Security Act (P.L. 107-296) increased penalties for anyone who knowingly or recklessly causes injury or death, while knowingly transmitting malicious code or commands.

At the international level, the 41-country Council of Europe negotiated a convention to facilitate tracking cyber criminals across national boundaries.<sup>4</sup> The United States, an observer at these negotiations, signed the convention and is encouraging other countries to do so, too. U.S. businesses had expressed some concern about their liability and the costs associated with record-keeping under this treaty. In addition to this forum, the European Commission has published a couple of communiques related to network security and the Organization of Economic Cooperation and Development has reissued a set of guidelines related to information and network security. There is also some debate within the international community on what to do about computer intrusions by government agents; for example, whether such acts would be considered acts of war. For more information regarding this issue, see CRS Report RL30735, *Cyberwarfare*.

While the tools for prosecuting appear to be in place, most experts agree that much more can be done to make the Internet and its users more secure. The federal government is required to protect sensitive information on its own computers. Congress passed the most recent requirements for federal agencies to follow in the Federal Information Security Management Act of 2002 (P.L. 107-347, Title III). These include following guidelines developed by the National Institute of Standards and Technology and Office of Management And Budget (OMB) Circular A-130,

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<sup>3</sup> Many of the functions of these entities are now being performed by the National Computer Security Division within the Department's Information Analysis and Infrastructure Protection Directorate.

<sup>4</sup> The Convention on Cybercrime, ETS-185 can be found on the Council's web page, at [<http://conventions.coe.int>]; click on Full List of European Treaties. This web page was last viewed on Dec. 23, 2003.

Appendix III in developing agency-wide information security programs. The Federal Information Security Management Act (FISMA) also requires agencies to submit their information security programs to an annual independent evaluation, the results of which are summarized and reported to Congress.

The security of private-sector computer systems varies. Some industries have been at the forefront of security (e.g. banking and finance), while others are just now appreciating the threat to and vulnerabilities of their systems. In response to PDD-63, some of the sectors that operate critical infrastructures formed Information Sharing and Analysis Centers (ISACs) and across sectors they have formed the Partnership for Critical Infrastructure Security. The goal of these associations is to learn from each other's experiences and to quickly respond to new attacks and vulnerabilities. It should be noted, too, that in addition to CERT at Carnegie Mellon, individual security firms and security-related associations offer clearinghouses for security-related news, alerts, warnings, etc. The informal networks by which security information spreads is also very extensive. One of the key recommendations in a draft version of the National Strategy to Secure Cyberspace was that the private sector (ISPs and network security firms) establish and operate a Cyberspace Network Operations Center. As conceived, the Center would have been able to detect (and perhaps even predict), as early as possible, attacks on the network and respond quickly. In the final version of the Strategy, however, the concept of a formal Center gave way to a more decentralized capability of monitoring, detection, analysis, and response that would be performed by existing bodies of government and private entities charged with network security, and coordinated by the Department of Homeland Security.

The market for computer and Internet security (divided into hardware, software, and service providers) is large and growing. PCWorld.com reported that a recent International Data Corporation (IDC) study estimated that the world network security market will grow from \$17 billion in 2001 to \$45 billion by 2006.<sup>5</sup> Even so, according to the CSI/FBI report, most organizations spend no more than 5% of their total information technology budget on security.<sup>6</sup> Operating systems and applications developers say they are paying greater attention to designing better security into their products. But still, it is common to have vulnerabilities found in products after they have been put on the market. In some cases, patches have had to be offered at the same time a new product is brought onto the market. And, although patches are offered to fix these vulnerabilities in most cases, many system administrators do not keep their software/configurations current.<sup>7</sup> Many intrusions take advantage of vulnerabilities noted many months earlier, for which fixes have already been offered.

There are as yet no industry standards for determining how secure a firm's computer system should be or for assessing how secure it is in fact. However, there is a push by the major accounting houses and insurance firms to make corporate

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<sup>5</sup> The link to this article is no longer available.

<sup>6</sup> CSI/FBI Survey, 2002. p.18.

<sup>7</sup> The National Strategy to Secure Cyberspace recommends ways to make it easier for users to update the latest security-related patches.

leaders and boards more accountable for their firms' information assets. Also, some observers speculate that it is only a matter of time before owners of computer systems are held responsible for damages done to third-party computers as a result of inadequately protecting their own systems.<sup>8</sup> Nor are there any standards on how secure a vendor's software should be. The federal government, in cooperation with a number of other countries, has developed a set of International Common Criteria for Information Technology Security Evaluation, to allow certified laboratories to test security products and rate their level of security for government use. These criteria may evolve into industry standards for certifying security products. Some in the security community feel that security will not improve without some requirements imposed upon the private sector. However, both users and vendors of computer software suggest that the market is sufficient to address security in the most cost-effective manner. The Bush Administration, as the Clinton Administration before it, has chosen to use engagement and not regulation to encourage the private sector to improve security. However, both Administrations also did not rule out the use of regulation if necessary.

Congress has maintained a strong oversight role in the area of computer security, especially in regard to the security of government systems. It is expected that this oversight will continue. The 108<sup>th</sup> Congress has not passed any major legislation related to improving the security of the Internet to date. A few bills have been introduced that touch upon, either directly or indirectly, Internet or computer security. For example, S. 187 (Edwards) would require federal Chief Information Officers (CIOs) to identify their agency's network vulnerabilities, set performance goals for addressing those vulnerabilities, and evaluate how those performance goals are being met on a quarterly basis. It also would instruct the National Institute of Standards and Technology to develop guidelines to assist CIOs in this task. S. 1633 (Corzine) and H.R. 3233 (Gutierrez) would require financial firms to notify customers of unauthorized use of personal information maintained by those firms. H.R. 1636 (Stearns) would require companies to effect adequate information security policies to protect personal information of customers and to take remedial action to information security advisories issues by the Department of Homeland Security. H.R. 3159 (Waxman) would specifically include in the federal information security requirements protections of information shared via peer-to-peer programs. S. 779 (Jeffords) and S. 1039 (Inhofe) would require wastewater facilities to conduct vulnerability studies that would include assessing vulnerabilities of facility information. H.R. 3159 passed the House on October 8, 2003.

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<sup>8</sup> See Computerworld. *IT Security Destined for the Courtroom*. May 21, 2001. Vol 35. No. 21. p 1,73.

## Broadband Internet Access<sup>9</sup>

Broadband Internet access gives users the ability to send and receive data at speeds far greater than conventional “dial up” Internet access over existing telephone lines. New broadband technologies — cable modem, digital subscriber line (DSL), satellite, and fixed wireless Internet — are currently being deployed nationwide by the private sector. Concerns in Congress have arisen that while the number of new broadband subscribers continues to grow, the rate of broadband deployment in urban and high income areas appears to be outpacing deployment in rural and low-income areas, thereby creating a potential “digital divide” in broadband access. The Telecommunications Act of 1996 authorizes the Federal Communications Commission (FCC) to intervene in the telecommunications market if it determines that broadband is not being deployed to all Americans in a “reasonable and timely fashion.”

At issue is what, if anything, should be done at the federal level to ensure that broadband deployment is timely, that industry competes on a level playing field, and that service is provided to all sectors of American society. Congress continues to debate several proposed approaches to addressing broadband deployment, including: easing restrictions and requirements on incumbent telephone companies; ensuring that cable networks share their lines with, and give equal treatment to, rival ISPs who wish to sell their services to consumers (e.g. the “open access” issue); and providing federal financial assistance for broadband deployment in rural and economically disadvantaged areas.

### Easing Restrictions and Requirements on Incumbent Telephone Companies

The debate over access to broadband services has prompted policymakers to examine a range of issues to ensure that broadband will be available on a timely and equal basis to all U.S. citizens. One issue under examination is whether present laws and subsequent regulatory policies as they are applied to the ILECs (incumbent local exchange [telephone] companies such as SBC or Verizon) are thwarting the deployment of such services. Two such regulations are the restrictions placed on Bell operating company (BOC) provision of long distance services within their service territories, and network unbundling and resale requirements imposed on all incumbent telephone companies. In the 107<sup>th</sup> Congress, H.R. 1542 (Tauzin-Dingell), passed by the House on February 27, 2002, would have lifted these restrictions and requirements, with some exceptions, for high speed data (broadband) transmission.

**Unbundling and Resale.** Present law requires all ILECs to open up their networks to enable competitors to lease out parts of the incumbent’s network. These unbundling and resale requirements, which are detailed in Section 251 of the Telecommunications Act of 1996, were enacted in an attempt to open up the local telephone network to competitors. Under these provisions, ILECS are required to

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<sup>9</sup> See also CRS Issue Brief IB10045, *Broadband Internet Access: Background and Issues*, by Angele A. Gilroy and Lennard G. Kruger, which is updated more frequently than this report.

grant competitors access to individual pieces, or elements, of their networks (e.g., a line or a switch) and to sell them at below retail prices.

The FCC, in a February 2003 split decision, modified the regulatory framework regarding how ILECs and competitors interact in the telecommunications marketplace. The “triennial review” order (CC Docket 01-338) established new guidelines regarding how ILECs must make their networks available to competitors. Included in the FCC’s decision are provisions that: remove the requirement, over a transition period, that line sharing be an unbundled network element; eliminate unbundling for switching for business customers using high capacity loops (but gives state utility commissions 90 days to rebut the national finding); give state commissions 9 months to make geographic specific determinations regarding the availability of unbundled elements and the unbundled network element platform; remove unbundling requirements on newly deployed hybrid (fiber-copper) loops, but ensure continued access to existing copper; and remove unbundling requirements on all newly deployed fiber to the home. The details of the FCC’s decision remain unclear as the text of the order has yet to be released.

**Provision of InterLATA Services.** As a result of the 1984 AT&T divestiture, the Bell System service territory was broken up into service regions and assigned to regional Bell operating companies (BOCs). The geographic area in which a BOC may provide telephone services within its region was further divided into local access and transport areas, or LATAs. These LATAs total 164 and vary dramatically in size. LATAs generally contain one major metropolitan area and a BOC will have numerous LATAs within its designated service region.

