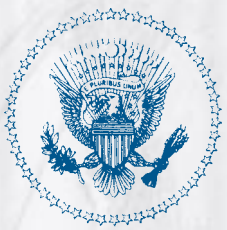
Leadership *for the* New Millennium

Delivering on Digital Progress and Prosperity



The U.S. Government Working Group
on Electronic Commerce

3rd Annual Report, 2000

for the Leadership New Millennium

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Preface

In many respects, we first began writing this report in 1993.

When the President and I took office that year the information super highway was no more than a vision. Here, in the same White House where Thomas Jefferson charted the course of continental exploration with Lewis and Clark, and John F. Kennedy challenged us to put a man on the moon, we were faced with a stark choice. We could either push into new frontiers or allow opportunities to slip away. The choices we have made since then have left us substantially better off than we were eight years ago.

We decided to offer America a vision and a strategy for creating a National Information Infrastructure, a seamless web of communication networks, computers, databases and consumer electronics that would put vast amounts of information and new tools at users' fingertips. We knew an Information Revolution was upon us and that it would change the way we lived, worked and interacted with each other. We wanted to maximize the benefits it would offer to our citizens.

In 1994, we broadened our vision to include the developing world. In Buenos Aires, before the International Telecommunication Union, I outlined a vision for creating a Global Information Infrastructure that would reach large segments of the world population and create new opportunities for their economic and social development. We recognized that we could not be complacent about the disparity between the high and low-income nations and their access to new technologies. We recognized that the development of the GII must be a cooperative effort among governments, businesses, non-profit groups and people.

We based our strategy for achieving these objectives on five essential principles: private investment, competition, open access, flexible regulatory frameworks, and universal access. Since 1994, these principles have been broadly accepted worldwide and have helped create flourishing markets in many countries that have enabled telecommunications and information technologies to reach more people and improve their lives. Privatization, competition, and liberalization remain the cornerstones of our policy.

In 1997, we released the *Framework for Global Electronic Commerce* and again sharpened and extended our vision and strategy to make it even more relevant to then-embryonic developments in the electronic marketplace. While e-commerce is the product of the innovation, imagination, and investment decisions of the private sector, we helped create an environment in which these forces could flourish. We made private sector leadership, avoidance of unnecessary restrictions, and, when needed, government intervention that is supportive, predictable, minimalist, consistent, and simple our watchwords. These principles have endured and have continued to serve us well. They increasingly have become the de facto common law of e-commerce policymaking around the world.

Ostensibly, this report records the progress we have made implementing our e-commerce principles and policies over the last year. In fact, it summarizes the progress we have made over the last eight. Over that period, we have worked together with stakeholders in the business, non-profit and international communities to narrow the digital divide and create digital opportunity at home and abroad.

We have not only recognized the potential of new technologies like the Internet, we have harnessed their power to the cause of progress and prosperity.

Our economy, which has experienced the longest expansion in peacetime history, reflects our success in using information technologies to spur growth, raise productivity, limit inflation, and create jobs. Our society reflects our success in using information technologies to expand greatly access to education, training, and medical and health information. Our government reflects our success in empowering our citizens and reinventing government for the Information Age. We have made our government more efficient, accessible, accountable, and, most importantly, more responsive to its customers than ever before.

I want to commend all of those in the Federal government who have assisted me in overseeing the issues described in this report. I would like to especially thank the senior staff on Internet and e-commerce related issues who have toiled to secure these results, including David Beier, Sally Katzen, Elizabeth Echols, Jim Kohlenberger, Tom Kalil, Andrew Weinschenk, Ron Keohane and their colleagues.

Those of us in public service have not accomplished these goals alone, however. This report, in fact, testifies to the power of unleashing the energy, creativity, and resources of the private sector. Our colleagues in business and civil society have offered crucial leadership and support, as have many in Congress, international institutions and foreign governments. Without them, without you, we would not have achieved all that we have. May the next stewards of policymaking in this field continue to benefit from your dedication, wisdom and hard work.

Together, over the last eight years, we have established a record of digital prosperity and progress. It is only a beginning. But we have blazed a trail that others can follow with confidence and conviction.

Al Gore

A Record of Digital Progress and Prosperity

Fostering the Digital Revolution

The Clinton-Gore Administration entered office at the dawn of the Digital Era and has guided one of the most fundamental transformations in our nation's history. New information and communications technologies have altered the way we play, work and do business in a way we have not witnessed since the advent of steam power and electricity over a century ago. In 1993, the Internet was a tool for a relatively small group of scientists, researchers, and hobbyists, many of them living and working in the United States. Today, the Internet is a familiar and increasingly critical part of daily life around the globe. The Clinton-Gore Administration has played a major role in nurturing the medium and creating a global policy and regulatory environment that has allowed the Internet to flourish beyond our expectations. In partnership with businesses and civil society, we have succeeded in dramatically increasing the connectivity of our citizens and their access to opportunity. We have used the medium to boost the quality of education and health care. We have hastened the development of electronic commerce. And we have instituted policies that have made digital technologies the dynamo that drives our economy. Working together over the last eight years, we have unleashed an Information Revolution that will continue to improve the lives of our citizens for decades to come.

> *"Here in America, a revolution in technology is underway. It is more than a time of innovation, it's a time of fundamental transformation, the kind that happens, at most, every hundred years."*
>
> President Clinton
> June 24, 2000

Putting America and the World Online

Nothing epitomizes the stark transformations of the past eight years better than the growth of the Internet itself. The number of Internet hosts, or computers with a unique Internet address, has ballooned from 1.3 million in 1993 to more than 93 million in 2000.[1] The number of Internet users has increased by roughly 423 million over the same period.[2] The Clinton-Gore Administration and its partners have made particular progress in connecting Americans. The number of Americans online has surged some 1,315 percent since 1993, from roughly 90,000 people to 137 million people today.[3] Meanwhile, the number of U.S. households online has soared over the last seven years from just 6 percent to 42 percent, nearly a seven-fold increase.[4] Over the same period, the number of U.S. households with personal computers has more than doubled to over half.[5] Some observers predict that within three years 62 percent of Americans will be online and that within five years some 91 percent will be online.[6]

While few nations can boast they are as wired as our own, the Internet has experienced tremendous international growth as well. In fact, while North America accounted for 45 percent of users worldwide as recently as last year within five years our region will account for just 29 percent.[7] Of the roughly 100 million new users who logged onto the Internet this year, three-quarters were located outside the United States.[8] The percent growth in the online population in such countries as China, South Korea and Italy was over 140 percent between 1999 and 2000. Countries like Brazil, Germany and France more than doubled our growth rate.[9] The Internet has truly gone global.

Delivering on Digital Equality

The Clinton-Gore Administration and its partners also have delivered in narrowing the digital divide and creating digital opportunity for all our citizens, regardless of race or ethnicity, location, age or gender (http://www.digitaldivide.gov). Digital opportunity for everyone is not only an attainable goal; it is becoming a reality. The latest research shows, for example, that the gap between rural households and households nationwide has narrowed to just 2.6 percentage points in 2000.[10] The percentage of rural households with Internet access shot up 75 percent since late 1998, from 22 percent to 39 percent. At every income level, but especially at middle income levels, Americans are connecting at far higher rates from their homes. Today more than two-thirds of all households earning more than $50,000 have Internet connections.[11] Access to the Internet also has expanded across every educational level. Households headed by someone with some college experience have shown the greatest expansion in Internet penetration, rising from 30 percent in December 1998 to 49 percent in August 2000.[12]

African-American and Hispanic groups also have logged impressive gains in Internet access, although they still lag behind other groups. Black households are now more than twice as likely to have home access than they were two years ago.[13] Hispanic households also have seen Internet usage nearly double over the same period.[14] Meanwhile the disparity between men and women has largely evaporated.[15] In fact, some observers believe that women have overtaken men as the primary users of the Internet. Individuals age 50 and over have experienced the highest rates of growth of all age groups over the last two years: 53 percent compared to a nationwide growth rate of 36 percent.[16]

Building a Digital Society

The Internet and related technologies are improving our society in many ways. Some of the most notable changes have occurred in education. The number of personal computers installed in classrooms tripled from 1992 to 1999, with the number of educational users of the Internet projected to exceed 110 million by the year 2003.[17] While this increased access is helping prepare students for today's economy, IT also is making school a more satisfying experience for many students. Some 43 percent of 9-17 year olds say that the Internet has improved their outlook about school.[18]

The growth of the Internet also appears to be helping Americans take better care of their health. A recent survey found that 55 percent of Americans online use the Internet to search for medical information. About half of them say the Internet has improved the way they get medical and health information and the way they take care of themselves.[19] There also is some evidence that the Internet is changing and improving the way we communicate with our families and friends. Approximately, 26 million Americans have used e-mail to start communicating regularly with family members with whom they had previously not had much contact. Some 61 percent of women and 56 percent of men say that they communicate more often with family members via e-mail.[20]

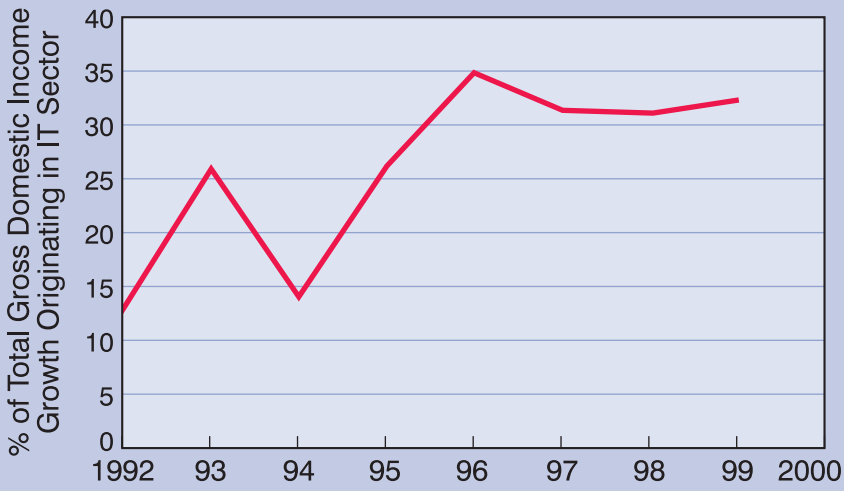
The growth of the Internet has even helped protect our environment and may be improving our political and civic life. By not commuting every day, telecommuters keep some 39,000 tons of hydrocarbons, 590,000 tons of carbon monoxide, and 31,000 tons of nitrogen oxides out of the air.[21] There is even some evidence that the growth of the Internet may help create a more informed electorate. The average campaign ad on TV or radio lasts 30 seconds while the average web surfer spent over 15 minutes on major candidates' websites in 1999.[22]

Unleashing E-commerce

Perhaps the most visible symbol of the IT-related changes over the last eight years is e-commerce. In 1993, when the Clinton-Gore Administration took office there was no appreciable business activity online. In December 1995, when the White House Electronic Commerce Working Group first convened, commerce on the Internet was just beginning and its potential was not widely recognized. Sales generated by the World Wide Web that year totaled just over

$435 million.[23] Since then, business-to-consumer and business-to-business e-commerce has skyrocketed. Some estimates suggest that business-to-consumer e-commerce will total some $61 billion or more in 2000.[24] Some sources suggest that business-to-business e-commerce will exceed $184 billion in 2000.[25] Although estimates vary, there is strong consensus about continued further growth. Business-to-consumer e-commerce could swell to between $75 billion and $144 billion in 2003.[26] Business-to-business e-commerce could reach between $634 billion and $3.9 trillion.[27] Already approximately 3 in 5 companies are using e-commerce to some extent and a further 20 percent say they intend to do so in the future.[28] By 2003 some 80 percent of all business-to-business transactions could occur online.[29] The U.S. Government also is increasing its ability to provide information and services online, with more than 27 million web pages of government information and a growing number of online transactions now available to citizens.

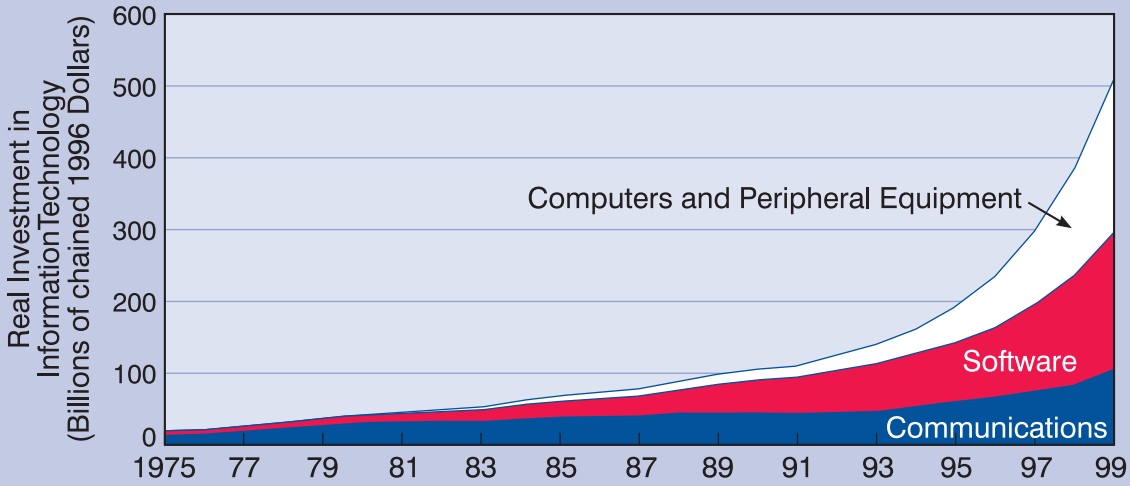
Growth in IT Sectors Has Become a Greater Contributor to Overall Economic Growth



Source: U.S. Department of Commerce (Digital Economy 2000).

Note: IT Sectors Encompass Computer and Communications Hardware Manufacturing, Software Development, and Computer and Communications Services

Real Investment in Information Technology Has Risen at a 28 Percent Annual Rate Since 1995.