Telephone traffic that crosses LATA boundaries is referred to as interLATA traffic. Restrictions contained in Section 271 of the Telecommunications Act of 1996 prohibit the BOCs from offering interLATA services within their service regions until certain conditions are met. BOCs seeking to provide such services must file an application with the FCC and the appropriate state regulatory authority that demonstrates compliance with a 14-point competitive checklist of market-opening requirements. The FCC, after consultation with the Justice Department and the relevant state regulatory commission, determines whether the BOC is in compliance and can be authorized to provide in-region interLATA services.<sup>10</sup>

As of December 3, 2003, all four BOCs — Verizon, SBC Communications, BellSouth and West — have received approval to enter the in-region interLATA market. Now that the approval process has been completed, the FCC’s role shifts to monitoring to ensure compliance. Under the terms and conditions of the 1996 Act, the FCC is required to monitor the BOCs to ensure compliance with the terms agreed to when they were granted long distance approval. If the FCC determines that a BOC is not fulfilling those terms, the FCC is required to order corrections, impose penalties, or suspend or revoke approval. The independent telephone companies, or non-BOC providers of local service, are not subject to these restrictions and were not

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<sup>10</sup> However, the FCC, in a February 2002 decision, established a procedure whereby a BOC can request a limited modification of a LATA boundary to provide broadband services, particularly in unserved or underserved areas.



required to file for approval to carry telephone traffic regardless of whether it crosses LATA boundaries.<sup>11</sup>

## Open Access

Legislation introduced into previous Congresses sought to prohibit anticompetitive contracts and anticompetitive or discriminatory behavior by broadband access transport providers. The legislation would have had the effect of requiring cable companies who provide broadband access to give “open access” (also referred to as “forced access” by its opponents) to all Internet service providers. At issue is whether cable networks should be required to share their lines with, and give equal treatment to, rival ISPs who wish to sell their services to consumers.<sup>12</sup>

Open access has been debated on the local level, as cities, counties, and states have taken up the issue of whether to mandate open access requirements on local cable franchises. On June 22, 2000, the U.S. Court of Appeals for the Ninth Circuit ruled that high-speed Internet access via a cable modem is defined as a “telecommunications service,” and not subject to direct regulation by local franchising authorities. The debate thus moved to the federal level, where many interpret the Court’s decision as giving the FCC authority to regulate broadband cable services as a “telecommunications service.” On September 28, 2000, the FCC formally issued a Notice of Inquiry (NOI) which will explore whether or not the Commission should require access to cable and other high-speed systems by Internet Service Providers (ISPs).<sup>13</sup> On March 14, 2002, the FCC adopted a Declaratory Ruling which classified cable modem service as an “interstate information service,” subject to FCC jurisdiction and largely shielded from local regulation. However, on October 6, 2003, the 9th U.S. Appeals Court in San Francisco vacated the FCC’s Declaratory Ruling that cable modem service is an exclusively “interstate information service.” The FCC is expected to appeal this ruling. A Notice of Proposed Rulemaking will continue to examine cable modem service issues.

## Federal Assistance for Broadband Deployment

Laws passed by the 107<sup>th</sup> Congress, and legislation pending in the 108<sup>th</sup> Congress, would provide grants, loans, and tax credits for broadband deployment, particularly in rural and/or low income areas. In the 107<sup>th</sup> Congress, the Farm Security and Rural Investment Act of 2002 (P.L. 107-171) authorized the Secretary of Agriculture to make loans and loan guarantees to eligible entities for facilities and equipment providing broadband service in rural communities. Section 6103

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<sup>11</sup> For a more complete discussion of LATAs and BOC long distance entry see CRS Report RL30018, *Long Distance Telephony: Bell Operating Company Entry Into the Long-Distance Market*, by James R. Riehl.

<sup>12</sup> Cable companies have announced access agreements with unaffiliated ISPs either voluntarily (e.g. AT&T Broadband) or as part of merger approval conditions imposed by the FCC and FTC (e.g. AOL-Time Warner).

<sup>13</sup> See [<http://www.fcc.gov/Bureaus/Miscellaneous/Notices/2000/fcc00355.pdf>]

authorizes a total of \$100 million through FY2007 (\$20 million for each of fiscal years 2002 through 2005, and \$10 million for each of fiscal years 2006 and 2007).

In its FY2004 budget request, the Administration proposed canceling the mandatory \$20 million from the Commodity Credit Corporation (as provided in P.L. 107-171), while providing \$9.1 million in discretionary funding through the FY2004 appropriations process. The conference agreement on the FY2004 Consolidated Appropriations Act (H.R. 2673; H.Rept. 108-401) provides \$13.1 million in loan subsidies (which will support a loan level of \$602 million) and \$9 million for broadband grants.

In the 108<sup>th</sup> Congress, legislation has again been introduced to provide financial assistance to encourage broadband deployment (H.R. 138, H.R. 768, H.R. 769, H.R. 1396, H.R. 3089, S. 160, S. 305, S. 414, S. 905, S. 1637, S. 1796). In the Jobs and Growth Tax Relief Reconciliation Act of 2003 (H.R. 2/P.L. 108-27), the Senate inserted a provision allowing the expensing of broadband Internet access expenditures. However, this provision was not retained during the House/Senate Conference. The broadband expensing provision was subsequently attached to S. 1637, the Jumpstart Our Business Strength (JOBS) Act. For more information on federal assistance for broadband deployment, see CRS Report RL30719, *Broadband and the Digital Divide: Federal Assistance Programs*.

## Electronic Commerce<sup>14</sup>

### Background

The convergence of computer and telecommunications technologies has revolutionized how we get, store, retrieve, and share information. Many experts contend that this convergence has created the Information Economy, driven by the Internet, and fueled a surge in U.S. productivity and economic growth. Commercial transactions on the Internet, whether retail business-to-customer or business-to-business, are commonly called electronic commerce, or “e-commerce.”

Since the mid-1990s, commercial transactions on the Internet have grown substantially.<sup>15</sup> By 1996, Internet traffic, including e-commerce, was doubling every 100 days. By mid-1997, the U.S. Department of Commerce reported that just over 4 million people were using e-commerce; by the end of 1997, that figure had grown to over 10 million users. Business conducted over the Internet continues to grow, even with an economic slowdown and with many new “dot-com” businesses no

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<sup>14</sup> See also CRS Report RS20426, *Electronic Commerce: An Introduction*, by Glenn J. McLoughlin, which is updated more frequently than this report.

<sup>15</sup> For statistics and other data on e-commerce, see CRS Report RL30435, *Internet and E-Commerce Statistics: What They Mean and Where to Find Them On the Web*. Other sources include: [<http://www.idc.com>], [<http://www.abcnews.go.com>], [<http://www.forrester.com>], [<http://www.emarketer.com>], and [<http://www.cs.cmu.edu>]. It is important to note that some measurements of e-commerce, particularly that data reported in the media, have not been verified.

longer in existence. A January 2001 study by the Pew Internet and American Life Project found that overall, 29 million American shoppers made purchases on-line during the fourth quarter of 2001, spending an average of \$392, up from \$330 in the fourth quarter of 2000. A quarter of all Internet users did some shopping on the Internet this year, up from one-fifth of Internet users last year. Of those e-commerce shoppers, 58 percent were women; this is the first time that more women than men have been reported using the Internet for retail e-commerce.

Internationally, there are issues regarding Internet use and e-commerce growth. The United States and Canada represent the largest percentage of Internet users, at 56.6%. Europe follows with 23.4%. At the end of 2000, of approximately 200 million Internet users worldwide, only 3.1% are in Latin America, 0.5% are in the Middle East, and 0.6% are in Africa. The Asia Pacific region has 15.8% of all Internet users; but its rate of growth of Internet use is nearly twice as fast as the United States and Canada. The U.S.-Canada share of Internet use may decline to 36% by 2005.

## **The E-Commerce Industry**

Even with some concern about accuracy and timeliness of e-commerce statistics, reliable industry sources report huge jumps in e-commerce transactions, particularly during fourth quarter holiday shopping. But long-term, industry growth has not been limited to just holiday shopping. According to a study undertaken by the University of Texas, the Internet portion of the U.S. economy grew at a compounded rate of 174% from 1995-1998 (the U.S. gross domestic product grew at 2.8% during the same period), and e-commerce accounted for one-third of that growth. Increasingly, many firms use “vortals” — vertically integrated portals or gateways that advertise or provide information on a specific industry or special interest. As a portion of e-commerce business, vortals provide targeted advertising for e-commerce transactions, and may grow from 35% of all e-commerce advertising to 57% by 2004. However, not all firms providing these services are profitable; in fact, most have yet to turn a profit.

One of the fastest growing sectors of e-commerce is business-to-business transactions — what is often called “B2B.” This sector continues to expand, even in the current economic downturn. The Forrester Group, a private sector consulting firm, estimates that by the end of 2003, that sector of the U.S. economy will reach \$1.5 trillion, up from nearly \$200 billion in 2000. Business-to-business transactions between small and medium sized businesses and their suppliers is rapidly growing, as many of these firms begin to use Internet connections for supply chain management, after-sales support, and payments.

## **Issues for the Bush Administration and Congress**

Since the mid-1990s, Congress also has taken an active interest in e-commerce issues. Among the many issues, Congress may revisit policies that establish federal encryption procedures and provide electronic security in the wake of September 11, 2001. The 107<sup>th</sup> Congress passed a law that extends the moratorium on domestic e-commerce taxation to November 2003 (P.L. 107-75). In addition, congressional

policymakers are looking at the European Union (EU) and WTO policies and regulations in e-commerce.

**Protection and Security Issues.** There are a variety of protection and security issues that affect e-commerce growth and development. *Encryption* is the encoding of electronic messages to transfer important information and data, in which “keys” are needed to unlock or decode the message. Encryption is an important element of e-commerce security, with the issue of who holds the keys at the core of the debate. In September 1999, United States announced plans to further relax its encryption export policy by allowing export of unlimited key length encryption products, with some exceptions. It also advocated reduced reporting requirements for those firms that export encrypted products. The rules for implementing this policy were issued in September 2000 by the Bureau of Export Administration in the Department of Commerce. However, the events of September 11, 2001 have caused many in industry and government to review this policy — and the USA PATRIOT ACT of 2001 (P.L. 107-56) has given lawmakers greater authority to gain access to electronic financial transactions (for example, to ferret out illegal money laundering). Consumers and civil liberties activists are very concerned about this development and have said they will monitor this law closely.

**E-Commerce Taxation.** Congress passed the Internet Tax Freedom Act on October 21, 1998, as Titles XI and XII of the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999 (P.L. 105-277, 112 Stat 2681). Among its provisions, the Act imposed a 3-year moratorium on the ability of state and local governments to levy certain taxes on the Internet; it prohibited taxes on Internet access, unless such a tax was generally imposed and actually enforced prior to October 1, 1998; it created an Advisory Commission on Electronic Commerce (ACEC), which may make recommendations to Congress on e-commerce taxation in the United States and abroad; and it opposed regulatory, tariff, and tax barriers to international e-commerce and asks the President to pursue international agreements to ban them.) The ACEC made its policy recommendations, after much debate and some divisiveness, to Congress on April 3, 2000. The ACEC called for, among its recommendations, extending the domestic Internet tax moratorium for five more years, through 2006; prohibiting the taxation of digitized goods over the Internet, regardless of national source; and a continued moratorium on any international tariffs on electronic transmissions over the Internet.

Congressional interest in Internet taxation has weighed concerns about impeding the growth of e-commerce by taxing revenues; enforcement and compliance of an Internet tax; and policies outside of the United States which do not impose an Internet tax. H.R. 1552 (Cox), the Internet Tax Nondiscrimination Act, extends the Internet tax moratorium through November 1, 2003. It was passed by both houses of Congress and signed into law on November 28, 2001 (P.L. 107-75); see CRS Report RS20980, *Internet Tax Bills in the 107<sup>th</sup> Congress: A Brief Comparison*, for more information.

**The EU and WTO.** While much of the debate on the government’s role in e-commerce has focused on domestic issues in the United States, two important players — the EU and the WTO — will likely have an important impact on global e-commerce policy development. The EU is very active in e-commerce issues. In

some areas there is agreement with U.S. policies, and in some areas there are still tensions. While the EU as an entity represents a sizable portion of global Internet commerce, across national boundaries, Internet use and e-commerce potential varies widely. Supporters state that e-commerce policy should not be set by EU bureaucrats in Brussels. Therefore, the EU has approached e-commerce with what one observer has called a “light regulatory touch.” Among contentious issues, the EU has supported the temporary moratorium on global e-commerce taxes, and supports making the moratorium permanent. But the EU has taken a different approach than U.S. policy by treating electronic transmissions (including those that deliver electronic goods such as software) as services. This position would allow EU countries more flexibility in imposing trade restrictions, and would allow treating electronic transmissions — including e-commerce — as services, making them subject to EU value-added duties. The EU also has taken a different approach to data protection and privacy, key components for strengthening e-commerce security and maintaining consumer confidence. The EU actions prohibit the transfer of data in and out of the EU, unless the outside country provides sufficient privacy safeguards. The U.S. position is to permit industry self-regulation of data protection and privacy safeguards. (For more information on the European data directive, see CRS Report RL30784, *Internet Privacy: An Analysis of Technology and Policy Issues*.)

The WTO has presented another set of challenges to U.S. policymakers. Among the issues considered by the WTO has been an agreement to reduce trade barriers for information technology goods and services. This issue was considered vital to the development of telecommunications infrastructure — including the Internet — among developing nations. A majority of participants signed an agreement to reduce these barriers. The WTO also has developed a work program on electronic commerce and to report on the progress of the work program, with recommendations, as well as continuing the practice of not imposing tariffs on electronic transmission. Future WTO meetings may address any additional e-commerce issues raised by WTO working groups on goods, services, intellectual property and economic development; or address related e-commerce issues raised at previous ministerial conferences in areas such as privacy, security, taxation, and infrastructure. (See CRS Report RS20319, *Telecommunications Services Trade and the WTO Agreement* and CRS Report RS20387, *The World Trade Organization (WTO) Seattle Ministerial Conference*).

**The 108th Congress.** The 108<sup>th</sup> Congress is considering several bills that would extend the Internet tax moratorium. H.R. 49 (Rep. Cox) and S. 52 (Sen. Wyden) would both permanently extend the moratorium enacted by the Internet Tax Freedom Act. S. 150 (Sen. Allen) would also permanently extend the moratorium enacted by the Internet Tax Freedom Act, as well as prohibit other multiple and disciplinary taxes on e-commerce. All of these bills have been referred to committees in the House and Senate. (See CRS Report RL31177, *Extending the Internet Tax Moratorium and Related Issues*, by Nonna K. Noto).

## Unsolicited Commercial Electronic Mail ("Junk E-Mail" or "Spam")<sup>16</sup>

One aspect of increased use of the Internet for electronic mail (e-mail) has been the advent of unsolicited advertising, also called "unsolicited commercial e-mail (UCE)," "unsolicited bulk e-mail," "junk e-mail," or "spam." Complaints focus on the fact that some spam contains or has links to pornography, that much of it is fraudulent, and the volume of spam is steadily increasing. In April 2003, the Federal Trade Commission (FTC) reported that of a random survey of 1,000 pieces of spam, 18% concerned "adult" offers (pornography, dating services, etc.) and 66% contained indications of falsity in "from" lines, "subject" lines, or message text.<sup>17</sup> According to Brightmail [<http://www.brightmail.com>], a company that sells anti-spam software, the volume of spam rose from 8% of all e-mail in January 2001 to 45% in January 2003. Brightmail forecasts that it will reach 50% by September 2003.

Opponents of junk e-mail argue that not only is it annoying and an invasion of privacy (see CRS Report RL31408 for more on Internet privacy), but that its cost is borne by consumers and Internet Service Providers (ISPs), not the marketers. Consumers reportedly are charged higher fees by ISPs that must invest resources to upgrade equipment to manage the high volume of e-mail, deal with customer complaints, and mount legal challenges to junk e-mailers. Businesses may incur costs due to lost productivity, or investing in upgraded equipment or anti-spam software. The Ferris Research Group [<http://www.ferris.com>], which offers consulting services on managing spam, estimates that spam will cost U.S. organizations over \$10 billion in 2003.

Proponents of unsolicited commercial e-mail argue that it is a valid method of advertising and is protected by the First Amendment. The Direct Marketing Association (DMA), for example, argues that instead of banning unsolicited commercial e-mail, individuals should be given the opportunity to notify the sender of the message that they want to be removed from its mailing list — or "opt-out." The DMA considers spam to be only fraudulent commercial e-mail, not unsolicited commercial e-mail, and that legislation was needed to curb spam and "preserve the promise of e-mail as the next great marketing channel" [<http://www.the-dma.org/cgi/disppressrelease?article=354>].

To date, the issue of restraining junk e-mail has been fought primarily over the Internet or in the courts. Some ISPs will return junk e-mail to its origin, and groups opposed to junk e-mail will send blasts of e-mail to a mass e-mail company, disrupting the company's computer systems. Filtering software also is available to screen out e-mail based on keywords or return addresses. Knowing this, mass e-

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<sup>16</sup> See also CRS Report RL31953, "*Junk E-Mail*": *An Overview of Issues and Legislation Concerning Unsolicited Commercial Electronic Mail ("Spam")*, by Marcia S. Smith, which is updated more frequently than this report.

<sup>17</sup> Federal Trade Commission. *False Claims in Spam: A Report by the FTC's Division of Marketing Practices*. April 30, 2003. P. 10. Available at the FTC's spam Web site: [<http://www.ftc.gov/bcp/conline/edcams/spam/index.html>].

mailers may avoid certain keywords or continually change addresses to foil the software, however. In the courts, ISPs with unhappy customers and businesses that believe their reputations have been tarnished by misrepresentations in junk e-mail have brought suit against mass e-mailers.

Congress has debated spam legislation since the 105<sup>th</sup> Congress, and 36 states enacted their own spam laws [<http://www.spamlaws.com>]. In 2003, Congress passed a federal anti-spam law, the CAN-SPAM Act (P.L. 108-187). President Bush signed it into law on December 16, 2003. The CAN-SPAM Act preempts state laws that specifically address spam but not state laws that are not specific to e-mail, such as trespass, contract, or tort law, or other state laws to the extent they relate to fraud or computer crime. It does not ban unsolicited commercial e-mail. Rather, it allows marketers to send commercial e-mail as long as it conforms with the law, such as including a legitimate opportunity for consumers to “opt-out” of receiving future commercial e-mails from that sender. It does not require a centralized “do not e-mail” registry to be created by the Federal Trade Commission (FTC), similar to the National Do Not Call registry for telemarketing. The bill requires only that the FTC develop a plan and timetable for establishing a “do not e-mail” registry and to inform Congress of any concerns it has with regard to establishing it. FTC Chairman Timothy Muris has specifically warned that he does not believe a “do not e-mail” registry would be enforceable or noticeably reduce spam. Mr. Muris and others caution that consumers should not expect any legislation to be a “silver bullet” for solving the spam problem; a combination of consumer education, technological advancements, and legislation is required.

The extent to which P.L. 108-187 reduces “spam” may be debated if for no other reason than there are various definitions of that term. Proponents of the legislation argue that consumers are most irritated by fraudulent e-mail and that the bill should reduce the volume of such e-mail because of the civil and criminal penalties included therein. Opponents counter that consumers object to unsolicited commercial e-mail, and since the bill legitimizes commercial e-mail (as long as it conforms with the law’s provisions), consumers actually may receive more, not fewer, unsolicited commercial e-mail messages. Thus, whether “spam” is reduced depends in part on whether it is defined as only fraudulent commercial e-mail or as all unsolicited commercial e-mail. Some critics of the law want legislation that would require consumers to give their express consent — to “opt-in” — before marketers could send e-mails. California passed such a law, which was to become effective January 1, 2004, but the CAN-SPAM Act preempts it. The European Union adopted an opt-in approach for unsolicited commercial e-mail, unless there is an existing customer relationship, that went into effect on October 31, 2003. (Individual EU countries must pass their own legislation to implement the EU directive; not all have done so yet.) The CAN-SPAM Act is discussed in more detail in CRS Report RL31953.

Although consumers are most familiar with spam on their personal computers, it also is becoming an issue in text messaging on wireless telephones, pagers, and personal digital assistants (PDAs). The CAN-SPAM Act includes a provision requiring the FTC to establish regulations to protect wireless consumers from spam. CRS Report RL31636 discusses wireless privacy and wireless spam in more detail.