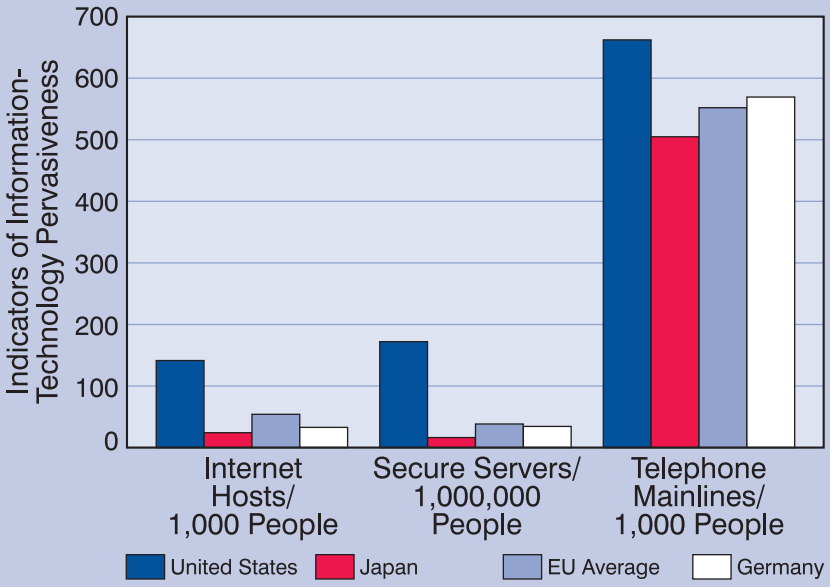


Source: Bureau of Economic Analysis and the Council of Economic Advisors

Creating a Digital Economy

The vast growth of e-commerce only begins to hint at the more profound changes that many observers believe IT and related technologies are producing in the overall economy. Today, we are enjoying sustained economic growth and a core inflation rate that remains low despite record employment and the lowest jobless rates in a generation. Despite a modest 8.3 percent share of the economy, IT industries are powering our improved economic performance. IT industries, for example, have contributed about 30 percent of U.S. economic growth since 1995. They also have accounted for half or more of the recent acceleration in U.S. productivity growth, from 1.4 percent per year during 1973-1995 to 3.0 percent during 1995-2000. In other words, IT appears to make it possible for our economy to grow faster than ever before without sparking increased inflation. Rapid declines in IT prices alone have directly lowered inflation by an average of 0.5 percentage points. IT industries also have generated hundreds of thousands of new jobs. Employment in the software and computer industries nearly doubled, from 850,000 in 1992 to 1.6 million in 1998. Over the same period, employment in those IT jobs that require the most education and offer the highest compensation (e.g., systems analysts, computer scientists, computer engineers, and programmers) increased by nearly 1 million positions or almost 80 percent. In short, the combination of growth, low inflation and low unemployment experienced in the overall U.S. economy in recent years has convinced many observers that the U.S. economy has entered a new era of economic prosperity and possibility.

The United States Leads Industrialized Countries in Several Areas in the Use of Technology



Source: World Development Report, OECD.

Executive Summary

The Internet, and other information and communication technologies, are not only driving our economies but are transforming our societies in countries around the world. Recognizing the vast potential for these technologies to better the lives of all people, President Clinton and Vice President Gore last year directed the Electronic Commerce Working Group to launch three new initiatives designed to harness the full power of the Internet's potential benefits. These initiatives have narrowed the digital divide and increased access to digital opportunity; improved the quality and availability of government services while making government more transparent, responsive and efficient; and used new technologies like the Internet to enrich our lives and address our most urgent social challenges. At the same time, we have expanded our ongoing efforts to promote the growth of electronic commerce and foster a safe, secure online environment.

This report outlines the Clinton-Gore Administration's success in making the Internet a tool for both social and economic growth. In pursuing these dual objectives, we have adhered to the principles the President and the Vice President first outlined three years ago in setting forth a global vision for the growth of e-commerce. These principles of private sector leadership, avoidance of unnecessary regulation, and a minimalist government role have continued to prove their durability and relevance. Our commitment to them has helped the Internet to flourish beyond our expectations and brought us closer to our ultimate objective of achieving digital equality for all our citizens.

In the fast changing world of the Internet, the five policy principles that President Clinton and Vice President Gore set forth in July 1997 have proven sound and sufficiently flexible to apply to the new challenges arising daily. They are:

- The private sector should lead.
- Governments should avoid undue restrictions on electronic commerce.
- Where governmental involvement is needed, its aim should be to support and enforce a predictable, minimalist, consistent and simple legal environment.
- Governments should recognize the unique qualities of the Internet.
- Electronic commerce over the Internet should be facilitated on a global basis.

I. Creating Digital Equality

The Clinton-Gore Administration has helped widen the circle of digital opportunity at home and abroad. Domestically, the Administration has helped create unprecedented access to the information technology. Over the last year, the digital divide between our citizens has narrowed dramatically. There were 116.5 million Americans with Internet access at some location by August 2000, 31.9 million more than there were only 20 months earlier. The Administration also has increased technology access, training and usage for all students. We also have helped small businesses to harness the power of the Internet and take part in the emerging global digital economy. Today, small businesses are using the Internet to increase their efficiency,

reach international markets, participate in business-to-business exchanges, and integrate themselves into supply chains that stretch around the world. Finally, the Administration has expanded digital opportunity globally. Around the world, we are helping developing countries use digital technologies to accelerate their social and economic development and participate fully in the Information Revolution.

The Administration has:

- **Connected Schools and Libraries to the Internet** – The e-rate is benefiting more than 90 percent of America's public schools and providing Internet access for 30 million children in more than one million classrooms and 47,000 schools and libraries.

- **Tripled Funding for Community Technology Centers** – The Administration proposed tripling funding for Community Technology Centers in its FY 2001 budget to $100 million to create up to 1,000 new centers. These centers will help to close the digital divide by providing computers and Information Age tools to children and adults unable to afford them at home.

- **Expanded Access to Education Technology** – The President and Vice President have increased overall investments in education technology from $23 million in 1993 to $766 million in FY 2000.

- **Increased Technology Training for Teachers** – The Administration is providing grants to help train 400,000 new teachers to use computers effectively in the classroom. In addition, the Technology Literacy Challenge Fund, which the Administration created in 1997 to help states provide software and Internet access for students, increase the number of multimedia computers in the classroom and provide technology training for teachers, received $425 million in FY 2000.

- **Helped Disabled Persons Get Access to the Web and Assistive Technology** – The Administration has supported the World Wide Web Consortium's Web Accessibility Initiative, promoting accessible information technology through research and industry collaboration; created an interagency task force to explore enhancing Medicare and Medicaid to help people with disabilities pay for technologies that will assist them to live and work independently; created state-based loan programs so that individuals with disabilities can have access to personal loans from traditional financial institutions for the purchase of assistive technology services and devices; and awarded $9 million to AmeriCorps to put 1,200 volunteers into schools and communities to teach students with disabilities and others the skills they need to use the Internet effectively.

- **Mobilized Public-Private Partnerships Targeting People with Disabilities** – With Administration support, over 45 high-tech CEOs have pledged to support "best practices" on accessibility and presidents of 25 of the nation's top research universities have agreed to expand research and education on accessibility issues. SmartForce, an e-learning company, also has pledged to provide $20 million of free access to its online training material and Sun Microsystems has created a lab to make free, open-source desktop software accessible for people with disabilities.

- **Launched a Distance Learning Service for Small Businesses** – Through a public/private partnership, the Administration began offering small businesses a distance learning curriculum that features online e-commerce courses and an e-commerce guidebook.

- **Created a Global Digital Opportunity Taskforce** – With strong support from key developing countries, industry, non-profit groups and other stakeholders, the Administration and its G-8 partners have launched a major international effort to create digital opportunity worldwide by providing policy advice, building human capacity, and increasing access (http://www.ecommerce.gov/ecomnews/pr0725002.html).

- **Expanded the Internet for Economic Development Initiative** – The Administration invited India and Jordan to join the initiative in early 2000 and seven additional countries – Mali, Indonesia, Kenya, Nigeria, Senegal, Romania and Guyana – in July 2000. Vice President Gore announced 11 pilot countries in June 1999.

II. Building An E-Society

The Administration has recognized that the Internet has the potential to address our most urgent challenges and improve our quality of life. The Internet is not just an engine of economic growth but a means of improving the quality of our lives. Increasingly, the Internet is a means to access educational, medical and other services. Over the last year, the Administration has stepped up efforts to make the Internet live up to its full potential to benefit people in critical areas such as health and education.

The Administration has:

- **Deployed Telemedicine Technologies to Remote Communities** – Over the last year, the Administration has moved rapidly to deploy state-of-the-art technology to bring primary care and specialty medicine to remote communities. Currently, there are almost 40 telemedicine programs and partnerships within the Indian Health Service alone that are delivering care to isolated communities.

- **Put Quality Health Care Information Online** – Both health care professionals and consumers, can get online, accurate, up-to-date, quality health care information from the world's largest medical library, the National Library of Medicine at the National Institutes of Health using MedlinePlus. This service provides access to extensive information about specific diseases and conditions, and has links to consumer health information, dictionaries, lists of hospitals and physicians, health information in Spanish and other languages, and clinical trials. Medline-plus receives over one million hits per month (http://www.nlm.nih.gov/medlineplus/). In addition, medical products consumers can use Medwatch to search medical product reporting and safety information (http://www.fda.gov/medwatch/index.html).

- **Made the Human Genome Project Available Online** – Members of the scientific community can use GenBank, a genetic sequence database, to access an annotated collection of all publicly available DNA sequences. The collection contains over 10.3 billion base pairs (http://www.ncbi.nlm.nih.gov/Genbank/genbankstats.html).

- **Improved Monitoring of Public Health** – Using information and communication technologies, the Administration has improved methods for conducting public health surveillance to gather health data in real time, facilitate the monitoring of health communities and analysis of trends, and to detect emerging public health problems.

- **Improved Rural Communities Through Information Technology** – The Administration has approved loans to install over 6,587 miles of fiber optic lines and upgrade 127 rural telephone exchanges so the plants are ready to allow customers to access high-speed DSL Internet service; awarded $18.7 million to link hospitals, schools, doctors, educators, patients and students in rural America with medical research institutions, universities, libraries, doctors, educators, and professors; and deployed Mobil Internet Vans to provide IT training in rural communities.

- **Pushed to Establish Online School Report Cards** – The Administration has proposed posting state-level, district and individual report cards on the Internet; provided funding for a pilot program in Maryland that has become a model for other states; and piloted the development of systems in eight states to allow states to compare their schools' academic performance.

III. Empowering Citizens

The Clinton–Gore Administration has brought government into the Digital Age. We have used digital technologies to make government move at Internet speed and make it possible for citizens to access critical government services and information around the clock. Now, anyone with a computer connection has the government at his or her fingertips. In addition to making government more efficient and accessible, we also have made government leaders more responsive via e-mail and are exploring ways of making it easier for all Americans to participate in the nation's political life. Digital empowerment is helping citizens take control of their government as never before.

The Administration has:

- **Launched the FirstGov.gov Website –** The Administration launched the first-ever website that provides the public with easy, one-stop access to all Federal government online information and services. The customer-focused FirstGov permits users to search 27 million Federal agency web pages instantaneously and intuitively – by subject or by keyword. The FirstGov search engine, run by the non-profit FederalSearch Foundation, can search half a billion documents in less than one-quarter of a second (http://www.FirstGov.gov).

- **Promoted Online Filing of Government Paperwork –** Under the Government Paperwork Elimination Act (GPEA), the Administration directed agencies in May to plan for electronic filing by October 2003 and to use electronic signatures for the full range of government activities and services, considering risks, costs, and benefits.

- **Put Government Services Online** – The Administration has dramatically expanded the range of services online. These services include:
  - **Taxes** – Taxpayers can use the IRS *e-file* program to file from the convenience of their homes quickly and simply. E-filing reduces the chances of an error to less than one-percent. With the security of Direct Deposit, refunds are in taxpayer's savings or checking accounts within three weeks, half the time compared to paper filings (http://www.irs.gov/elec.svs/index.html).
  - **Students.Gov** – Post-secondary students can obtain financial aid, easily complete electronic student aid applications, pay student loans and obtain other government information under the Access America initiative announced by Vice President Gore in February 1997 (www.students.gov).
  - **Seniors.Gov** – Seniors can receive estimates of their social security benefits, verify benefits received, and gather other government information of particular interest online (http://www.seniors.gov).
  - **Medicare Compare Database** – Citizens can find the Medicare option that works best for them using an interactive database that provides comprehensive information on various Medicare health plans, including the cost, quality, and benefits of each plan (http://www.medicare.gov/mphCompare/home.asp).
  - **Paperless Procurement** – Vendors who conduct business with the government can now use a totally paperless procurement process (http://www.fts.gsa.gov). The Government Services Administration (GSA) issues each potential bidder a digital signature certificate, allowing him or her to digitally sign and submit proposals and conclude contracts electronically.
  - **Campsite Reservations** – Campers can now get information and make reservations at more than 50,000 U.S. campsites and facilities (http://www.recreation.gov).

- **Examined the Feasibility of Online Voting –** On October 11-12, 2000 the National Science Foundation sponsored the Internet Policy Institute e-Voting Workshop. The Workshop explored the issues raised by online voting, including privacy, security, authentication, broad and equitable access, and the potential impact on representative democracy. A report detailing the findings from the workshop will be posted at www.netvoting.org in early 2001.

IV. Enhancing Consumer Confidence

E-commerce and other Internet applications will never reach their full potential unless consumers and other users can go online with confidence. The Clinton-Gore Administration has worked to ensure consumers enjoy equivalent protection whether they shop online or in brick-and-mortar stores. We also have significantly improved privacy protections through private sector self-regulation and legal protection in the most sensitive areas, and helped provide greater security on the Internet against cyber-criminals and other threats. We have achieved these successes while maintaining our core commitment to minimal government intervention and private sector solutions like codes of conduct and third party audits and enforcement mechanisms.

The Administration has:

- **Improved Consumer Protection Online** – The Administration has enhanced consumer protection by successfully challenging industry to establish codes of conduct, encouraging consumer education, and aggressively fighting misleading and deceptive practices online.

- **Explored Alternative Dispute Resolution (ADR) Mechanisms** – The Administration held a public workshop in June to explore the new and innovative ADR models emerging in the marketplace; exchange ideas on how to develop fair dispute resolution systems; identify obstacles to the more widespread use of ADR for online consumer transactions; and examine the incentives and disincentives for creating these programs (www.ecommerce.gov/adr/).

- **Encouraged Industry to Protect Individual Privacy** – The number of commercial web-sites that post privacy policies has jumped from 2 percent in 1998 to 62 percent this year.

- **Enhanced Protection for Children on the Internet** – The FTC issued rules to implement the Children's Online Privacy Protection Act in April 2000. The Administration actively supported enactment of this Act, which requires sites aimed at children to get verifiable parental consent before they gather and use personal information received from children under 13 (http://www.ftc.gov/opa/2000/04/coppa1/.htm).

- **Increased Protections for Medical Records** – In December 2000, the Administration issued the final rules guaranteeing the privacy of medical information under the Health Insurance Portability and Accountability Act of 1996. These rules will apply to all medical providers and plans and their business associates (13 percent of the U.S. economy).

- **Established a Safe Harbor for Consumer Information** – The United States and the European Commission completed the safe harbor privacy accord, which helps to ensure that trans-Atlantic data flows will not be interrupted. This landmark accord, which became operational in November of this year, will enhance privacy protection for U.S. consumers and assure effective privacy protection for European citizens whose data is transferred to the United States (http://www.export.gov/safeguard).

- **Implemented Sweeping Changes to Restrictions on the Export of Encryption Products** – In January 2000, the Administration implemented the new policy on the export of encryption products. The new policy, announced in September 1999, both protects national security interests and paves the way for U.S. industry to compete in major markets around the world. It also helps consumers and other users protect their data. In July 2000, the Administration announced a further update that opens up encryption exports to the 15 member nations of the European Union as well as eight other trading partners (http://w3.access.gpo.gov/bxa/fedreg/ear_fedreg.html#65fr42565).

- **Worked to Protect Internet Security** – In February, President Clinton convened a summit of industry leaders to examine the security of America's computer networks. In July, the White House announced a proposed legislative package to address both privacy protections and law enforcement needs for crime in cyberspace. The package contained provisions to update telephone-era laws for the Internet-age, enhance privacy protections and allow law enforcement to protect the public safety.

- **Announced First-ever Critical Infrastructure Protection Plan** – President Clinton issued in January the National Plan for Information Systems Protection, the first attempt by any national government to articulate a plan to protect its computer-controlled networks (http://www.pub.whitehouse.gov/uri-res/I2R?urn:pdi://oma.eop.gov.us/2000/1/7/7.text.1).

V. Creating A Seamless Global Marketplace

The Administration has worked to create a seamless global marketplace that will allow e-commerce and the Internet to reach their full potential. This year we continued work in dozens of areas, including taxation, customs duties, electronic signatures, and intellectual property rights, to ensure that the global regulatory environment encourages the development of global trade in cyberspace rather than stifles it. Nowhere has the application of our principles of private sector leadership and minimal government intervention been more successful.

The Administration has:

- **Established the Validity of Electronic Signatures** – President Clinton signed into law the Electronic Signatures in Global and National Commerce Act (E-SIGN) on June 30, 2000. E-SIGN promotes electronic commerce by ensuring explicitly the legal validity of electronic records, signatures, and transactions (http://www.ecommerce.gov/ecomnews/ElectronicSignatures_s761.pdf).

- **Worked to Extend the Global Moratorium on Customs Duties** – This year the Administration continued to build on the successful May 1998 WTO electronic commerce declaration to formally extend the existing moratorium on customs duties on electronic transmissions and continue the WTO work program regarding the application of all trade disciplines to e-commerce.

- **Promoted Tax Simplification and Non-Discrimination** – The Administration has continued to work to prevent multiple or discriminatory taxes on electronic commerce through the G-8, the OECD, and in bilateral efforts. The Administration also furthered the debate domestically on the simplification of state and local taxes through our participation in the Advisory Commission on Electronic Commerce and called for a permanent ban on Internet access taxes.

- **Provided Global Leadership on Intellectual Property Protection** – The Administration has encouraged worldwide support for the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty through trade negotiations, speeches, and participation in conferences. As of November 2000, 21 and 19 countries respectively, had ratified the two treaties, representing all geographical regions of the world.

- **Strengthened Procedures for Patenting Innovation –** The Administration significantly strengthened the procedures for evaluating applications for business method patents by partnering with affected industry, enhancing training for patent examiners, revising examination guidelines, and improving management oversight among other steps.

VI. Facilitating the Growth of the Internet

The Administration has worked to ensure that the Internet continues to grow. We have encouraged the rapid deployment of high speed Internet services through our pro-competitive policies. We have encouraged the development of voluntary standards through open private sector led processes and continued successful efforts to ensure that the domain name system is managed by a global, functionally diverse, and private sector-led organization. We also have expanded our understanding of the Digital Economy and how to sustain the growth, job creation, and low inflation that are driving our overall economic performance.

The Administration has:

- **Encouraged the Rapid Deployment of High Speed Internet Services** – The Administration's pro-competitive policies are stimulating rapid build-out of high speed Internet services. In addition, the President's proposed FY 2001 budget included a new pilot program that will provide $2 million in grants and $100 million in loans to accelerate private sector deployment of broadband networks in under-served urban and rural communities.

- **Supported Industry Efforts to Define Key Standards for the Internet** – The Administration has vigorously supported private sector-led efforts to create voluntary technical standards for the Internet.

- **Advanced Privatization of Domain Name Management** – The Internet Corporation for Assigned Names and Numbers (ICANN), which was created by the private sector with strong Administration support in 1998, held its first worldwide membership drive and online elections of new Members of its Board of Directors. ICANN selected seven new top-level domain names.

- **Expanded our Understanding of the Digital Economy** – The Administration released its Digital Economy 2000 report which examines the evolution of electronic commerce and the role of IT-producing industries in driving growth, reducing inflation, increasing productivity, and increasing jobs (http://www.esa.doc.gov/de2000.pdf). The Census Bureau of the Department of Commerce also began measuring both business-to-business and business-to-consumer e-commerce sales.

Introduction

This, the third and final Annual Report of the Electronic Commerce Working Group, highlights our progress over the past year on the work that began in 1997 with the release of *A Framework for Global Electronic Commerce* (www.ecommerce.gov/Framewrk.htm). The *Framework* provided a set of principles, a fundamental approach to the ever-changing policy challenges posed by the development of the Internet and e-commerce. In a world marked by rapid technological change and instant obsolescence, these principles have endured. They have guided us for four years, an eon in Internet time.

While the principles have remained the same, the scale of our ambitions has grown. We began by addressing some 13 policy issues, almost all of them economic, commercial or trade-related. We have since expanded that roster twice and this year's report addresses almost two dozen distinct issues. Last year, in the biggest departure from our initial focus, President Clinton and Vice President Gore asked us to go beyond economic issues to address three new topics: creating digital opportunity by increasing access to the Internet; using information technology to address our most urgent social challenges, such as health and education; and bringing government into the Information Age. This report, thus, records our progress not only in shaping a domestic and global environment that allows e-commerce to flourish but in harnessing the power of technology to improve our lives.

Three years ago, few could have foreseen the enormous changes that the Digital Revolution would bring. Few could have predicted the impact of the Internet. Few could have known that words starting in "e" would become ubiquitous or that a caption for a New Yorker cartoon about a dog chatting online would become a cultural catch phrase, or that a "web" would be anything other than something a spider would weave. Even fewer were prepared to address the policy challenges posed by this brave new world.

Now, the Internet is a powerful force that is facilitating commerce and trade, transforming social patterns, strengthening links between citizens and their representatives, and widening opportunities for economic and social development around the globe. What seemed unimaginable is now reality. Fortunately, if the Internet was the equivalent of a Model T in 1993, President Clinton and Vice President Gore saw that it would soon be a Mustang. Their foresight has allowed this Administration to respond effectively and quickly to these new developments and outline an approach that remains as relevant today as when it was first articulated.

This report describes the work we have done over the last year to implement the 21 Presidential directives that President Clinton and Vice President Gore have issued since 1997. We have not attempted to list every program, action, or accomplishment. Instead, we have tried to provide a portrait of the U.S Government's efforts to implement and expand upon the President's and the Vice President's objectives. We also have looked back occasionally to see where we started and how far we have come. We believe that this report constitutes a proud record of digital progress and prosperity.

I. Fostering Digital Equality

A. Digital Opportunity

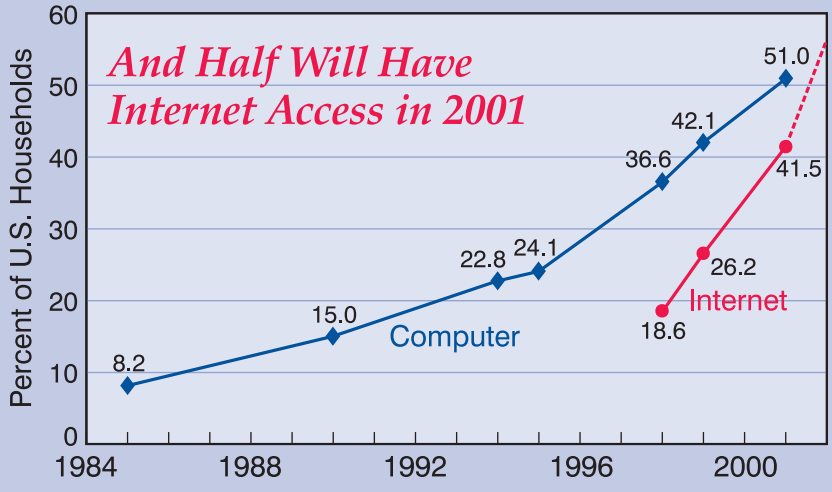
A top priority of the Clinton-Gore Administration has been increasing access to computers and the Internet in order to give all our citizens the chance to improve their lives. Today, access to these basic information tools and the ability to use them effectively are increasingly important to participating fully in America's economic, political, and social life. Americans are using the Internet to find lower prices for goods and services, search for and apply for a job, work from home or start their own business, acquire new skills using distance learning, make better informed decisions about their health care needs, and to communicate with friends, families, colleagues, and others who have similar interests. Digital literacy can help individuals qualify for jobs in the rapidly growing information technology sector that pay 85 percent more than the average wage for all private sector workers.[30] And an Internet-ready workforce also can help communities better develop, attract, and retain businesses.

"Our mission is to open the digital frontier to all Americans, regardless of income, education, geography, disability or race… If we work together to close the digital divide, technology can be the greatest equalizing force our society or any other has ever known."

President Clinton
April 4, 2000

The Clinton-Gore Administration has made significant progress towards increasing digital equality. Among the Administration's accomplishments:

Half of U.S. Homes Have Computers Now

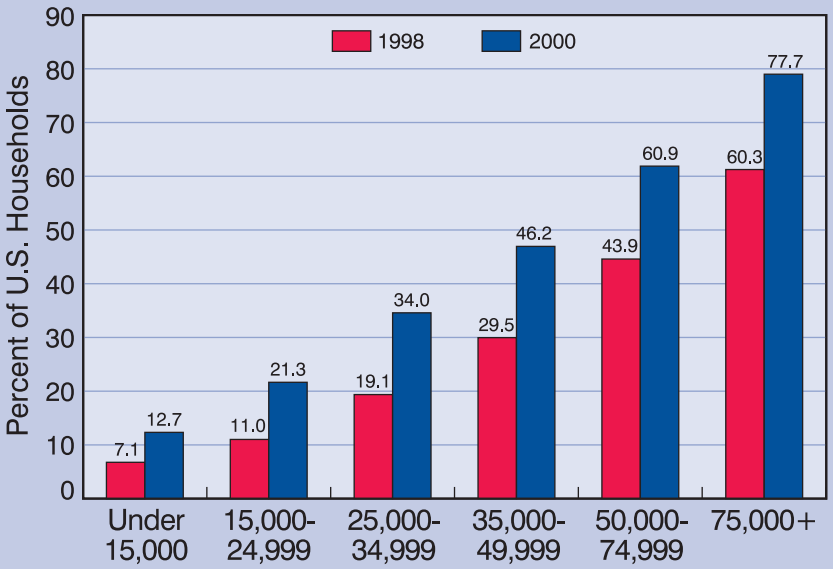


Source: Falling through the Net: Toward Digital Inclusion, U.S. Department of Commerce, October 2000.

1. Connecting Low-income Americans

To more effectively foster digital opportunity, the Clinton-Gore Administration created a Community Technology Center (CTC) program in 1999 with $10 million and has tripled or proposed tripling the program's funding every year since. CTCs, which provide access to technology for low-income Americans, have helped children to learn, adults to gain workplace skills, and families to benefit from online connections. Research sponsored by the National Science Foundation and others has documented the positive effects of CTCs on individuals and their communities.[31]

Percent of U.S. Households with Internet Access by Income, 1998 and 2000



Source: NTIA and ESA, U.S. Department of Commerce, using U.S. Bureau of the Census Current Population Survey supplements.

In September 1999, the Department of Education awarded 40 three-year grants to fund the creation of more than 87 new CTCs, and expand another 61. This spring, the President announced new awards to create 284 new CTCs and expand services at 165 existing centers. In his FY 2001 budget proposal, President Clinton proposed spending $100 million for the CTC Program to create up to 1,000 new centers.

CTCs are making a difference in communities across the country (www.ed.gov/offices/OVAE/CTC):

- **Valley City, North Dakota:** A $550,000 CTC grant to Valley City, North Dakota is funding a 20,000 square foot Regional Technology Center/Business Incubator that will provide affordable telecommunications access and help start-up technology firms gain a foothold in the region and reverse Valley City's considerable out-migration and underemployment. Half of the facility will be dedicated to the Business Technology Incubator and the remaining space will be used by the Valley City State University's Center for Innovation in Instruction to provide training for young adults, dislocated farmers, and the underemployed/unemployed.