## Internet Domain Names<sup>18</sup>

The 108<sup>th</sup> Congress continues to monitor issues related to the Internet domain name system (DNS). Internet domain names were created to provide users with a simple location name for computers on the Internet, rather than using the more complex, unique Internet Protocol (IP) number that designates their specific location. As the Internet has grown, the method for allocating and designating domain names has become increasingly controversial.

### Recent History

The Internet originated with research funding provided by the Department of Defense Advanced Research Projects Agency (DARPA) to establish a military network. As its use expanded, a civilian segment evolved with support from the National Science Foundation (NSF) and other science agencies. No formal statutory authorities or international agreements govern the management and operation of the Internet and the DNS. Prior to 1993, NSF was responsible for registration of nonmilitary generic Top Level Domains (gTLDs) such as .com, .org, and .net. In 1993, the NSF entered into a 5-year cooperative agreement with Network Solutions, Inc. (NSI) to operate Internet domain name registration services. With the cooperative agreement between NSI and NSF due to expire in 1998, the Clinton Administration, through the Department of Commerce (DOC), began exploring ways to transfer administration of the DNS to the private sector.

In the wake of much discussion among Internet stakeholders, and after extensive public comment on a previous proposal, the DOC, on June 5, 1998, issued a final statement of policy, *Management of Internet Names and Addresses* (also known as the “White Paper”). The White Paper stated that the U.S. government was prepared to recognize and enter into agreement with “a new not-for-profit corporation formed by private sector Internet stakeholders to administer policy for the Internet name and address system.” On October 2, 1998, the DOC accepted a proposal for an Internet Corporation for Assigned Names and Numbers (ICANN). On November 25, 1998, DOC and ICANN signed an official Memorandum of Understanding (MOU), whereby DOC and ICANN agreed to jointly design, develop, and test the mechanisms, methods, and procedures necessary to transition management responsibility for DNS functions to a private-sector not-for-profit entity.

The White Paper also signaled DOC’s intention to ramp down the government’s Cooperative Agreement with NSI, with the objective of introducing competition into the domain name space while maintaining stability and ensuring an orderly transition. During this transition period, government obligations will be terminated as DNS responsibilities are transferred to ICANN. Specifically, NSI committed to a timetable for development of a Shared Registration System that permits multiple registrars to provide registration services within the .com, .net., and .org gTLDs. NSI (now VersiSign) will continue to administer the root server system until receiving further instruction from the government.

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<sup>18</sup> See also CRS Report 97-868, *Internet Domain Names: Background and Policy Issues*, by Lennard G. Kruger, which is updated more frequently than this report.



Significant disagreements between NSI on the one hand, and ICANN and DOC on the other, arose over how a successful and equitable transition would be made from NSI's previous status as exclusive registrar of .com, org. and net. domain names, to a system that allows multiple and competing registrars. On November 10, 1999, ICANN, NSI, and DOC formally signed an agreement which provided that NSI (now VeriSign) was required to sell its registrar operation by May 10, 2001 in order to retain control of the dot-com registry until 2007. In April 2001, arguing that the registrar business is now highly competitive, VeriSign reached a new agreement with ICANN whereby its registry and registrar businesses would not have to be separated. With DOC approval, ICANN and VeriSign signed the formal agreement on May 25, 2001. The agreement provides that VeriSign will continue to operate the .org registry until 2002; the .net registry until June 30, 2005 (which prior to that time will be opened for recompetition unless market measurements indicate that an earlier expiration date is necessary for competitive reasons); and the .com registry until at least the expiration date of the current agreement in 2007, and possibly beyond. VeriSign agreed to enhanced measures (including annual audits arranged by ICANN and made available to the U.S. government) to ensure that its registry-operation unit gives equal treatment to all domain name registrars, including VeriSign's registrar business.

On September 17, 2003, ICANN and the Department of Commerce agreed to extend their MOU until September 30, 2006. The MOU specifies transition tasks which ICANN has agreed to address. ICANN will implement an objective process for selecting new Top Level Domains; implement an effective strategy for multi-lingual communications and international outreach; and develop a contingency plan, consistent with the international nature of the internet, to ensure continuity of operations in the event of a severe disruption of operations.

## **Issues**

The Department of Commerce remains responsible for monitoring the extent to which ICANN satisfies the principles of the White Paper as it makes critical DNS decisions. Congress remains interested in how the Administration manages and oversees the transition to private sector ownership of the DNS. A February 2002 proposal by ICANN's President to radically restructure and reform ICANN raised concerns in Congress over the future of ICANN. An oversight hearing held by the Senate Commerce, Science and Transportation Committee on June 12, 2002 focused on ICANN reform and the role of the DOC in ensuring that reform. A June 20, 2002 bipartisan letter from the House Energy and Commerce Committee to the Secretary of Commerce called for only a short term renewal of the DOC-ICANN Memorandum of Understanding until ICANN institutes reforms that ensure greater accountability and transparency. A letter from the Senate Republican High Tech Task Force also urged heightened DOC scrutiny of the DOC-ICANN MOU and cited concerns that ICANN has become an unaccountable regulatory body. On June 19, 2003, Representative Baird introduced the Fair, Transparent, and Competitive Internet Naming Act of 2003 (H.R. 2521), which requires the General Accounting Office to conduct a study of ICANN's business practices, procedures, accountability, and administration.

**Top Level Domains.** At its July 16, 2000 meeting in Yokohama, the ICANN Board of Directors adopted a policy for the introduction of new top-level domains (TLDs), which could expand the number of domain names available for registration by the public. After considering a total of 47 applications, the ICANN Board selected seven companies or organizations each to operate a registry for one of seven new TLDs, as follows: .biz, .aero, .name, .pro, .museum, .info, and .coop. ICANN's selection of new TLDs has proven controversial. Critics assert that the TLD selection process was inappropriately subjective, insufficiently transparent, and lacking in adequate due process procedures. In its defense, ICANN argues that the selection process was sufficient to meet its goal of expeditiously selecting a limited number of diverse TLDs, and that these will serve as an initial and experimental "proof of concept" phase in order to ensure that new TLDs can be introduced in the future without undermining the stability of the Internet. Meanwhile, ICANN considered eleven applications for operating .org after the current agreement with VeriSign expires on December 31, 2002. On October 14, 2002, the ICANN Board selected the Internet Society's Public Interest Registry as .org operator. Meanwhile, on December 15, 2003, ICANN formally invited applications from all parties for new TLDs. The application period closes on March 15.

**Protecting Children on the Internet.** In the 107<sup>th</sup> Congress, legislation sought to create a "kids-friendly top level domain name" that would contain only age-appropriate content. The Dot Kids Implementation and Efficiency Act of 2002 was signed into law on December 4, 2002 (P.L. 107-317) and authorizes the National Telecommunications and Information Administration (NTIA) to require the .us registry operator (currently NeuStar) to establish, operate, and maintain a second level domain within the .us TLD that is restricted to material suitable for minors. (For more information on the Dot Kids Act, and other legislative attempts to protect children from unsuitable material on the Internet, see CRS Report RS21328).

In the 108<sup>th</sup> Congress, P.L. 108-21/S. 151 (PROTECT Act), contains a provision (Sec. 108: Misleading Domain Names on the Internet) which would make it a punishable crime to knowingly use a misleading domain name with the intent to deceive a person into viewing obscenity on the Internet. Increased penalties are provided for deceiving minors into viewing harmful material.

**Governance.** On June 22, 2002, ICANN released a "Blueprint for Reform," which calls for a significant restructuring of ICANN. Specifically, the Board of Directors would be composed of fifteen members: the ICANN President, eight members appointed by a nominating committee, and six selected by three Supporting Organizations. The reform blueprint also recommends that ICANN collect a fee of 25 cents per registered domain name. New bylaws based on the reform proposal were formally adopted by the ICANN Board at the October 2002 Board meeting in Shanghai. Some in the Internet community have spoken against the ICANN reforms, asserting that its elimination of elected At-Large board members precludes effective representation of unaffiliated Internet users. In a related development, the United Nations, at the December 2003 World Summit on the Information Society, debated and agreed to study the issue of whether national governments should run the domain name system instead of ICANN. The United Nations will revisit the issue in 2005, after its study is complete.

**Trademark Disputes.** The increase in conflicts over property rights to certain trademarked names has resulted in a number of lawsuits. The White Paper called upon the World Intellectual Property Organization (WIPO) to develop a set of recommendations for trademark/domain name dispute resolutions, and to submit those recommendations to ICANN. At ICANN's August 1999 meeting in Santiago, the board of directors adopted a dispute resolution policy to be applied uniformly by all ICANN-accredited registrars. Under this policy, registrars receiving complaints will take no action until receiving instructions from the domain-name holder or an order of a court or arbitrator. An exception is made for "abusive registrations" (i.e. cybersquatting and cyberpiracy), whereby a special administrative procedure (conducted largely online by a neutral panel, lasting 45 days or less, and costing about \$1000) will resolve the dispute. Implementation of ICANN's Domain Name Dispute Resolution Policy commenced on December 9, 1999.

WIPO initiated a second study which produced recommendations on how to resolve disputes over bad faith, abusive, misleading or unfair use of other types of domain names such as personal names, geographical terms, names of international organizations, and others. WIPO released its second report on September 3, 2001, recommending that generic drug names be canceled upon complaint and that international intergovernmental organization names be subject to a dispute resolution process. WIPO did not recommend new rules regarding personal, geographical, or trade names.

Meanwhile, the 106<sup>th</sup> Congress took action, passing the Anticybersquatting Consumer Protection Act (incorporated into P.L. 106-113, the FY2000 Consolidated Appropriations Act). The Act gives courts the authority to order the forfeiture, cancellation, and/or transfer of domain names registered in "bad faith" that are identical or similar to trademarks, and provides for statutory civil damages of at least \$1,000, but not more than \$100,000, per domain name identifier.

## **Government Information Technology Management<sup>19</sup>**

The evolving role of the Internet in the political economy of the United States continues to attract increased congressional attention to government information technology management issues. Interest has been further heightened by national information infrastructure development efforts, e-government projects, and homeland security initiatives. Although wide-ranging, government information technology management issues can be characterized by three major themes: infrastructure development, resource management, and the provision of online services (e-government). As the emphasis of these efforts shifts from initial planning and development to implementation and evaluation, it is anticipated that there will be an increased focus on oversight during the 108<sup>th</sup> Congress.