- **Northern Arapaho Tribe, Wyoming:** A $178,762 grant is helping the Northern Arapaho Tribe acquire 10 computer workstations equipped with advanced office, business, and networking software for a Small Business Technology Center (SBTC). The SBTC will provide on-site training to Wyoming's Native Community and prepare its members for new high tech careers that pay above average wages. The center will offer networking, business, software development and Microsoft Certified training and job placement information and contracting/outsourcing opportunities otherwise unavailable in the region.

- **Pikeville, Kentucky:** Two grants totaling $1,052,000 to Pikeville, Kentucky are funding construction of a 27,400 square foot telecommunications services building and the creation of a facility to provide specialized

hands-on training to the local residents, particularly the many displaced coal workers. The Center will help these workers obtain the skills they need to benefit from new technology-related job opportunities. The Center also will serve as a business incubator and offer temporary office space for new, start-up businesses.

2. Connecting Children and Students

While both President Clinton and Vice President Gore have long made expanding access to the Internet and computers for all Americans a personal priority, Vice President Gore has led Administration efforts to ensure that all children have access to educational technology. His efforts to connect schools, classrooms and libraries to the Internet through the "e-rate" program are giving millions of students the skills they need to prosper in the Digital Economy. Among other steps, the Administration has:

"We know we must connect all our classrooms to the Internet, and we're getting there. In 1994, only 3 percent of our classrooms were connected. Today, with the help of the Vice President's e-rate program, more than half of them are. And 90 percent of our schools have at least one Internet connection."

President Clinton
January 27, 2000

- Connected 95 percent of U.S. public schools by 1999, compared to 35 percent in 1994;[32]
- Connected 63 percent of U.S. public classrooms by 1999, compared to 3 percent in 1994;[33]
- Increased educational technology funding from $23 million in FY 1994 to $766 million in FY 2000;
- Committed $5.6 billion in funding through the "e-rate" program for telecommunications infrastructure and services to schools and libraries through the end of FY 2000 (http://www.fcc.gov/learnnet).

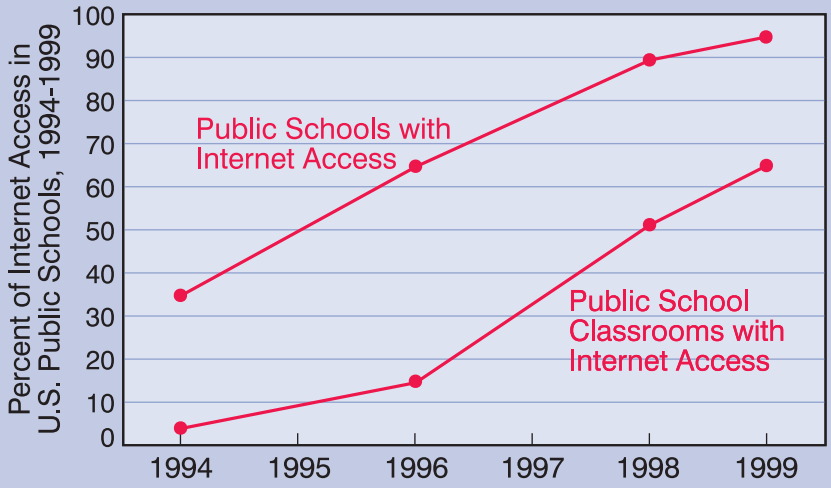
The E-Rate is Opening New Doors for American Students

Victor Shen, Whittier, Alaska. Victor Shen is a 16-year-old high school junior who is one of more than 30 million American children who are online because of the Vice President's e-rate. Victor lives in Whittier Alaska, which is isolated from the rest of the world for six months out of the year because of its remote location and severe weather. Victor was cut off from commerce, cut off from transportation, cut off from society, and cut off from pursuing his dream for the future. Victor wanted to grow up to be a mathematician, but his teachers didn't have the best resources to teach him; nor could they afford an Internet connection to connect Victor to his dream. Thanks to Al Gore's effort and the e-rate, Victor's school is now connected to the Internet and Victor is now connected to learning and connected to his dream. The Whittier Community School is now online because of the 90 percent discount they received from the e-rate. Now, the e-rate and the Internet are helping send Victor to Australia. He found and applied to the People to People Student Ambassador Program online and he will be able to travel far beyond his small village of Whittier to become part of the global village. The e-rate has enabled Victor and all the students of the Whittier Community School to expand the walls of the classroom and see all the wonderful opportunities that lie beyond Whittier.

In addition, the Administration proposed in its FY 2001 budget promoting the use of technology in education by:

- Creating tax incentives worth $2 billion over 10 years to encourage companies to donate computers; make sponsorship payments to schools, libraries, and community technology centers; and provide literacy and computer training to low-skilled employees;
- Expanding the Lifetime Learning Tax Credit from 20 percent to 28 percent. The credit allows taxpayers to take an above-the-line deduction for qualified tuition and related expenses including computer training;
- Permitting states and local governments to issue approximately $25 billion of bonds for construction and modernization of elementary and secondary public school facilities.

Access to the Internet in Schools Has Grown Dramatically



Source: Education Department (National Center for Education Statistics).

In addition to requesting $100 million to create 1,000 community technology centers in low-income communities, the Administration has proposed spending (http://www.whitehouse.gov/WH/New/00Budget/index.html):

- $150 million to help train all new teachers to use technology effectively in the classroom;
- $50 million to support home access to computers and the Internet for low-income families;

- $45 million to promote innovative applications of information technology to help under-served communities. Examples include tele-mentoring for at-risk youth, and public health information systems;
- $25 million to accelerate private sector deployment of broadband networks in under-served urban and rural communities;
- $10 million to prepare Native Americans for careers in IT and other technical fields.

3. Increasing Access for Persons with Disabilities

As part of its commitment to creating digital opportunity for all our citizens, the Clinton-Gore Administration is making a special effort to help persons with disabilities access and use the Internet effectively. Computers, the Internet, and other information and communications technologies increasingly are becoming a gateway to full participation in America's economic, political, and social life. This is particularly true for 54 million Americans with disabilities. Information and communication technologies designed to be usable by these Americans can increase their ability to participate in the workforce and lead independent lives. Designing technologies to make them accessible to people with disabilities also can improve their usability for others. Video captioning, for example, can make video much easier to search, and help people who are learning English as a second language.

That is why this Administration, in cooperation with partners from industry and academia, has launched an initiative to make the World Wide Web more accessible to persons with disabilities. During a visit to the Assistive Technology Access Center on September 21, 2000 in Flint, Michigan, President Clinton and Secretary Mineta announced that:

- $4 million in grants would be awarded to the Web Accessibility Initiative and the National Center for Accessible Media, to help ensure that people with disabilities can tap into the web;
- $9 million in grants from AmeriCorps will help pay 1,200 volunteers to work in schools to teach children with disabilities how to use the Internet;
- Two dozen college and university presidents have pledged to ensure that their websites and resources are accessible to those with disabilities; and
- Forty-eight presidents of high-tech firms have pledged to adopt "best practices" on accessibility, such as training their workers to develop accessible products and services, and identifying and fixing accessibility problems in new versions of hardware and software.

In addition, the President created an interagency group to examine Medicare and Medicaid coverage of assistive technology. President Clinton's FY 2001 budget proposal also included a significant increase in funding for assistive technology research and support for state loan financing programs to make assistive technology more affordable.

This new initiative, which involves the Department of Education, National Science Foundation and Department of Commerce, renews the Administration's longstanding commitment to accessibility issues (http://www.whitehouse.gov/WH/accomplishments/cc799.html). The Department of Education's National Institute on Disability and Rehabilitation Research (NIDRR), for example, has provided more than $16 million in grants to promote accessible information technology, while the Department's Learning Anytime Anywhere Partnerships have distributed almost $2 million to develop standards for online learning. NIDRR also supports a Center on Telerehabilitation that engages in engineering research to promote new technologies for teleassessment, telecounseling and other purposes.

In July, on the 10th anniversary of the Americans with Disabilities Act, President Clinton issued an Executive Memorandum requiring agencies to make all programs offered on their Intranet and Internet sites accessible to people with disabilities. Many agencies already have made significant progress towards that goal by making their principal and top 20 (by volume of use) websites accessible to people with disabilities. In response to the Executive Memorandum, the Interagency Committee on Disability Research will issue a report to the President in 2001 on a "Strategy for the Development and Transfer of Assistive Technology and Universal Design."

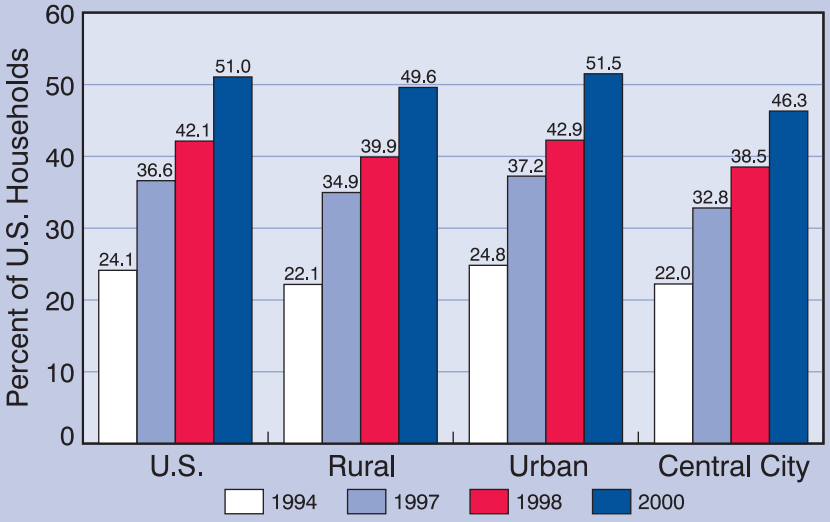
President Clinton and Vice President Gore also fought for the Telecommunications Act of 1996, which requires that telecommunications equipment and services be accessible to people with disabilities. President Clinton signed into law

the Workforce Investment Act of 1998, which included the Rehabilitation Act Amendments of 1998. The revised "Section 508" provisions require that when Federal agencies develop, procure, maintain, or use electronic and information technology, they must ensure that it is accessible to people with disabilities (http://www.section508.gov/).

4. Connecting Rural Americans

The Department of Agriculture has taken the lead in promoting the availability of advanced telecommunications services in rural and tribal communities. Toward that goal, the Rural Utilities Service (RUS) of the Department of Agriculture has approved forty-four loans totaling $4.4 million dollars to install over 6,587 miles of fiber optic lines and upgrade 127 rural telephone exchanges so that they can offer customers high-speed DSL Internet service. Eight loans specifically provided telephone cooperatives and telephone companies serving Rural America with funds for Internet services.

Percent of U.S. Households with a Computer



Source: NTIA and ESA, U.S. Department of Commerce, using U.S. Bureau of the Census Current Population Survey supplements.

As part of a "digital divide" initiative announced by President Clinton earlier this year, RUS also has established a pilot program to help advance "broadband" deployment in rural areas. The program will provide $2 million in grants and $100 million in loans in FY 2001. For this pilot program, RUS has raised the traditional population cap for qualifying areas from 5,000 to 20,000 people. Typically, RUS borrowers' investments in fiber optics significantly outpace those of other telephone companies that provide service to rural communities. Fiber optic lines allow homes, businesses, schools, and hospitals in rural America to access high-speed Internet services. This broadband access not only attracts private sector investments but also increases access to opportunity to people who live and work in rural America.

5. Building Awareness and Mobilizing Resources

While the Clinton-Gore Administration has worked intensively to use government resources to create digital opportunity, it also has sought to raise public awareness and mobilize private sector resources. Towards this end, President Clinton and the Department of Commerce hosted a conference in December 1999 on "Closing the Digital Divide." The summit brought together about 800 participants, including executives of U.S. technology firms, civil rights and community leaders, and government officials. The summit launched a public dialogue on how to expand and coordinate existing public and private initiatives aimed at closing the technology gap.

At the summit, the President announced a Digital Divide-New Markets Tour, which took place in April 2000 and highlighted communities that are using information technology to enhance their children's education, expand access to

life-long learning, and create economic growth and high-tech, high-wage jobs. The President's tour took him to East Palo Alto, California, Shiprock, New Mexico, and to Whiteville, North Carolina, where he released a report entitled *Advanced Telecommunications in Rural America* (http://www.ntia.doc.gov/reports/ruralbb42600.pdf) compiled by the Departments of Commerce and Agriculture. This report, discussed in more detail in the broadband section of the report below, examines the prospects for high-speed Internet deployment in rural areas.

Most importantly, over 400 leaders of companies and non-profit organizations endorsed the President's "National Call To Action," (http://www.whitehouse.gov/WH/New/html/20000404.html) which sets as goals providing 21st century learning tools for every child in every school and creating digital opportunity for every American family and community. Under this initiative, the Administration announced that it would devote $12.5 million for an "e-Corps" to recruit 750 qualified AmeriCorps members for a project aimed at bringing digital opportunity to youth, families, and communities. Industry and non-profit groups responded by pledging to work with local schools to ensure that all children are technologically literate, expand internships to expand high-tech career opportunities for underserved youth, and lead grassroots efforts in local communities to bridge the digital divide.

Private Sector Commitments to President Clinton's "National Call to Action"

- QUALCOMM will help to close the digital divide with a $25 million commitment — including $7 million to improve math and science education in San Diego schools through investments in educational technology and enhancing the math and science instructional skills of K-12 teachers;
- The Kaiser Family Foundation and Black Entertainment Television announced public service campaigns to motivate young people to participate in technology;
- Hewlett-Packard announced a $15 million Digital Village Initiative — with products, partnerships and people in 3 underserved communities — starting in East Palo Alto. HP's comprehensive approach will focus on programs that serve adults and kids at home, in school, and through community centers;
- Gateway pledged to provide 75,000 teachers with technology literacy training under the Teach America! program. This effort will provide teachers with hundreds of courses to increase their use of the Internet and multimedia applications;
- The PowerUp program announced a major expansion of its successful program to give underserved youth access to technology and guidance on how to use it. PowerUP will have 250 — up from 19 — new, fully-equipped and staffed sites by the end of 2000. PowerUP is comprised of more than a dozen non-profit organizations, major corporations and Federal agencies. The expansion of the PowerUP program is made possible because of commitments from a number of organizations — including a pledge by AOL to provide 100,000 AOL accounts to PowerUP sites, valued at $26 million annually, and a donation of 50,000 Gateway computers by the Waitt Family Foundation;
- Cisco Systems, Inc., the Department of Housing and Urban Development, and Communities In Schools pledged to announce a program valued at $1.4 million to establish 10 Cisco Networking Academies in underserved communities. The Cisco Networking Academy Program teaches students to design, build, and maintain computer networks through a 280-hour web-based curriculum and hands-on laboratory exercises on real networks;
- Yahoo! agreed to provide an Internet advertising campaign worth $1 million to enlist volunteers with high-tech skills in AmeriCorps' digital divide initiative;
- 3Com agreed to provide $330,000 to launch NetPrep Gyrls in partnership with the YWCA's TechGYRLS program. The program will offer girls aged 14-16 training in computer networking leading to an industry-standard certification. 3Com expects to reach 600 girls in 30 NetPrep GYRLS locations around the country; and
- The American Library Association agreed to work with its members to create or expand "information literacy" programs in at least 250 communities around the country.

The Department of Commerce also has worked to raise public awareness of the digital divide issue. Secretary Daley kicked off a 12-city "Closing the Digital Divide" tour in February 2000 and Secretary Mineta launched his own series of "Digital Inclusion" events in September (http://www.digitaldivide.gov). During his tour, Secretary Mineta issued, *Community Connections: Preserving Local Values in the Information Age*[34], which profiles projects funded under the Technology Opportunities Program. In September, Secretary Mineta also helped inaugurate a program launched by eBay to bridge the digital divide for seniors. The program pledges to train over one million seniors, grant $1 million to SeniorNet, the largest non-profit training organization for seniors, and create ten new senior learning centers nationwide.

6. Delivering on Digital Opportunity

Over the last eight years, the Clinton-Gore Administration has successfully narrowed the gap between those in our society with access to computers and the Internet and those without it. On October 16, 2000, Secretary Mineta released *Falling Through the Net: Toward Digital Inclusion*, the fourth in a series of reports measuring the level of computer ownership and Internet connectivity in the United States (http://www.ntia.doc.gov/ntiahome/fttn00/contents00.html). The report, conducted by the Department of Commerce's National Telecommunication and Information Administration (NTIA) and the Economics and Statistics Administration (ESA), using information collected by the Census Bureau from 48,000 homes, found that virtually every group in our society has participated in the sharp upward trend of Americans to connect their homes to the Internet.[35]

"We must close the digital divide in this country. I believe that every child in America—regardless of income, geography, race, or disability—should be able to reach across a computer keyboard, and reach the vast new worlds of knowledge, commerce, and communication that are available at the touch of a fingertip. We cannot be satisfied until every American has the ABC's of the Internet: Access, Basic skills, and high-quality Content."

Vice President Gore
February 15, 2000

The overall level of U.S. digital opportunity has rapidly increased in recent years:

- The share of households with Internet access increased over the last two years from 26 percent to 42 percent, an increase of 58 percent;
- The number of households with access to computers, rose from 42 percent in December 1998 to 51 percent this year, a 21 percent increase;
- The number of Americans online increased over the previous 20 months by 32 million, to a total of 117 million;
- The number of Americans using the Internet, rose from 32.7 percent online in December 1998 to 44 percent in August 2000; and
- The biggest gains recently have been among those with average incomes and education levels.

The report also showed heartening evidence that minorities and other special groups are achieving sharply higher connectivity rates:

- Rural areas showed large gains, narrowing significantly the digital divide between them and the rest of the nation that appeared 20 months ago in the last survey;
- The gap in access between men and women largely has disappeared;
- African-American households are now more than twice as likely to have home access than they were two years ago, although they still lag behind other groups;
- Hispanic households also have seen home Internet usage nearly double over the same period; and
- Individuals age 50 and over have experienced the highest growth rates of all age groups over the last two years, 53 percent compared to a nationwide growth rate of 36 percent.

However, while Internet access and computer ownership have risen for almost all demographic groups, noticeable divides still exist between those with different income and education levels, different racial and ethnic groups, old and young, single and dual-parent families and those with and without disabilities. For example, large gaps remain between Internet access rates for Blacks and Hispanics when measured against the national average of Internet penetration. Unfortunately, persons with disabilities are only half as likely to have access to the Internet as those without a disability. This gap is cause for concern, and – as noted above – has stimulated efforts to address these issues.

7. Connecting Not-for-Profits

The Department of Commerce's Technology Opportunities Program (TOP) (http://www.ntia.doc.gov/otiahome/top/index.html), which was created to promote the widespread availability and use of advanced telecommunications and information technologies in the public and nonprofit sectors, provides another example of how the Administration is working to build connected communities. Since its inception in 1994, TOP has focused its efforts on making information technology applications more available to the nonprofit community, recognizing that they often have limited access to the latest technology.

"Community technology centers provide low-income individuals with skills training and the ability to produce their dreams. They are also an important entryway to the technology industry. We think of President Clinton as our first angel investor: his Administration's work has been fundamental to Plugged In and to the community technology center movement."

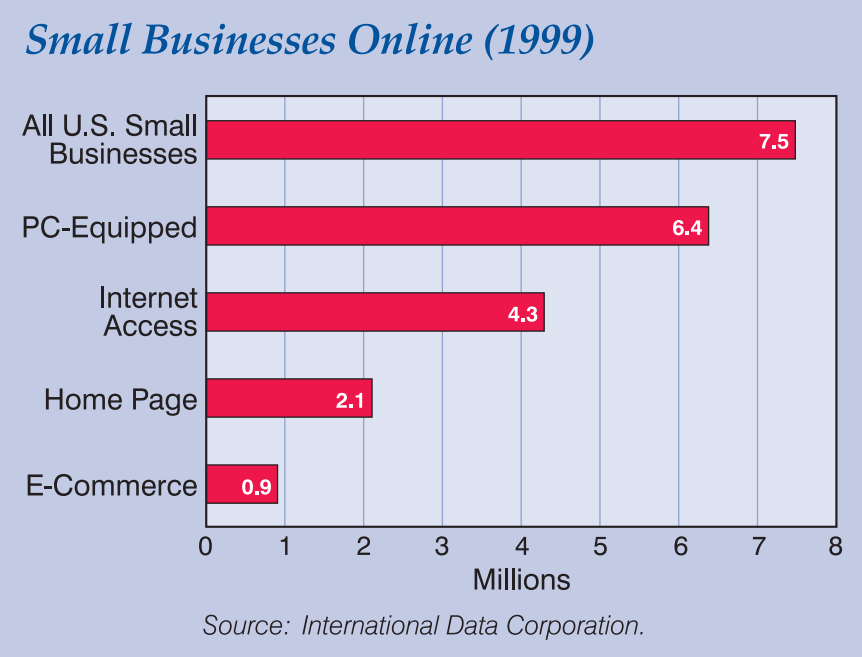
Magda Escobar
Executive Director
Plugged In
East Palo Alto, California

In FY 2000, TOP awarded 35 grants, totaling $13.9 million. With the addition of this year's projects, TOP has awarded 456 grants, in all 50 states, the District of Columbia, and the U.S. Virgin Islands, totaling $149.7 million and leveraging $221 million in local matching funds. These grants have been used for a variety of purposes. The See Forever Foundation, in downtown Washington, DC, for example, has used information technology grants to help residents of a low income inner-city neighborhood solve local problems such as creating access for the elderly and training teens in computer skills. The Digital Bridge Foundation in Boston, Massachusetts has provided low-income families with computers at home as well as training and Internet access, in exchange for community service.

8. Connecting Small Businesses

The Clinton-Gore Administration has long recognized that part of creating digital opportunity is helping small businesses harness the power of the Internet to participate in the digital economy. In today's global information economy, anyone with a bright idea, a computer and a connection can set up shop in the global marketplace. To fulfill this potential, this Administration has encouraged the development of information technology applications that enable low-income Americans to start and manage their own small businesses. It also is helping small businesses overcome barriers to the use of the Internet and electronic commerce, raising awareness of new technologies, and improving electronic access to information and services that can assist small businesses in using the Internet and electronic commerce. The Administration has trained Federal government employees who have contact with small businesses in the use of the Internet and electronic commerce. It also has moved commonly used government products and forms to the Internet to enable small businesses to use the Internet to interact with the government.

International Trade Administration: The Department of Commerce's International Trade Administration (ITA) has launched an initiative called "E-Exports: Connecting U.S. Business to the Global Digital Economy," designed to help small and medium-sized firms overcome the challenges of international business and make more effective use of the Internet to expand



Source: International Data Corporation.

- Small business exporters now can easily access Department of Commerce information related to trade on the Department's completely revamped export portal (http://www.export.gov). The Department also is building a library of webcasts on the site, covering a wide-range of export-related topics such as "Understanding E-commerce: Strategic Fundamentals for Small Businesses and Exporters."

global sales. The initiative has revamped old products and services and developed new "e-tools" to connect U.S. businesses to the new digital economy.

- U.S. sellers and overseas buyers can now do business at virtual trade shows on the Department of Commerce's new E-ExpoUSA site (http://www.e-expousa.doc.gov). The website features over 50 exhibitors from more than 50 industry sectors. In addition, the site offers companies a virtual booth that contains company overviews, hot links to company websites, and the ability for companies to put up as many as 5 products and services complete with pictures, logos, video and sound. The site also tracks and displays any trade leads generated online.

- Exporters of IT equipment can learn how to take advantage of the E-Exports Initiative at (http://www.ExportIT.ita.doc.gov). The initiative helps small- and medium-sized enterprises with market research, trade missions, and a seminar series that educates participants on how the Internet can help their companies enter and succeed in global markets; introduces them to solution providers; and fosters networking among companies interested in international markets.

Manufacturing Extension Program: The Manufacturing Extension Program (MEP) (www.mep.nist.gov) of the Department of Commerce's National Institute of Standards and Technology (NIST) offers advice and support to small manufacturers through a network of 400 centers across the country. In partnership with the National Association of Manufacturers, the MEP sponsored a Manufacturing Summit that assessed the e-commerce needs of small and medium-sized manufacturers. To address the need for expanded education on e-commerce, the MEP has created an eBusiness Product Line that has four major categories:

- Education and Awareness — The MEP now offers a series of seminars and workshops for CEOs, owners, and others on e-business strategies and concepts. Offerings range from an introduction to the Internet to detailed implementation issues such as web security. The MEP also offers two workshops, "eBusiness Strategic Opportunities" for company owners, CEOs and senior managers, and "eBusiness Fundamentals" primarily aimed at company information technology managers. It also offers an online course, Net Knowledge 101, to keep MEP field personnel up to date.

- eBusiness Readiness Assessment — The MEP's eBusiness Readiness Assessment offers tools to help companies determine their existing infrastructure capabilities and determine future needs. The eBusiness Opportunities Assessment Kit offers tools to help a company understand e-strategy options and the basic IT infrastructure required to become an e-business. The kit contains a software-based readiness assessment tool with a set of questions designed to provide feedback for a firm's e-business planning efforts. The kit is intended to provide companies with a self-assessment capability, but also can be used in collaboration with a MEP e-business specialist.

- eBusiness Transformation Planning and Implementation Project Management — The MEP has planned future offerings in Transformation Planning and Implementation Project Management. Transformation Planning will consist of a set of detailed questionnaires and templates intended to help a company develop a detailed e-business strategy plan. Implementation Project Management will contain a detailed set of services which MEP Centers and partners can offer to help implement Transformation Planning services. Some services will be center-specific and others will be offered nationally.

- eBusiness Solution Center — The MEP opened an eBusiness Solution Center on July 3, 2000 as a resource for MEP field staff. Support includes general information about e-business in areas such as strategy and technology, as well as specific MEP product support. A website is planned as an additional means of assistance.

Computer Technology Centers (CTCs): While the Administration's CTC initiative has increased computer and Internet access to low-income Americans and children, it also is bringing small business into the digital economy and helping upgrade the information technology skills of America's workforce, particularly workers living in disadvantaged urban and rural communities. On September 21, 2000, the Department of Education awarded a $2 million contract to create the America Connects Consortium. The Consortium's strategic priorities include helping CTCs create or improve small-business assistance, IT workforce and micro-enterprise development programs. Consortium partners include the Information Technology Association of America, whose more than 400 companies are advancing workforce development and other issues; and the National Alliance of Business, which is linking employers to improve education and training throughout the United States.

Minority Business Development Agency: Over the last half of 2000, the Department of Commerce's Minority Business Development Agency (MBDA) (http://www.mbda.gov) conducted a series of E-Business Seminars in partnership with the Telecommunications Industry Group (TIG). These seminars have helped small businesses develop websites, implement Internet security, understand website hosting services, and develop roadmaps for implementing e-business strategies. These seminars have been free of charge, and have been conducted by e-business experts within the TIG companies.

In June 2000, the MBDA also conducted a high-level conference focused on the telecommunications and information technology issues. The conference was based on *The New Realities of Minority Business* (http://osecnt13.osec.doc.gov/public.nsf/docs/73CEF2DF103AD022852568080071213F), a White Paper released earlier in the year that addresses the impact of emerging market factors such as globalization, technology, procurement streamlining, and changing demographics on minority businesses. The June conference brought senior executives of technology companies together with the finance and investment community, specifically to encourage mergers, acquisitions, strategic alliances, and other rapid-growth strategies among minority-owned technology firms.