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<sup>19</sup> See also CRS Report RL30661, *Government Information Technology Management: Past and Future Issues (the Clinger-Cohen Act)*, by Jeffrey W. Seifert.

## Internet Infrastructure and National Policy

Since 1995, when the Internet first came into prominence, the question of who should maintain and expand the U.S. information infrastructure has been raised by many policymakers. While the legislative and executive branches have had differences in the size and scope of specific initiatives and programs, both have generally supported efforts to enhance and develop non-commercial use of the Internet and information infrastructure. In its FY2002 budget request, the Bush Administration expressed continued support for federal efforts to support Internet research, technologies, and applications at the federal mission agencies, and the 108<sup>th</sup> Congress supported those goals in the FY2003 Consolidated Appropriations Resolution (P.L. 108-7).

At the Department of Commerce, the National Telecommunications and Information Administration (NTIA) provides guidelines and recommendations for domestic and global communications policy, manages the use of the electromagnetic spectrum for public broadcast, and awards grants to industry-public sector partnerships for research on new telecommunications applications and development of information infrastructure. The Technology Opportunity Program (TOP) provides matching merit-based grants to areas either underserved or not served at all by the Internet. The NTIA budget also includes the continued development and construction of public broadcast facilities, including funding for transition of broadcasting facilities to digital transmissions. Some policymakers support a stronger role for NTIA to close the divide between the nation's digital "haves" and "have-nots." They contend that NTIA's TOP grants and public telecommunications and facilities planning programs would be appropriate avenues for helping bridge this divide. For FY2003, Congress approved an NTIA budget of \$73.7 million, with \$15.5 million for TOP, \$43.6 million for public telecommunications facilities, and \$14.6 million for salaries. For the FY2004 budget, the Bush Administration has requested that both the TOP and the public telecommunications and facilities planning programs be zeroed out. Congress has supported these initiatives in the past; however, since the final FY2004 Department of Commerce appropriations bill has not been passed by Congress, it is still unclear at what levels these programs will be funded, if at all.

**Information Technology R&D.** At the federal level, almost all of the funding for information science and technology and Internet development is part of a single government-wide initiative. This is the Networking and Information Technology Research and Development (NITRD) initiative, which, before 2002, was called the Information Technology Research and Development (in turn, this was the successor to the High Performance Computing and Communications Initiative of 1991). The NITRD initiative is an interagency effort that is intended to coordinate key advances in information technology research and leverage funding into broader advances in computing and networking. Under the NITRD initiative, the mission agencies receive support for high-performance computing science and technology, information technology software and hardware, networks and Internet-driven applications, and education and training for personnel. For FY2003, the agencies received \$1.9 billion for NITRD activities, with NSF receiving about a third of this budget. Other agencies receiving substantial funding under this initiative are the Department of Defense, the Department of Health and Human Services, the Department of Energy, the Department of Commerce, the National Aeronautics and

Space Administration ( NASA), and the Environmental Protection Agency. For FY2004, the Bush Administration has proposed a 6% increase in the NITRD budget; however, NASA's funding under this proposal would be reduced by 8%. However, until the full FY2004 appropriations is passed by Congress, funding for this initiative will not be completely known.

## **Provision of Online Services (E-Government)<sup>20</sup>**

Electronic government (e-government) is an evolving concept, meaning different things to different people. However, it has significant relevance to four important areas of governance: (1) delivery of services (government-to-citizen, or G2C); (2) providing information (also G2C); (3) facilitating the procurement of goods and services (government-to-business, or G2B, and business-to-government, or B2G); and (4) facilitating efficient exchanges within and between agencies (government-to-government, or G2G). For policymakers concerned about e-government, a central area of concern is developing a comprehensive but flexible strategy to coordinate the disparate e-government initiatives across the federal government.

The movement to put government online raises as many issues as it provides new opportunities. Some of these issues include, but are not limited to: security, privacy, management of governmental technology resources, accessibility of government services (including "digital divide" concerns as a result of a lack of skills or access to computers, discussed earlier), and preservation of public information (maintaining comparable freedom of information procedures for digital documents as exist for paper documents). Although these issues are neither new nor unique to e-government, they do present the challenge of performing governance functions online without sacrificing the accountability of or public access to government that citizens have grown to expect. Some industry groups have also raised concerns about the U.S. government becoming a publicly funded market competitor through the provision of fee-for-services such as the U.S. Postal Service's eBillPay, which allows consumers to schedule and make payments to creditors online [<http://www.usps.com/ebpp/welcome.htm>].

E-government initiatives vary significantly in their breadth and depth from state to state and agency to agency. So far, states such as California, Minnesota, and Utah have taken the lead in developing e-government initiatives. However, there is rapidly increasing interest and activity at the federal level as well. Perhaps the most well-known federal example is the FirstGov Web site [<http://www.firstgov.gov>]. FirstGov is a Web portal designed to serve as a single locus point for finding federal government information on the Internet. The FirstGov site also provides access to a variety of state and local government resources. Another example is the Social Security Administration (SSA), which has also launched a number of e-government

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<sup>20</sup> See also CRS Report RL30745, *Electronic Government: A Conceptual Overview*, by Harold C. Relyea, CRS Report RL31088, *Electronic Government: Major Proposals and Initiatives*, by Harold C. Relyea, and CRS Report RL31057, *A Primer on E-Government: Sectors, Stages, Opportunities, and Challenges of Online Governance*, by Jeffrey W. Seifert, which are updated more frequently than this report.

initiatives including the option to apply for retirement insurance benefits online, request a Social Security Statement, and the ability to request a replacement Medicare card. At the Department of the Treasury, the U.S. Mint is using interactive Internet sales to expand its marketing efforts and attract younger people into coin collecting. Similarly, the General Services Administration (GSA) created a Web site, FedBizOpps [<http://www.fedbizopps.gov>] to facilitate federal business opportunities online.

Pursuant to the July 18, 2001 OMB Memorandum M-01-28, an E-Government Task Force was established to create a strategy for achieving the Bush Administration's e-government goals.<sup>21</sup> In doing so, the Task Force identified 23 interagency initiatives designed to better integrate agency operations and information technology investments. These initiatives, sometimes referred to as the Quicksilver projects, are grouped into five categories; government-to-citizen, government-to-government, government-to-business, internal effectiveness and efficiency, and addressing barriers to e-government success. Examples of these initiatives include an e-authentication project led by the General Services Administration (GSA) to increase the use of digital signatures, the eligibility assistance online project (also referred to as GovBenefits.gov) led by the Department of Labor to create a common access point for information regarding government benefits available to citizens, and the Small Business Administration's One-Stop Business Compliance project, being designed to help businesses navigate legal and regulatory requirements. A 24<sup>th</sup> initiative, a government wide payroll process project, was subsequently added by the President's Management Council. In 2002 the e-Clearance initiative, originally included as part of the Enterprise Human Resources Integration project, was established as a separate project, for a total of 25 initiatives. As the initial round of e-government projects continue to develop, OMB has stated it plans to focus attention on initiatives that consolidate information technology systems in six functional areas, or lines of business. These include data and statistics, human resources, criminal investigations, financial management, public health monitoring, and monetary benefits.

On December 17, 2002, President Bush signed the E-Government Act of 2002 (P.L. 107-347) into law. The law contains a variety of provisions related to federal government information technology management, information security, and the provision of services and information electronically. One of the most recognized provisions involves the creation of an Office of Electronic Government within OMB. The Office is headed by an Administrator, who is responsible for carrying out a variety of information resources management (IRM) functions, as well as administering the interagency E-Government Fund provided for by the law.

For the 108<sup>th</sup> Congress, oversight of the Quicksilver projects, the implementation of the E-Government Act, and the development of a second group of e-government projects are anticipated to be significant issues. In addition, the movement to expand the presence of government online raises as many issues as it provides new opportunities. Some of these issues concern: security, privacy, management of governmental technology resources, accessibility of government

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<sup>21</sup> See [<http://www.whitehouse.gov/omb/inforeg/egovstrategy.pdf>].

services (including “digital divide” concerns as a result of a lack of skills or access to computers, or disabilities), and preservation of public information (maintaining comparable freedom of information procedures for digital documents as exist for paper documents). Although these issues are neither new nor unique to e-government, they do present the challenge of performing governance functions online without sacrificing the accountability of or public access to government that citizens have grown to expect.

## Open Source Software<sup>22</sup>

The use of open source software by the federal government has been gaining attention as organizations continue to search for opportunities to enhance their information technology (IT) operations while containing costs. For the federal government and Congress, the debate over the use of open source software intersects several other issues, including, but not limited to, the development of homeland security and e-government initiatives, improving government information technology management practices, strengthening computer security, and protecting intellectual property rights. In the 108<sup>th</sup> Congress, the debate over open source software is anticipated to revolve primarily around information security and intellectual property rights. However, issues related to cost and quality are likely to be raised as well.

*Open source* software refers to a computer program whose source code, or programming instructions, is made available to the general public to be improved or modified as the user wishes. Some examples of open source software include the Linux operating system and Apache Web server software. In contrast, *closed source*, or proprietary, programs are those whose source code is not made available and can only be altered by the software manufacturer. In the case of closed source software, updates to a program are usually distributed in the form of a patch or as a new version of the program that the user can install but not alter. Some examples of closed source software include Microsoft Word and Corel WordPerfect. The majority of software products most commonly used, such as operating systems, word processing programs, and databases, are closed source programs.

For proponents, open source software is often viewed as a means to reduce an organization’s dependence on the software products of a few companies while possibly improving the security and stability of one’s computing infrastructure. For critics, open source software is often viewed as a threat to intellectual property rights with unproven cost and quality benefits. So far there appear to be no systematic analyses available that have conclusively compared closed source to open source software on the issue of security. In practice, computer security is highly dependent on how an application is configured, maintained, and monitored. Similarly, the costs of implementing an open source solution are dependent upon factors such as the cost of acquiring the hardware/software, investments in training for IT personnel and end users, maintenance and support costs, and the resources required to convert data and applications to work in the new computing environment. Consequently, some

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<sup>22</sup> See also CRS Report RL31627, *Computer Software and Open Source Issues: A Primer*, by Jeffrey W. Seifert, which is updated more frequently than this report.

computer experts suggest that it is not possible to conclude that either open source or closed source software is inherently more secure or more cost efficient.