To better benchmark the minority business community's current use of e-commerce technology, the MBDA also has commissioned a comprehensive nation-wide survey of minority business owners. The survey will determine, among other things, the extent to which minority businesses are currently engaging in e-commerce and the types of business

activities for which they are using e-commerce. It also will explore why some minority firms are not currently engaging in e-commerce, and what opportunities and threats minority business owners believe the emerging Digital Economy poses.

Small Business Administration: If current trends continue, some 85 percent of small businesses will conduct business over the Internet by the year 2002.[36] To help U.S. small businesses overcome the information barriers preventing them from joining the digital economy, the Small Business Administration (SBA),the Department of Commerce, and the Department of Agriculture launched an aggressive outreach program in 2000. This campaign included national, regional, and state-level e-commerce conferences; the development of e-commerce educational materials; and expanded e-commerce offerings on the SBA website. During 2000, SBA also co-hosted several Town Hall meetings, hundreds of training sessions, and thousands of counseling sessions on e-commerce related themes. The SBA , the Department of Commerce, and the Department of Agriculture, also co-sponsored the first national "eCommerce Small Business Summit" in June 2000. The summit showcased cutting edge technologies and provided information to assist small business to successfully use e-commerce.

The SBA also has reached out to small businesses over the World Wide Web. Its award-winning website (http://www.sba.gov) attracts nine to ten million Internet "hits" a week. The website offers small businesses e-commerce resources created by SBA and private sector co-sponsors, electronic networks, and procurement opportunities. It also hosts online services for small business, distance learning through online e-commerce courses, and an e-commerce guidebook. Users have responded very positively to these offerings. The Tobin College of Business Administration at St. John's University, New York, for example, uses the SBA's Online Classroom as a key part of its coursework.

Working through Small Business Development Centers (SBDCs) (http://www.sba.gov/SBDC/), the SBA and its partners also offer small businesses free e-commerce summits, training, conferences, CD-ROMs, webcast e-commerce events, and e-mail business counseling. Recently, SBDC counselors have received training in all aspects of e-commerce to enhance their ability to counsel and train small businesses. While most SBDCs use e-mail, online e-commerce training, and technology assessments to work with small businesses, the Idaho SBDC uses a mobile training lab that allows rural businesses to learn locally and earn globally. The Arkansas SBDC has partnered to establish an Internet Incubator that targets small service and retail businesses seeking to increase sales via the Internet. Among other steps, the Incubator helps clients develop websites and register domain names for their businesses. In North Carolina, the Small Business Development Technology Center, developed an e-Commerce Resource Guide 2000 for small businesses.

Small Business Development Center Successes

- Snow Drift Farm saw its sales increase from $3,000 to $226,000 after it worked with Maine's SBDC to build a website and improve its business process.
- Lark Toys, a wooden toy maker, was discovered by Disney for the movie "Gepetto" after becoming e-commerce ready as a result of completing a course with Access Minnesota Mainstreet (http://www.ecommerce.umn.edu).
- MacArthur Bed and Breakfast (http://www.boreal.org/macarthur) saw its reservations triple after launching its new website.
- Glad Corn snacks (http://www.gladcorn.com) received 18,000 requests for free samples after its website appeared on a list of free samples on the Internet.

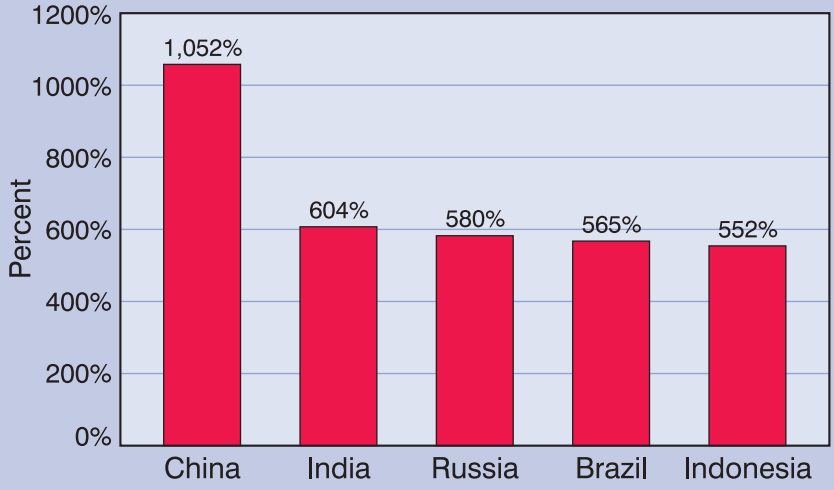
9. Connecting the Globe

The Clinton-Gore Administration has long recognized the importance of closing the digital divide not only at home but abroad. Vice President Gore has led Administration efforts to close the gap between the world's richest and poorest countries and use information and communication technologies to speed economic and social progress in the developing world. In 1994, the Vice President set forth his vision of a "Global Information Infrastructure" before the International Telecommunication Union (ITU). In his speech, he laid out principles of private investment, competition, open access, flexible regulatory frameworks, and universal access that governments, international organizations and others have widely endorsed and implemented (http://www.interesting-people.org/archive/0949.html). In 1998, before the ITU Plenipotentiary Conference, the Vice President posed five great challenges to the global community that together constitute a Digital Declaration of Interdependence (http://www.whitehouse.gov/WH/EOP/OVP/speeches/itu.html):

- Improve access to technology so that everyone on the planet is within walking distance of voice and data telecommunications services within the next decade;
- Develop technologies that can overcome language barriers by providing real-time digital translation so that anyone on the planet can talk to anyone else;
- Create a Global Knowledge Network of people working to improve the delivery of education, health care, agricultural resources, and sustainable development and to ensure public safety;
- Use communications technology to ensure the free flow of ideas and support democracy and free speech; and
- Use communications technology to expand economic opportunity to all families and communities around the world.

Nations that succeed in harnessing IT's potential can look forward to greatly expanded economic growth, dramatically improved human welfare, and stronger forms of democratic government. Through the use of IT, developing nations have an unprecedented opportunity to reduce poverty and improve basic education and health care. The United States is committed to assisting developing countries and seeks to partner with other governments, the private sector, international organizations and other stakeholders to achieve these goals. This year, the Administration greatly expanded its efforts to accelerate the spread of the Internet and electronic commerce overseas.

Foreign Computer Growth Per Capita (1993-2000)



Source: American Electronics Association & NASDAQ, 2000.

Digital Opportunity Taskforce: At the Okinawa G-8 Summit in July 2000, President Clinton and the other G-8 leaders launched the Digital Opportunity Task Force to create digital opportunity in developing nations (http://www.ecommerce.gov/ecomnews/pr0725002.html).

Although access to IT is only one component of a broader development strategy, it is becoming increasingly important. For example, global electronic commerce could exceed $7 trillion by 2004[37], and developing countries could fall further and further behind if their companies lack access to these markets.

The mission of the Task Force, commonly known as the *dot force,* will be to develop a strategy and set of recommendations for creating digital opportunity in developing countries. The *dot force* will address issues such as:

- Creating a policy and regulatory framework that will promote competition and private sector investment in the telecommunications industry, and that will allow the Internet and e-commerce to flourish;
- Expanding the IT workforce of developing countries;
- Strengthening the capacity of developing country entrepreneurs to create businesses that will drive economic growth and create jobs; and
- Promoting applications of the Internet and information technologies such as e-learning, e-government, and e-health.

The *dot force* is unique in that it is composed of representatives from developed and developing country governments, high-tech industry, civil society, and international organizations. In addition to developing a strategy and set of recommendations for helping to bridge the global digital divide, the *dot force* also will work to mobilize the resources needed to implement its recommendations. The President named Markle Foundation President Zoe Baird, Hewlett-Packard Chairman Carleton (Carly) Fiorina and Special Assistant to the President Tom Kalil as the U.S. representatives to the *dot force*.

To mobilize public and private sector support and demonstrate U.S. commitment to the *dot force*, the President issued a "Global Call to Action" in Okinawa. Over 50 leading high-tech companies, foundations, and non-governmental organizations heard the call and committed themselves to taking concrete steps toward achieving digital access and education for all by the year 2010. Among other measures, the U.S. Government announced it would expand its Internet for Economic Development Initiative (IED) (described below) to seven new countries and that the Overseas Private Investment Corporation would establish a $200 million line of credit for e-commerce and digital divide projects in developing countries.

The U.S. Government's partners also agreed to provide specific assistance or take specific actions. Among other steps:

- The Markle Foundation, World Economic Forum, IBM, Harvard University, the UN Development Program, and the UN Foundation announced they would create a network readiness initiative available to all developing countries;
- Andersen Consulting has announced a substantial commitment to develop a strategy and implementation plan for bridging the digital divide in conjunction with the Markle Foundation, and the UN Development Program;
- Cisco Systems announced it would expand its Cisco Networking Academies to 24 of the least developed nations;
- The Global Business Dialogue on e-commerce announced it would partner with ASEAN nations to strengthen e-commerce policies;
- Intel announced it would expand its "Teach to the Future" technology training program for teachers in at least 10 more countries; and
- AOL announced it would launch four international PowerUP sites in 2001.

Internet for Economic Development Initiative: Under the Internet for Economic Development (IED) program, which Vice President Gore announced in June 1999, the Department of State, the U.S. Agency for International Development (USAID), the Federal Communications Commission (FCC), the Department of Commerce, and other agencies are working

with host governments, multilateral organizations, and the private sector to implement projects that respond to participating countries' specific needs. The initiative holds great promise for success in part because it helps participating countries create pro-competitive policy and regulatory environments that attract long-term private investment. USAID has provided the vast majority of funds required to implement IED programs. Total fiscal year 1998-2000 funds dedicated to IED totaled approximately $34 million.

The initiative initially involved 11 countries. These countries were Guatemala, Haiti, Jamaica, Bulgaria, Egypt, Morocco, Ghana, Guinea, Uganda, South Africa and Mozambique. In 2000, the Administration expanded the IED program by more than half. The Administration invited India and Jordan to join IED in early 2000 and in July 2000, as part of the G-8 Digital Opportunity Task Force described above, expanded the program to include efforts associated with seven additional countries: Mali, Indonesia, Kenya, Nigeria, Senegal, Romania and Guyana.

Examples of specific IED country programs in 2000 include:

- **Guatemala:** The U.S. Embassy in Guatemala, the Peace Corps, and the Department of State Economic Bureau (http://www.state.gov/www/issues/economic/index.html) and Global Technology Corps (http://www.globaltechcorps.org) worked together to assist a Mayan women's cooperative in efforts to establish a website (http://www.tesorosmayas.com) that markets traditional Mayan textiles over the Internet. USAID is developing a network of community-based tele-centers in small towns and rural areas of El Quiche. USAID also funded Internet access at four teacher-training colleges in Mayan areas to prepare bilingual materials for language training and develop Mayan cultural instructional materials.

- **Egypt:** USAID is funding business management training via distance learning in cooperation with the World Bank Institute and the Regional Information Technology Institute.

- **Ghana:** The Multilateral Initiative on Malaria, a collaboration involving USAID and other USG agencies, established an Internet and voice communication link with the U.S. National Institutes of Health and the World Health Organization in Geneva to facilitate malaria vaccine development. USAID and non-profit partners also are operating self-sustaining Internet community access centers.

- **India:** During his March 2000 visit to India, President Clinton announced a $5 million Rural Information Technology Program, which provides policy advice and information technology training.

- **Bulgaria:** The private sector is establishing Internet community access centers, and USAID has subsidized start-up costs through vouchers to NGOs.

- **Jamaica:** The Department of State, USAID and the FCC collaborated with Jamaican partners to develop market-opening provisions of the new Telecom Act, establish a Spectrum Management Authority, and train the Utility Regulation Office.

- **Africa:** USAID has funded three study tours to the United States by telecom and regulatory officials from 10 African countries. The FCC hosted these tours, which included visits to the Departments of State and Commerce. The FCC, the International Telecommunication Union and the Nigerian Communications Commission also sponsored a September 21-22, 2000 workshop for 40 West African telecommunications regulators.

The IED Initiative builds on the success of USAID's Leland Initiative, a $15 million, five-year program launched in 1996 in cooperation with the Department of State to enhance Internet connectivity in 21 African countries. The Leland Initiative promotes policy reform, helps build necessary infrastructure, and works to increase the ability of African countries to use IT to sustain development. The IED countries in Africa are also Leland countries.

FCC Development Initiative: FCC Chairman William E. Kennard launched a related development initiative in June 1999 (http://www.fcc.gov/ib/developinitiative). The FCC is providing telecommunications policy and regulatory assistance to developing and emerging countries and helping them build independent regulatory agencies equipped to facilitate universal service through competition, liberalization, privatization, and transparency. As of December 2000, Work Programs had been signed with telecom policymakers in Uganda, Ghana, South Africa, Peru, Argentina, Jamaica, Hungary and Turkey. In 2001, the FCC expects to agree to additional Work Programs with countries in Eastern and Central Europe.

Recognizing that demand for FCC information and guidance on telecom matters far outstrips its resources, the FCC published *Connecting the Globe: A Regulator's Guide to Building the Global Information Community* as the first step. This manual highlights the major issues facing telecom regulators and is meant to be especially useful to those who may not have the resources to participate directly in the FCC's initiative. Finally, in June 2000, the FCC premiered a set of online training modules that the Commission will make available to anyone that wants telecommunications policy and regulatory assistance. In 2000, the FCC also hosted over 800 foreign visitors, many from developing countries, through its International Visitors Program. The program enables foreign delegations to informally discuss with FCC staff a wide range of communications issues.

Global Technology Corps: Within the Department of State, the Office of International Information Programs established the Global Technology Corps (GTC) in mid-1999 to set up public-private partnerships committed to closing the international digital divide. The GTC works with companies, individuals, and organizations willing to volunteer their time, expertise, and resources to help spread the benefits of information technology worldwide. In 2000, GTC activities in IED countries included a video-journalism seminar introducing South African university students to the latest digital video cameras, which produce television-quality video at a small fraction of traditional costs.

Telecommunications Summits and the Technology Opportunities Program: The Department of Commerce has furthered the Administration's IED goals by holding e-commerce workshops in developing countries. Over the last few years, the Department of Commerce also has held telecommunications summits, including a series of Latin America Telecommunications Summits and China-U.S. Telecommunications Summits. These policy conferences are designed to bring government and industry leaders together to discuss new technologies and advance understanding of the role that transparency and pro-competitive policies have in promoting e-commerce and access to information and communications technology.

Many grants issued to U.S. recipients under NTIA's Technology Opportunities Program (TOP) are helping close the international digital divide by providing models for similar programs overseas. Community networking, educational, and health and wellness programs can be linked to parallel efforts in institutions and communities overseas. TOP, for example, has facilitated a joint project between one of its community network grantees and an international project in Mexico funded by the World Bank.

Peace Corps E-Initiatives: Virtually every Peace Corps Volunteer sworn in today is adept at using computers and accessing the Internet. Increasing numbers of Volunteers are helping to make globalization "personal" and "local" by bringing the benefits of the information revolution into the hands of micro-entrepreneurs, students, health workers, farmers, artisans, teachers and others with whom they live and work. Volunteers are integrating information technology into field projects, and helping partners use e-mail and develop websites to participate more fully in national, sub-regional and global commerce.

To leverage Volunteers' existing skills and enhance them where appropriate, the Peace Corps has launched an "e-initiative" under Director Mark Schneider. Under this initiative, the Peace Corps has developed an "Information Technology Training-of-Trainers" package. After field testing in six countries, the package was distributed and implemented worldwide in November 2000. A follow-up training package on computer hardware and software troubleshooting, repair, and upgrading is currently being prepared.

Internet training also has become a standard part of overseas staff training to ensure Volunteers have the tools to integrate IT into all field projects. A workshop in Banjul, The Gambia, in September 2000, for example, brought together staff, primarily managers of Small Business Development projects, and Volunteers from 15 African countries to share experiences and best practices on integrating IT into their projects. A similar workshop for Latin American Small Business Development project managers focused on e-commerce.

B. E-Society

Creating digital opportunity in the United States, and globally are only two aspects of the Clinton-Gore Administration's policy of fostering digital equality. Used creatively, the Internet and related technologies also can help us tackle our most urgent social challenges and build a more inclusive society. In addition to helping people and communities become better connected through the Internet, this Administration is using the Internet to improve access to health care and education, make it easier to acquire new skills, and improve the quality of life in rural communities. Our society is fast becoming an "e-society" where we use the Internet to deliver services more efficiently and allow citizens to access them with greater flexibility than ever before. The U.S. Government has led this transformation through a variety of grants and web-based public information programs and conferences across a range of fields.

> *"We should realize that the technological revolution makes possible a revolution throughout every aspect of our society—from our classrooms, where educational software can tailor learning to the pace of each child; to our businesses, where the World Wide Web gives even the newest entrepreneur a worldwide reach; to our families, where new technology can open new doors of opportunity to the homebound elderly, people with disabilities, people who are too far away from the nearest hospital or job training program."*
>
> Vice President Gore
> February 15, 2000

1. Improving Public Health and Medical Care

The Department of Health and Human Services (HHS) has vastly expanded access to higher quality, health and medical information online. Virtually every part of HHS contributes to the effort of putting health and family welfare

information online. HHS Healthfinder website (http://www.healthfinder.gov) provides a broad range of health information from federal and other trusted sources. The Agency for Health-care Research and Quality makes available online information on the effectiveness, quality, and cost of health care. The Food and Drug Administration Online contributes food safety information (http://vm.cfsan.fda.gov/list.html). The Substance Abuse and Mental Health Services Administration, working with state and local governments, provides information for clearinghouses on substance abuse and mental health services. The Administration for Children and Families (ACF) provides adoption information at the National Adoption Information Clearinghouse. NIH also has continued development of PubMed, an online medical publication service, and soon will expand its online registry of information on clinical trials to include private as well as Federally-funded trials.

There is growing evidence that efforts like these are making a direct impact on the health of the 52 million American adults that have sought health and medical information on the Web. Half the people who have used the Internet to get health and medical information say that this information has improved the way they take care of themselves and many report that online information has directly affected their decisions about how to treat illness and deal with doctors, according to a recent report from the Pew Internet American Life Project (http://www.pewinternet.org/reports/toc.asp?Report=26).

Other examples of how HHS and the Centers for Disease Control and Prevention, the National Institutes of Health, the National Library of Medicine, and the Federal Drug and Food Administration use the Internet to distribute information, monitor public health, and improve medical treatment are listed below:

- Both health care professionals and consumers, can get online, accurate, up-to-date, quality health care information from the world's largest medical library, the National Library of Medicine at the National Institutes of Health using MedlinePlus. This service provides access to extensive information about specific diseases and conditions, and has links to consumer health information, dictionaries, lists of hospitals and physicians, health information in Spanish and other languages, and clinical trials. Medline-plus receives over one million hits per month (http://www.nlm.nih.gov/medlineplus/);

- Medical products consumers can use Medwatch to search medical product reporting and safety information (http://www.fda.gov/medwatch/index.html);

- Members of the scientific community can use GenBank, a genetic sequence database, to access an annotated collection of all publicly available DNA sequences. The collection contains over 10.3 billion base pairs (http://www.ncbi.nlm.nih.gov/Genbank/genbankstats.html);

- State public health officials can order vaccines for distribution to immunization providers electronically through the Center for Disease Control using HHS' Vaccines for Children Program;

- Professional health care providers can enhance their professional competencies by accessing public health-related topics over the Public Health Training Network (http://www.cdc.gov/phtn/); and

- Researchers have improved methods for conducting public health surveillance, using the National Electronic Disease Surveillance System. The system uses information technology to gather health data in real-time, facilitate monitoring of health communities, and detect emerging public health problems (http://www.cdc.gov/od/hissb/docs.htm#nedss);

- Patients transferred among federal medical facilities will receive better health care with the implementation of the Government Computer-based Patient Record. The system facilitates the secure exchange of patient records and helps ensure that doctors have a complete picture of the patient's medical history (http://www.ihs.gov/gcpr).

Various U.S. Government agencies also are using telemedicine to provide or support clinical care at a distance. Telemedicine

applications range from specialty consultations between health care practitioners in areas such as radiology, dermatology, cardiology to direct services to patients in such areas as psychiatry and speech therapy. Major agencies funding telemedicine projects include HHS, the Veterans Administration, and the Departments of Agriculture, Commerce, Justice and Defense. In FY 2000, the HHS' Office for the Advancement of Telehealth alone administered 62 telemedicine projects and evaluations, totaling over $19 million.

The Indian Health Service (IHS) also is moving rapidly to deploy advanced technology to bring primary care and specialty medicine to remote locations. For example, clinical engineers are equipping local health care providers in remote Alaskan villages with telemedicine systems to provide to distant doctors transmissions of patients' ear drums, skin conditions, and tonsils. Another program allows social workers in the Upper Midwest to communicate during frequent blizzards. Currently, there are about 40 telemedicine programs and partnerships within the IHS that are delivering care to small and isolated communities.

2. Enhancing Education

The Administration is using information technology to increase accountability, establish comparative benchmarks, enhance the delivery of education and training to underserved communities across America and around the world, and improve the availability and effectiveness of technology in the classroom. These efforts are making it easier for us to measure how our schools are performing and revolutionizing opportunity by making education and training more accessible than ever.

To support and encourage states and local communities to increase accountability and benchmark results, the Department of Education is making "school report cards" available on the Internet. The Department supported a pilot project in Maryland that has become a model for many other states. The Department also has helped states to compare their schools' academic performance. Making such information available on the Internet is popular with both school districts and states, but many of these efforts have been hampered by lack of funding and technical expertise. The Department's system, currently known as the Integrated Performance Benchmarking System, or IPBS, is still several years from being fully functional, but is enjoying strong support.

The Department of Education, along with the Department of Labor, also is using distance learning technologies to bring classes and curricula to those without access to a brick-and-mortar building. Those agencies are collaborating with colleges and universities to remove regulatory, legal and other barriers to high-quality distance learning as another means of receiving an education or training, and earning a degree.

The Distance Education Demonstration Program (DEDP), for example, allows 15 schools, systems and consortia, comprised of 100 institutions located in 17 states, to more easily obtain Federal student aid for distance education students pursuing college-level studies. This program, which was authorized in the 1998 Higher Education Amendments, is testing the statutory and regulatory barriers to the expansion of distance education. Participants in the DEDP program receive waivers of certain provisions found in Title IV Student Financial Assistance Programs and are helping to test other barriers to administering student aid to distance education students. They also are providing information that will help compare the quality of distance education with that offered in a traditional classroom.

The Department of Labor also is expanding educational opportunity through information technology. It is working with the Department of Defense and industry on a program called Advanced Distributed Learning, which is developing international standards for building distance-learning curriculum plans (http://www.adlnet.org). Additionally, the Department of Labor is working through the Sloan Foundation and others to make available online an extensive inventory of courses available over the Internet.

Finally, the Department of Education has updated the Administration's Educational Technology Initiative, which enhances teacher training, improves integration of technology in the classroom and supports investments in educational technology and research. Among

the initiative's new goals are ensuring that all students and teachers have universal access to information technology in their classrooms, schools, communities and homes; all teachers use technology effectively; and all students are technologically proficient and responsible cybercitizens.

3. Sharing Environmental Information

The Environmental Protection Agency (EPA) is using information technology to provide the public with accurate information on environmental quality and public health issues. Among other programs, the EPA has created a new Environmental Monitoring for Public Access and Community Tracking Program (EMPACT) to help communities monitor projects by providing real-time environmental information they can understand and use. The project allows people to check the quality of their air, water and drinking water and make decisions about their health. EPA also has launched a new version of its Toxic Release Inventory Explorer, an online analytical tool that advances citizens' right to know about and identify health risks they may face from facilities and chemical releases in their community. At the same time, EPA is working with state governments on its Online Targeting Information System. This system combines air, water and hazardous waste information together with toxic release and demographic information to create a single, integrated record of a regulated facility's environmental compliance status. The information provided by the system helps state and federal environmental officials target enforcement actions and, ultimately, do a better job of protecting the environment.

4. Empowering Non-Profit Organizations

The Department of Commerce's Technology Opportunities Program (TOP), as described above, was created to promote the spread and use of advanced telecommunications and information technologies in the public and nonprofit sectors. It also provides an example of how Administration programs are using the Internet to benefit society.

Of the 35 grants TOP awarded in FY 2000, half went to nonprofit organizations. Awards went to projects such as Crisis Services of Alabama, which will create an online human services network to give citizens easy access to community services, and the Pangea Foundation in California, which will create a network to facilitate communication and interaction among organizations serving persons with disabilities.

TOP evaluates and actively shares the lessons learned from its projects to ensure the benefits are broadly distributed across the country, especially in rural and underserved communities. Information on all grant proposals and projects is posted to the TOP website (http://www.ntia.doc.gov/otiahome/TOP/index.html). TOP also conducts periodic audits to evaluate how well funded projects are doing. One such report, *Community Connections: Preserving Local Values in the Information Age* (www.ntia.doc.gov/otiahome/top/publicationmedia/comm_conn/community_connections_illus.html), released on September 6, 2000, describes how communities are using information technology to further economic and community development efforts. Finally, TOP also sponsors an annual conference on strategies for using information infrastructure to enhance services in the public and nonprofit sectors.

5. Improving Rural Communities

The Department of Agriculture also is committed to using information technology to improve the quality of life in rural communities through its Rural Development Distance Learning and Telemedicine program (http://www.usda.gov/rus/telecom/dlt/dlt.htm). In November, 2000, Secretary Dan Glickman announced the Department was accepting applications for $325 million in loans and grants to be awarded in 2001 for distance learning and telemedicine projects. The program has invested $102 million in more than 383 projects since 1993, improving the educational opportunities for thousands of students and providing better quality health care to rural citizens served by more than 1,000 hospitals and rural health care clinics.

6. Protecting Public Safety

U.S. law enforcement agencies at all levels increasingly are using the newest information technology tools to fight crime and protect the public. The Federal Bureau of Investigation (FBI), for example, has established a Law Enforcement Online (LEO) program that provides law enforcement officers, for the first time, with a secure Intranet link that connects them to other law enforcement officers across the country. The LEO program ensures that law enforcement officers have access to the best information on cases, fingerprints, DNA samples, ballistics and other criminal-related intelligence. Use of LEO has more than doubled since March 1999, jumping from 12,000 users to almost 26,500 at the beginning of December 2000. The FBI is working to make the system even more easily accessible and efficient by developing a web-based version that uses sophisticated encryption to limit access to authorized viewers. The Drug Enforcement Administration also has a number of information technology programs to store and retrieve evidence in cases, link its agents and track fugitives.

Among other initiatives, the Department of Justice has helped law enforcement agencies develop and disseminate crime maps, which enable law enforcement agencies to better analyze crime patterns and target their resources. This year, the Department developed a Crime Mapping Tutorial CD-ROM and made its contents available on the Web. The Department's Crime Mapping Research Center also has completed development of an interactive distance learning class for beginners, "Mapping for Community Police and Problem Solving." The first interactive class was held September.

Finally, the Department of Justice and the Information Technology Association of America have launched a Cybercitizenship Partnership to raise awareness and educate society about cyberethics and discourage hacking and other abuses. The Partnership launched a website on September 5, 2000 for parents and educators who want to teach children and young adults how to use the Internet responsibly (http://www.cybercitizenship.org). The Partnership also has launched another website directly targeted at kids (http://www.usdoj.gov/kidspage/do-dont/kidinternet.htm).

7. Creating Digital Libraries and Preserving Our Cultural Heritage

To help expand access to high-quality content, the Administration has supported the development of a Digital Library for Education. Such a digital library would put high-quality educational resources at the fingertips of students and teachers. Although Congress did not fully support this initiative in the FY2000 and FY2001 appropriations process, the National Science Foundation (NSF) received funding for a Digital Library for Science, Mathematics, Engineering and Technology Education. In October 2000, the NSF awarded $13.5 million to 29 different projects.