The growing emphasis on improved information security and critical infrastructure protection overall, will likely be an influential factor in future decisions to implement open source solutions. The rapidly changing computer environment may also foster the use of a combination of open source and closed source applications, rather than creating a need to choose one option at the exclusion of another.



## Appendix A: Pending Legislation

### Internet Privacy

- H.R. 69, Frelinghuysen, Online Privacy Protection Act, 1/7/03 (Energy & Commerce)
- H.R. 1636, Stearns, Consumer Privacy Protection Act, 4/3/03 (Energy & Commerce, International Relations)
- H.R. 2929, Bono, Safeguard Against Privacy Invasions Act, 7/25/03 (Energy & Commerce)
- S. 745, Feinstein, Privacy Act, 3/31/03 (Judiciary)
- S. 1350, Feinstein, Notification of Risk to Personal Data Act, 6/26/03 (Judiciary)
- S. 1695, Leahy, PATRIOT Oversight Restoration Act, 10/1/03 (Judiciary)
- S. 1709, Craig, Security and Freedom Ensured (SAFE) Act, 10/02/03 (Judiciary)

### Computer Security

- H.R. 1636, Stearns, Consumer Privacy Protection Act, 4/3/03 (Energy & Commerce, International Relations)
- H.R. 3159, Waxman, Government Network Security Act, 9/24/03 (Government Reform)
- H.R. 3233, Gutierrez, Identity Theft and Credit Restoration Act, 10/2/03 (Financial Services)
- S. 187, Edwards, National Cyber Security Leadership Act of 2003 (Governmental Affairs)
- S. 779, Jeffords, Wasterwater Treatment Works Security and Safety Act, 4/3/03 (Environment & Public Works)
- S. 1039, Inhofe, Wastewater Treatment Works Security Act, 5/12/03 (Environment & Public Works)
- S. 1633, Corzine, Identity Theft Notification and Credit Restoration Act, 9/17/03 (Banking, Housing, & Urban Affairs)

### Broadband Internet Access

- H.R. 49, Cox, To Permanently Extend the Moratorium Enacted by the Internet Tax Freedom Act, 1/7/03 (Judiciary) H.R. 138, McHugh, Rural America Digital Accessibility Act, 1/7/03 (Energy & Commerce, Ways & Means, and Science)
- H.R. 340, Issa, Jumpstart Broadband Act, 1/27/03 (Energy & Commerce)
- H.R. 363, Honda, Jumpstart Broadband Act, 1/27/03 (Energy & Commerce)
- H.R. 768, English, Amends the Internal Revenue Code of 1988 to provide a broadband Internet access tax credit, 2/13/03 (Ways & Means)
- H.R. 769, English, Amends the Internal Revenue Code of 1986 to allow the expensing of broadband Internet access expenditures, 2/13/03 (Ways & Means)
- H.R. 1396, Markey, Spectrum Commons and Digital Dividend Act of 2003, 3/20/03 (Energy & Commerce)
- H.R. 3089, Andrews, Greater Access to E-Governance Act, 9/16/03 (Energy & Commerce)

- S. 159, Boxer, Jumpstart Broadband Act, 1/14/03 (Commerce, Science & Transportation)
- S. 160, Burns, Amends the Internal Revenue Code of 1986 to allow the expensing of broadband Internet access expenditures, 1/14/03 (Finance)
- S. 305, Kerry, Amends the Internal Revenue Code of 1986 to include in the criteria for selecting any project for the low-income housing credit whether such project has high-speed Internet infrastructure, 2/5/03 (Finance)
- S. 414, Daschle, Economic Recovery Act of 2003, 2/14/03, (Senate Leg. Calendar)
- S. 905, Rockefeller, amends the Internal Revenue Code of 1986 to provide a broadband Internet access tax credit, 4/11/03 (Finance)
  
- S. 1637, Frist, Jumpstart Our Business Strength Act, 9/18/03 (Finance)
- S. 1796, Coleman, Rural Renaissance Act, 10/29/03 (Finance)

## **E-Commerce**

- H.R. 49, Cox, To Permanently Extend the Moratorium Enacted by the Internet Tax Freedom Act, 1/7/03 (Judiciary)
  
- S. 52, Wyden, To Permanently Extend the Moratorium Enacted by the Internet Tax Freedom Act, 1/17/03 (Commerce, Science, and Transportation)
- S. 150, Allen, To Make Permanent the Moratorium on Taxes on Internet Access and Multiple and Disciplinary Taxes on Electronic Commerce Imposed by the Internet Tax Freedom Act, 1/13/03 (Commerce, Science, and Transportation)

## **Internet Domain Names**

- H.R. 939, Pence, Truth in Domain Names Act, 2/26/03 (Judiciary)
- H.R. 2521, Baird, Fair, Transparent, and Competitive Internet Naming Act of 2003, 6/19/03 (Energy & Commerce)
  
- S. 151, Hatch, PROTECT Act, 1/13/03 (Judiciary)

## Appendix B: List of Acronyms

### Alphabetically

ACEC	Advisory Commission on Electronic Commerce
B2B	Business-to-Business
B2G	Business-to-Government
BOC	Bell Operating Company
CIO	Chief Information Officer
DMA	Direct Marketing Association
DNS	Domain Name System
DOC	Department of Commerce
DSL	Digital Subscriber Line
EU	European Union
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FTC	Federal Trade Commission
G2B	Government-to-Business
G2C	Government-to-Citizen
G2G	Government-to-Government
GAO	General Accounting Office
GSA	General Services Administration
gTLD	generic Top Level Domain
ICANN	Internet Corporation for Assigned Names and Numbers
ILEC	Incumbent Local Exchange Carrier
IP	Internet Protocol
ISP	Internet Service Provider
IT	Information Technology
LATA	Local Access and Transport Area
LEC	Local Exchange Carrier
MOU	Memorandum of Understanding
NGI	Next Generation Internet
NIST	National Institute for Standards and Technology
NSI	Network Solutions, Inc,
NSF	National Science Foundation
NTIA	National Telecommunications and Information Administration
ONDCP	Office of National Drug Control Policy
OPA	Online Privacy Alliance
OSS	Open Source Software
SSA	Social Security Administration
SSN	Social Security Number
TLD	Top Level Domain
UCE	Unsolicited Commercial E-mail
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

**Categorically****U.S. Government Entities**

DOC	Department of Commerce
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FTC	Federal Trade Commission
GAO	General Accounting Office
GSA	Government Services Administration
NIST	National Institute of Standards and Technology (part of Department of Commerce)
NSF	National Science Foundation
NTIA	National Telecommunications and Information Administration (part of Department of Commerce)
ONDCP	Office of National Drug Control Policy
SSA	Social Security Administration

**Private Sector Entities**

BOC	Bell Operating Company
DMA	Direct Marketing Association
ICANN	Internet Corporation for Assigned Names and Numbers
ILEC	Incumbent Local Exchange Carrier
ISP	Internet Service Provider
LEC	Local Exchange Carrier
NSI	Network Solutions, Inc.
OPA	Online Privacy Alliance

**General Types of Internet Services**

B2B	Business-to-Business
B2G	Business-to-Government
G2B	Government-to-Business
G2C	Government-to-Citizen
G2G	Government-to-Government

**Internet and Telecommunications Terminology**

CIO	Chief Information Officer
DNS	Domain Name System
DSL	Digital Subscriber Line
gTLD	generic Top Level Domain
IP	Internet Protocol
IT	Information Technology
LATA	Local Access and Transport Area
NGI	Next Generation Internet
OSS	Open Source Software
TLD	Top Level Domain
UCE	Unsolicited Commercial E-mail

**Other**

ACEC	Advisory Commission on Electronic Commerce
EU	European Union
MOU	Memorandum of Understanding
SSN	Social Security Number
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

## Appendix C: Legislation Passed by the 105<sup>th</sup> - 107<sup>th</sup> Congresses

Editions of this report prepared in the 105<sup>th</sup> Congress and the 106<sup>th</sup> Congress also addressed key technology policy issues affecting the use of growth of the Internet. Some of those issues continue to be of interest to Congress and are discussed in this edition of the report. Others, however, appear to be resolved from a congressional point of view, at least the moment, specifically encryption, electronic signatures, and protecting children from unsuitable material on the Internet. Those topics are not discussed in this version of the report. Nevertheless, it appears useful to retain information about legislation that passed on the subjects of most interest to the two previous Congresses. Following is such a summary, based on the topics that were previously covered in the report.

### Legislation Enacted in the 105<sup>th</sup> Congress

#### **Protecting Children: Child Online Protection Act, Children's Online Privacy Protection Act, and Child Protection and Sexual Predator Protection Act**

In the FY1999 Omnibus Consolidated and Emergency Supplemental Appropriations Act (P.L. 105-277), Congress included several provisions related to protecting children on the Internet. Included is legislation making it a crime to send material that is "harmful to minors" to children and protecting the privacy of information provided by children under 13 over interactive computer services. Separately, Congress passed a law (P.L. 105-314) that, *inter alia*, strengthens penalties against sexual predators using the Internet.

The "harmful to minors" language is in the **Child Online Protection Act**, Title XIV of Division C of the Omnibus Appropriations Act. Similar language was also included in the Internet Tax Freedom Act (Title XI of Division C of the Omnibus Appropriations Act). Called "CDA II" by some in reference to the Communications Decency Act that passed Congress in 1996 but was overturned by the Supreme Court, the bill restricts access to commercial material that is "harmful to minors" distributed on the World Wide Web to those 17 and older. The American Civil Liberties Union (ACLU) and others filed suit against enforcement of the portion of the Act dealing with the "harmful to minors" language. In February, 1999, a federal judge in Philadelphia issued a preliminary injunction against enforcement of that section of the Act. The Justice Department has filed an appeal (see CRS Report 98-670, *Obscenity, Child Pornography, and Indecency: Recent Developments and Pending Issues* for further information).

The **Children's Online Privacy Protection Act**, also part of the Omnibus Appropriations Act (Title XIII of Division C), requires verifiable parental consent for the collection, use, or dissemination of personally identifiable information from children under 13.

The Omnibus Appropriation Act also includes a provision intended to make it easier for the FBI to gain access to Internet service provider records of suspected sexual predators (Section 102, General Provisions, Justice Department). It also sets

aside \$2.4 million for the Customs Service to double the staffing and resources for the child pornography cyber-smuggling initiative and provides \$1 million in the Violent Crime Reduction Trust Fund for technology support for that initiative.

The **Protection of Children from Sexual Predators Act** (P.L. 105-314) is a broad law addressing concerns about sexual predators. Among its provisions are increased penalties for anyone who uses a computer to persuade, entice, coerce, or facilitate the transport of a child to engage in prohibited sexual activity, a requirement that Internet service providers report to law enforcement if they become aware of child pornography activities, a requirement that federal prisoners using the Internet be supervised, and a requirement for a study by the National Academy of Sciences on how to reduce the availability to children of pornography on the Internet.

### **Identity Theft and Assumption Deterrence Act**

The Identity Theft and Assumption Deterrence Act (P.L. 105-318) sets penalties for persons who knowingly, and with the intent to commit unlawful activities, possess, transfer, or use one or more means of identification not legally issued for use to that person.

### **Intellectual Property: Digital Millennium Copyright Act**

Congress passed legislation (P.L. 105-304) implementing the World Intellectual Property Organization (WIPO) treaties regarding protection of copyright on the Internet. The law also limits copyright infringement liability for online service providers that serve only as conduits of information. Provisions relating to database protection that were included by the House were not included in the enacted version and are being debated anew in the 106<sup>th</sup> Congress. Since database protection per se is not an Internet issue, it is not included in this report (see CRS Report 98-902, *Intellectual Property Protection for Noncreative Databases*).

### **Digital Signatures: Government Paperwork Elimination Act**

Congress passed the Government Paperwork Elimination Act (Title XVII of Division C of the Omnibus Appropriations Act, P.L. 105-277) that directs the Office of Management and Budget to develop procedures for the use and acceptance of “electronic” signatures (of which digital signatures are one type) by executive branch agencies.

### **Internet Domain Names: Next Generation Internet Research Act**

The Next Generation Internet Research Act (P.L. 105-305) directs the National Academy of Sciences to conduct a study of the short- and long-term effects on trademark rights of adding new generation top-level domains and related dispute resolution procedures.

## Summary of Legislation Passed by the 105<sup>th</sup> Congress

Title	Public Law Number
FY1999 Omnibus Consolidated and Emergency Supplemental Appropriations Act Internet Tax Freedom Act Children's Online Privacy Protection Act Child Online Protection Act Government Paperwork Elimination Act	P.L. 105-277  Division C, Title XI Division C, Title XIII Division C, Title XIV Division C, Title XVII
Protection of Children from Sexual Predators Act	P.L. 105-314
Identity Theft and Assumption Deterrence Act	P.L. 105-318
Digital Millennium Copyright Act	P.L. 105-304
Next Generation Internet Research Act	P.L. 105-305

## Legislation Enacted in the 106<sup>th</sup> Congress

### Electronic Signatures

The **Millennium Digital Commerce Act (P.L. 106-229)** regulates Internet electronic commerce by permitting and encouraging its continued expansion through the operation of free market forces, including the legal recognition of electronic signatures and electronic records.

### Computer Security

The **Computer Crime Enforcement Act (P.L. 106-572)** establishes Department of Justice grants to state and local authorities to help them investigate and prosecute computer crimes. The law authorizes the expenditure of \$25 million for the grant program through FY2004. The **FY2001 Department of Defense Authorization Act (P.L. 106-398)** includes language that originated in S. 1993 to modify the Paperwork Reduction Act and other relevant statutes concerning computer security of government systems, codifying agency responsibilities regarding computer security.



## **Internet Privacy**

Language in the **FY2001 Transportation Appropriations Act (P. L. 106-246)** and the **FY2001 Treasury-General Government Appropriations Act** (included as part of the Consolidated Appropriations Act, P.L. 106-554) addresses Web site information collection practices by departments and agencies in the Treasury-General Government Appropriations Act. Section 501 of the FY2001 Transportation Appropriations Act prohibits funds in the FY2001 Treasury-General Government Appropriations Act from being used by any federal agency to collect, review, or create aggregate lists that include personally identifiable information (PII) about an individual's access to or use of a federal Web site, or enter into agreements with third parties to do so, with exceptions. Section 646 of the FY2001 Treasury-General Government Appropriations Act requires Inspectors General of agencies or departments covered in that act to report to Congress within 60 days of enactment on activities by those agencies or departments relating to the collection of PII about individuals who access any Internet site of that department or agency, or entering into agreements with third parties to obtain PII about use of government or non-government Web sites.

The **Social Security Number Confidentiality Act (P.L. 106-433)** prohibits the display of Social Security numbers on unopened checks or other Treasury-issued drafts. (Although this is not an Internet issue, it is related to concerns about consumer identity theft, a topic addressed in this report.)

The **Internet False Identification Prevention Act (P.L. 106-578)** updates existing law against selling or distributing false identification documents to include those sold or distributed through computer files, templates, and disks. It also requires the Attorney General and Secretary of the Treasury to create a coordinating committee to ensure that the creation and distribution of false IDs is vigorously investigated and prosecuted.

## **Protecting Children from Unsuitable Material**

The **Children's Internet Protection Act (Title XVII of the FY2001 Labor-HHS Appropriations Act, included in the FY2001 Consolidated Appropriations Act, P.L. 106-554)** requires most schools and libraries that receive federal funding through Title III of the Elementary and Secondary Education Act, the Museum and Library Services Act, or "E-rate" subsidies from the universal service fund, to use technology protection measures (filtering software or other technologies) to block certain Web sites when computers are being used by minors, and in some cases, by adults. When minors are using the computers, the technology protection measure must block access to visual depictions that are obscene, child pornography, or harmful to minors. When others are using the computers, the technology must block visual depictions that are obscene or are child pornography. The technology protection measure may be disabled by authorized persons to enable access for bona fide research or other lawful purposes.

## Internet Domain Names

The **Anticybersquatting Consumer Protection Act (part of the FY2000 Consolidated Appropriations Act, P.L. 106-113)** gives courts the authority to order the forfeiture, cancellation, and/or transfer of domain names registered in “bad faith” that are identical or similar to trademarks. The Act provides for statutory civil damages of at least \$1,000, but not more than \$100,000 per domain name identifier.

### Summary of Legislation Enacted in the 106<sup>th</sup> Congress

Title	Public Law Number
Millennium Digital Commerce Act	P.L. 106-229
Computer Crime Enforcement Act	P.L. 106-572
FY2001 Transportation Appropriations Act, section 501	P.L. 106-246
FY2001 Treasury-General Government Appropriations Act, section 646 (enacted by reference in the FY2001 Consolidated Appropriations Act)	P.L. 106-554
Social Security Number Confidentiality Act	P.L. 106-433
Internet False Identification Prevention Act	P.L. 106-578
Children’s Internet Protection Act (Title XVII of the FY2001 Labor-HHS Appropriations Act, enacted by reference in the FY2001 Consolidated Appropriations Act)	P.L. 106-554
Anticybersquatting Consumer Protection Act (enacted by reference in the FY2000 Consolidated Appropriations Act)	P.L. 106-113

## Legislation Enacted in the 107<sup>th</sup> Congress

### Internet Privacy

The 107<sup>th</sup> Congress passed four laws affecting Internet privacy. The **USA PATRIOT Act (P.L. 107-56)**, passed in the wake of the September 11, 2001 terrorist attacks, *inter alia* expands law enforcement’s authority to monitor Internet activities. The Cyber Security Enhancement Act, included as section 225 of the Homeland Security Act (P.L. 107-296), amends the USA PATRIOT Act to further loosen restrictions on Internet Service Providers (ISPs) as to when, and to whom, they can voluntarily release information about subscribers.

Prior to the terrorist attacks, concern had focused on the opposite issue — whether law enforcement officials might be overstepping their authority when using a software program named Carnivore (later renamed DCS 1000) to monitor Internet activities. Although the USA PATRIOT Act expands law enforcement’s authority to monitor Internet activities, Congress also passed a provision in the **21<sup>st</sup> Century Department of Justice Authorization Act (P.L. 107-273, section 305)** requiring

the Justice Department to notify Congress about its use of Carnivore or similar systems.

Congress also passed the **E-Government Act (P.L. 107-347)** that, *inter alia*, sets requirements on government agencies in how they assure the privacy of personal information in government information systems and establish guidelines for privacy policies for federal Web sites.

### **Broadband Internet Access**

The **Farm Security and Rural Investment Act of 2002 (P.L. 107-171, Section 6103)** authorizes the Secretary of Agriculture to make loans and loan guarantees to eligible entities for facilities and equipment providing broadband service in rural communities. The **National Science Foundation Authorization Act of 2002 (P.L. 107-368, Section 18(d))** directs the National Science Foundation to conduct a study of broadband network access for schools and libraries.

### **Electronic Commerce**

The **Internet Tax Nondiscrimination Act (P.L. 107-75)** extends the Internet tax moratorium through November 1, 2003.

### **Internet Domain Names**

The **Dot Kids Implementation and Efficiency Act of 2002 (P.L. 107-317)** directs the National Telecommunications and Information Administration of the Department of Commerce to require the .us registry operator to establish, operate, and maintain a second level domain that is restricted to material suitable for minors.

### **E-Government**

The **E-Government Act of 2002** amends Title 44 U.S.C. by adding Chapter 36 — Management and Promotion of Electronic Government Services, and Chapter 37 — Information Technology Management Program, which includes a variety of provisions related to information technology management and the provision of e-government services. Among its provisions, the law establishes an Office of Electronic Government in the Office of Management and Budget to be headed by an Administrator appointed by the President. It also authorizes \$345 million through FY2006 for an E-Government Fund to support initiatives, including interagency and intergovernmental projects, that involve the “development and implementation of innovative uses of the Internet or other electronic methods, to conduct activities electronically.” Additionally, the law includes language that re-authorizes and amends the Government Information Security Reform Act (GISRA), establishes an information technology worker exchange program between the federal government and the private sector, promotes the use of Share-In-Savings procurement contracts, and establishes coordination and oversight policies for the protection of confidential information and statistical efficiency (the Confidential Information Protection and Statistical Efficiency Act of 2002).

**Summary of Legislation Passed by 107<sup>th</sup> Congress**

<b>Title</b>	<b>Public Law Number</b>
Uniting and Strengthening America by Providing Appropriate Tools to Intercept and Obstruct Terrorism (USA PATRIOT) Act	P.L. 107-56
Internet Tax Nondiscrimination Act	P.L. 107-75
Farm Security and Rural Investment Act (Section 6103)	P.L. 107-171
Cyber Security Enhancement Act (Section 225 of the Homeland Security Act)	P.L. 107-296
21 <sup>st</sup> Century Department of Justice Authorization Act (Section 305)	P.L. 107-297
Dot Kids Implementation and Efficiency Act	P.L. 107-317
E-Government Act	P.L. 107-347
National Science Foundation Authorization Act of 2002 (Section 18d)	P.L. 107-368

## Appendix D: Related CRS Reports

### Internet Privacy

CRS Report RL31289. *The Internet and the USA PATRIOT Act: Potential Implications for Electronic Privacy, Security, Commerce, and Government*, by Marcia S. Smith, Jeffrey W. Seifert, Glenn J. McLoughlin, and John Dimitri Moteff.

CRS Report RL30784. *Internet Privacy: An Analysis of Technology and Policy Issues*, by Marcia S. Smith.

CRS Report RL31408. *Internet Privacy: Overview and Pending Legislation*, by Marcia S. Smith.

CRS Report RL30322. *Online Privacy Protection: Issues and Developments*, by Gina Marie Stevens.

CRS Report 98-326. *Privacy: An Overview of Federal Statutes Governing Wiretapping and Electronic Eavesdropping*, by Gina Marie Stevens and Charles Doyle.

CRS Report RS21221. *Privacy Protection for Online Information*, by Gina Marie Stevens.

CRS Report RL31200. *Terrorism: Section by Section Analysis of the USA PATRIOT Act*, by Charles Doyle.

CRS Report RL31377. *The USA PATRIOT Act: A Legal Analysis*, by Charles Doyle.

CRS Report RS21203. *The USA PATRIOT Act: A Sketch*, by Charles Doyle.

### Computer Security

CRS Report RL30153. *Critical Infrastructures: Background, Policy, and Implementation*, by John D. Moteff

CRS Report RL31289. *The Internet and the USA PATRIOT Act: Potential Implications for Electronic Privacy, Security, Commerce, and Government*, by Marcia S. Smith, Jeffrey W. Seifert, Glenn J. McLoughlin, and John Dimitri Moteff.

CRS Report RL31542. *Homeland Security — Reducing the Vulnerability of Public and Private Information Infrastructures from Terrorism: An Overview*, by Jeffrey Seifert.

CRS Report 31787. *Information Warfare and Cyberwar: Capabilities and Related Policy Issues*, by Clay Wilson.

## **Broadband Internet Access**

CRS Issue Brief IB10045. *Broadband Internet Access: Background and Issues*, by Angele A. Gilroy and Lennard G. Kruger.

CRS Report RL30719. *Broadband Internet Access and the Digital Divide: Federal Assistance Programs*, by Lennard G. Kruger.

CRS Report RL31938. *Local Telephone Competition: A Brief Overview*, by Angele A. Gilroy.

CRS Report RL30018. *Long Distance Telephony: Bell Operating Company Entry Into the Long Distance Market*, by James R. Riehl.

CRS Issue Brief IB98040. *Telecommunications Discounts for Schools and Libraries: the "E-Rate" Program and Controversies*, by Angele Gilroy.

## **Electronic Commerce**

CRS Report RL31293. *E-Commerce Statistics: Explanation and Sources*, by Rita E. Tehan.

CRS Report RS20426. *Electronic Commerce: An Introduction*, by Glenn J. McLoughlin.

CRS Report RS20344. *Electronic Signatures: Technology Developments and Legislative Issues*, by Richard Nunno.

CRS Report RL31177. *Extending the Internet Tax Moratorium and Related Issues*, by Nonna A. Noto.

CRS Report RL31929. *Internet Tax Bills in the 108<sup>th</sup> Congress*, by Nonna A. Noto.

CRS Report RL31289. *The Internet and the USA PATRIOT Act: Potential Implications for Electronic Privacy, Security, Commerce, and Government*, by Marcia S. Smith, Jeffrey W. Seifert, Glenn J. McLoughlin, and John Dimitri Moteff.

CRS Report RL31252. *Internet Commerce and State Sales and Use Taxes*, by Stephen Maguire.

CRS Report RS20577. *State Sales Taxation of Internet Transactions*, by John Luckey.

## **Unsolicited Commercial Electronic Mail (Junk E-Mail or Spam)**

CRS Report RL31953. *"Junk E-mail": An Overview of Issues and Legislation Concerning Unsolicited Commercial Electronic Mail ("Spam")*, by Marcia S. Smith.

CRS Report RL31488. *Regulation of Unsolicited Commercial E-Mail*, by Angie A. Welborn.

CRS Report RL30763. *Telemarketing: Dealing with Unwanted Telemarketing Calls*, by James R. Riehl.

## **Internet Domain Names**

CRS Report 97-868 STM. *Internet Domain Names: Background and Policy Issues*, by Lennard G. Kruger.

## **Government Information Technology Management**

CRS Report RL31627. *Computer Software and Open Source Issues: A Primer*, by Jeffrey W. Seifert.

CRS Report RL31594. *Congressional Continuity of Operations (COOP): An Overview of Concepts and Challenges*, by R. Eric Petersen and Jeffrey W. Seifert. 16 p.

CRS Report RS21140. *Electronic Congress: Proposals and Issues*, by Jeffrey W. Seifert and R. Eric Petersen.

CRS Report RL30745. *Electronic Government: A Conceptual Overview*, by Harold C. Relyea.

CRS Report RL30914. *Federal Chief Information Officer (CIO): Opportunities and Challenges*, by Jeffrey W. Seifert.

CRS Report RL30661. *Government Information Technology Management: Past and Future Issues (the Clinger-Cohen Act)*, by Jeffrey W. Seifert.

CRS Report RL31103. *House of Representatives Information Technology Management Issues: An Overview of the Effects on Institutional Operations, the Legislative Process, and Future Planning*, by Jeffrey W. Seifert and R. Eric Petersen.

CRS Report RL31289. *The Internet and the USA PATRIOT Act: Potential Implications for Electronic Privacy, Security, Commerce, and Government*, by Marcia S. Smith, Jeffrey W. Seifert, Glenn J. McLoughlin, and John Dimitri Moteff.

CRS Report RS21469. *The National Telecommunications and Information Administration (NTIA): Budget, Programs, and Issues*, by Glenn J. McLoughlin.

CRS Report RL31057. *A Primer on E-Government: Sectors, Stages, Opportunities, and Challenges of Online Governance*, by Jeffrey W. Seifert.

## **Related Topics**

### **Computer Fraud and Abuse**

CRS Report RS20830. *Computer Fraud and Abuse: A Sketch of 18 U.S.C. 1030 and Related Federal Criminal Laws*, by Charles Doyle.

CRS Report 97-1025. *Computer Fraud & Abuse: An Overview of 18 U.S.C. 1030 And Related Federal Criminal Laws*, by Charles Doyle.

### **Copyright and “Fair Use”**

CRS Report RL30683. *Copyright Cases in the Courts: Napster, MP3 Digital Music, and DVD Motion Picture Encryption Technology*, by Robin Jeweler.

CRS Report RL31029. *Copyright Issues in Online Music Delivery*, by Robin Jeweler.

CRS Report RS21362. *Copyright Law: Digital Rights Management Legislation in the 107th Congress*, by Robin Jeweler.

CRS Report RL31626. *Copyright Law: Statutory Royalty Rates for Webcasters*, by Robin Jeweler.

CRS Report RL31827. *“Digital Rights” and Fair Use in Copyright Law*, by Robin Jeweler.

CRS Report RL31423. *Fair Use on the Internet*, by Christopher A. Jennings.

CRS Report RS21206. *“Fair Use” on the Internet: Linking, Framing, and Copyright’s Reproduction and Public Display Rights*, by Christopher A. Jennings.

### **Identity Theft**

CRS Report RL31752. *Identity Theft: An Overview of Proposed Legislation*, by Angie A. Wellborn.

CRS Report RS21163. *Remedies Available to Victims of Identity Theft*, by Angie A. Wellborn.

### **Internet-General**

CRS Report RL31270. *Internet Statistics: Explanation and Sources*, by Rita E. Tehan.

CRS Report RL30987. *Spinning the Web: the Internet’s History and Structure*, by Rita Tehan.



**Medical Records, Financial, and Other Privacy Issues**

CRS Report RS20934. *Brief Summary of the Medical Privacy Rule*, by Gina Marie Stevens.

CRS Report RS20500. *Medical Records Privacy: Questions and Answers on the December 2000 Federal Regulation*, by C. Stephen Redhead.

CRS Report RS20185. *Privacy Protection for Customer Financial Information*, by M. Maureen Murphy.

CRS Report RL31636. *Wireless Privacy: Availability of Location Information for Telemarketing*, by Marcia S. Smith.

**Protecting Children**

CRS Report RS21328. *Internet: Status of Legislative Attempts to Protect Children from Unsuitable Material on the Web*, by Marcia S. Smith and Amanda Jacobs.

CRS Report 98-670. *Obscenity, Child Pornography, and Indecency: Recent Developments and Pending Issues*, by Henry Cohen.

**Other Related Topics**

CRS Report RL30602. *Electronic Stock Market*, by Mark Jickling.

CRS Report 97-619. *Internet Gambling: Overview of Federal Criminal Law*, by Charles Doyle.

CRS Report RS20639. *Internet Voting: Issues and Legislation*, by Kevin Coleman.

CRS Report RL30456. *Prescription Drug Sales Over the Internet*, by Christopher Sroka.

CRS Report RL30863. *Telework in the Federal Government: Background, Policy, and Oversight*, by Lorraine H. Tong and Barbara L. Schwemle.