Examples of NSF-funded projects include:

- The development of a National Biology Digital Library, building on the content of the NSF Plant Genome Project and the 5 million plant species in the University of Missouri Botanical Garden;
- The development of a Digital Library for Earth Systems Education;
- The ALSOS Digital Library, which allows students to explore from a variety of perspectives the origins, functions and legacies of the Manhattan Project, the World War II-era effort to build an atomic bomb; and
- A research initiative that will make it easier to locate educational video resources and incorporate them into lesson plans and multimedia essays.

Although much more remains to be done, progress toward a Digital Library for Education has been made in other areas as well. In response to a 1997 Presidential Executive Memorandum, almost 50 federal agencies have made available hundreds of educational resources to students, parents and teachers through the Federal Resources for Educational Excellence (FREE) website (http://www.ed.gov/free/). These resources include documentation of volcano eruptions over the last 10,000 years, the diaries of George Washington, the complete papers of the Salem Witch Trials, and

the wind tunnel tests of the Wright Brothers' first airplane. Using "metadata," the Department of Education's Gateway to Educational Materials (GEM) allows students, parents and teachers to search through over 14,000 educational resources by subject, grade level and keyword.

In order to preserve our heritage and make it more accessible, the Administration also has worked to digitize our nation's cultural resources. With support from the Congress and private sector donors, the Library of Congress has been digitizing its special collections that tell the American story, including documents, films, manuscripts, photographs, and sound recordings. The American Memory project, for example, contains over one million items, including the papers of Alexander Graham Bell, the Civil War photographs of Matthew Brady, and a multimedia ethnography of Dust Bowl migrants in 1940-41.

8. Realizing the Potential of Geospatial Information Systems

The Clinton-Gore Administration also has worked to realize the potential of geospatial information systems to improve the lives of our citizens. Geographical information systems (GIS) are computer systems designed to capture, analyze, manipulate and display data that is spatially referenced to the Earth. What distinguishes GIS from other forms of information systems, such as databases and spreadsheets, is that GIS data is most commonly displayed as a map.

GIS have many applications. Water supply companies can use GIS to display pipes and manholes. Local governments can use GIS to update property boundaries, manage emergency operations and environmental resources, and decide where certain services such as health care and primary education should be provided. Businesses can use GIS to determine where to locate an outlet, identify a potential market, and better understand where their customers live. Public health professionals can use GIS programs to relate demographic, environmental and other data sources to each other to get a more revealing portrait of health issues.

The Federal Geographic Data Committee (http://www.fgdc.gov), which is chaired by the Secretary of the Interior and includes 17 Federal agencies, was established to coordinate geographic information activities in the U.S. Government. The FGDC is responsible for developing and implementing the National Spatial Data Infrastructure (http://www.fgdc.gov/nsdi/nsdi.html) which provides a framework of policies, standards, and procedures that is needed for organizations to cooperatively produce and share geographic data. The Data Clearinghouse has grown from about 160 searchable networked sites in October 1999 to over 210 in September 2000.

Native American tribes in northwestern Montana use Geographic Information Systems to plot as few roads as necessary to harvest timber and preserve the scenic beauty of the Mission Mountain range, maintain high water quality in mountain streams, protect fish and wildlife habitat, and care for plant life and historic sites. With new information and logging technologies, the tribe found it could conduct logging with just four miles of road per square mile of forest, compared to between six and eight miles of road per square mile of land previously.

From *Community Connections: Preserving Local Values in the Information Age*
National Telecommunications and Information Administration, September 2000

The NSDI also sponsored six Community Demonstration Projects, which were completed in May 2000, to illustrate how geographic information can help citizens and governments address such issues as crime prevention and reduction, watershed and water quality management, disaster preparedness and recovery, and urban growth and land-use planning. The FGDC also competitively awarded over 35 new Cooperative Agreements as part of its ongoing program to encourage resource-sharing projects under the NSDI.

On July 18, 2000, the Deputy Secretary of the Department of the Interior and members of the

FGDC hosted a Geospatial Information Technology Roundtable with the Office of Management and Budget (OMB) to discuss existing and new policies that would make geospatial data a fundamental element of e-government activities. About 150 people participated in the Roundtable, including representatives of state, and local governments, the private sector and academia. Since then many of these representative have formed ongoing teams to "align" geospatial data from various sources. The FGDC already is working closely with the Vice President's National Partnership for Reinventing Government to make geospatial information available to users of the FirstGov search engine (described below) and a planned Interactive Town Square.

C. E-Government

While governments in the past have often adapted slowly to the latest technologies, Vice President Gore has had the vision to re-invent government for the Information Age. The Clinton-Gore Administration has seized on the potential of digital technologies to transform government. Through the aggressive use of the World Wide Web and other information technologies, our government has become more efficient, responsive, and accountable than ever before. It is also more accessible. Many government services now are available at a citizen's fingertips seven days a week, 24 hours a day, 365 days a year. Anyone with access to a computer and an Internet connection has a gateway to a universe of government information. In the past, applying for government service often required standing in line; today, many of the most critical services are available online. Getting government information used to require searching for an obscure pamphlet; today it means accessing a central website.

> *"Under the leadership of Vice President Gore, we have greatly expanded the spread of information technology throughout the government, cutting reams of red tape, putting vast resources at the fingertips of all of our citizens."*
>
> President Clinton
> June 24, 2000

The ongoing conversion of government information and applications to a digital, accessible format also has enhanced citizen access by causing government agencies to simplify and clarify government information and re-think the relationship between themselves and their customers. Simply put, today's Federal government can deliver solutions to citizens at Internet speed. By the end of December 2000, the public will be able to download from the Internet and print the forms for 500 of the most used government services. Among the forms already available online are those that allow users to pay their taxes, apply for student loans, get a Social Security card, volunteer for the Fish and Wildlife Service, enlist in the U.S. Army, enter a science fair competition, or even file for bankruptcy. Users can fill and submit many of the forms directly from their computer. We expect all appropriate government services to be available via the Internet by 2003.

1. Providing One-stop Government Information

A key Administration goal has been to create a simple, straight-forward mechanism for the public to locate information and services available from the U.S. Government, without the need to know which Federal agency to contact. In June, in a webcast to the country, President Clinton announced a plan to create a comprehensive FirstGov.gov website, a single online portal connecting users to all government sites, one of the largest and most useful collections of web pages in the world. The President challenged government and industry to create a site that allows citizens to search government information faster and more efficiently than ever before and by topic rather than by agency. He also challenged government and industry to finish it within 90 days. The site launched on schedule in September of 2000 (http://www.firstgov.gov).

"This new site is a powerful tool for restoring trust in government's more basic mission — to help, serve, listen, and respond to the American people."

Vice President Gore
September 22, 2000

FirstGov Power

FirstGov.gov allows users to search all 27 million Federal agency web pages at one time. The FirstGov search engine can search half a billion documents in less than one-quarter of a second, and handle millions of searches a day. To speed searches, FirstGov allows citizens to find information intuitively — by subject or by keyword.

The private sector has played a key role in creating FirstGov and now is helping broaden its reach. The FirstGov search engine was built as a gift to the government by Dr. Eric Brewer, a University of California, Berkeley researcher who is the co-founder and Chief Scientist of Inktomi Corp., a company that provides search engine technology to a number of Internet companies. To reach out to even more users, FirstGov has solicited partnerships with private sector, academia, state and local governments, and non-profit organizations. FirstGov partners give their customers the capability to search U.S. Government websites for relevant information and services, or link to the FirstGov website to perform the search. Partners benefit by adding a valuable service for their customers, and the U.S. Government builds awareness of FirstGov. Most of all, U.S. citizens benefit by being able to obtain government information and receive government services online from a variety of starting points. To date, GSA has signed up over 30 private sector partners.

While the FirstGov site provides unprecedented search capabilities, it also provides access to the home pages of major agencies and entities in all three branches of government, a section that provides topics of current interest to web users (e.g., a direct link to the Weather Service during hurricane season, to NASA during a shuttle launch, or to IRS during tax season), and key sites for access to State and local government web pages.

FirstGov also links to many government websites that provide access to government information organized not by agency, but by the type of service or topic. These sites were established through Vice President Gore's Access America Initiative, a government-wide effort to provide Internet access and services organized to meet the needs of specific communities. Through Access America, over 40 Federal agencies have been working together on web portals directed to those with disabilities (http://www.disabilities.gov), seniors (http://www.seniors.gov), businesses (http://www.business.gov), students (http://www.students.gov) and workers (http://www.workers.gov). The portals provide information, news, and some capabilities for online interactions with Federal agencies and programs that serve the target citizen groups.

2. Moving Government Procurements Online

Another key Administration e-government goal has been to save taxpayers money by using digital technology to make government more efficient and cost-effective. In fact, the General

Services Administration (GSA) already has made significant progress in using electronic commerce to facilitate faster, cheaper Federal procurements:

- GSA Advantage! allows Federal employees to access quality products and services and order them directly over the Internet at a reduced government price. The number of items on Advantage grew by 57 percent and sales grew by 50 percent in 2000 with over a million dollars per day in sales in late September.

- FedBizOpps allows agencies to post contracting opportunities on the web and vendors to download these notices directly from the Internet. This service started as a five-agency pilot, but now some 19 agencies participate and nearly 60,000 vendors are registered to receive notification of business opportunities. Over 3 million searches for opportunities have been performed.

- The SmartPay program provides purchase, travel and fleet charge cards to Federal agencies. Use of purchase cards streamlines procurement, invoicing and payment processes, saving the Federal government $1.1 billion in FY 1999 alone on total sales of $14.8 billion. Participants in the program are eligible for refunds tied to sales volume and payment performance. In FY 1999, contractor payments to agencies for refunds totaled over $55 million. SmartPay sales continue to grow at a rate exceeding 20 percent annually.

3. Implementing Electronic Filing

The government is moving quickly to stimulate the use of electronic filing. The Government Paperwork Elimination Act (GPEA) was enacted in October 1998. Under GPEA, agencies must generally provide for the optional use and acceptance of electronic documents and signatures, and electronic record keeping when practicable. The Act is intended to increase the ability of citizens to interact with the Federal government electronically. It specifically provides that electronic records and their related electronic signatures are not to be denied legal effect, validity, or enforceability merely because they are in electronic form, and calls upon the Federal government to use a range of electronic signature alternatives.

Agencies submitted plans on implementing GPEA by October 31, 2000. Those plans were consistent with the principles that new electronic processes are compatible with accepted technical standards; do not inappropriately favor one industry or technology; ensure an appropriate level of reliability and security; provide for electronic acknowledgments; allow multiple signature methods for large-volume filings; achieve an efficient transition to electronic commerce. These plans will provide a road map for the Federal government transition to electronic government and allow us to focus our resources on those initiatives that can provide citizens with an efficient and responsive government. By October 21, 2003, all agencies are required to have electronic filing and electronic signature capabilities in place.

4. Developing a Public Key Infrastructure

The Administration recognizes, as does the private sector, that online security is essential to safeguard transactions and privacy of those who use e-commerce methods. As a result, a Federal Public Key Infrastructure Steering Committee, representing more than 24 agencies, has worked to establish a growing U.S. Federal Public Key Infrastructure (PKI) to facilitate trusted communication among government agencies, between government and their trading partners, and between government and the public. PKI verifies the identity of the parties to an online transaction, ensures data has not been altered in transit, prevents a party from repudiating having sent a message, and makes certain that data remains confidential in transit. Ultimately, the delivery of high-value or sensitive benefits and information online depends upon establishing a PKI to insure security, privacy, and legally protected transactions in an electronic environment.

A number of agencies already have established operational PKIs that can authenticate and protect transactions. To encourage Federal agency implementation of PKI technology, GSA in partnership with industry, has made 500,000

certificates available to interested agencies at no cost for issuance. In July 2000, the Department of Veterans Affairs (VA) and the Federal Emergency Management Agency were granted another 110,000 certificates for use in providing online capabilities to their constituents and partners. Another 20 agencies have issued approximately 65,000 certificates to employees, contractors and business partners. In addition, the U.S. Postal Service has issued over 300,000 certificates for use in their electronic postage service. This number is expected to double by the end of this year.

A number of agencies, including the Health Care Financing Administration and other parts of the Department of Health and Human Services, the Defense Department, the Social Security Administration and the Veterans Administration, are now evaluating options for a pilot project to initiate the use of PKI for cross-agency health care applications.

5. Putting Government Services Online

The Digital Revolution has the potential to make government more efficient and its services more accessible. The Clinton-Gore Administration is committed to delivering on this promise, and getting citizens online and out of government lines. Many agencies, in fact, are moving aggressively to become models of Information Age government.

"One important way to make government cheaper, faster, and better is by putting more critical services on the Internet, and taking full advantage of the information revolution that is taking place in private industry."

Vice President Gore
April 25, 2000

The Social Security Administration (SSA), for example, has posted 28 frequently used forms on its website and plans to post an additional 40 by the end of 2000. More significantly, it announced that as of November 2, 2000, the public can apply for Social Security retirement benefits online at its "Apply to Retire" website (http://www.ssa.gov). New applicants can fill out the online application, send it to the agency electronically, and track their claim online. The Social Security Administration uses the strongest commercially available encryption to ensure that an applicant's confidential information remains secure in transit. The SSA also offers an Online Retirement Planner that allows users to compute future Social Security benefits online. Among other services, the site offers in-depth information on factors affecting eligibility. Users can determine whether they qualify for payment and, if not, how to become eligible.

The Veterans Administration (VA) started similar services on November 3, 2000, which allow veterans to apply for health care, and other benefits quickly, easily and securely. One system, initially tested at 30 VA facilities, allows veterans to fill out and submit an Internet-based health care application that is automatically e-mailed to the VA health care facility he or she selects. VA employees register the data, print the form and mail it back to the veteran for signature. Veterans also can print out the completed form and mail it to a VA health care facility themselves. Using the other service, "Veterans On Line Applications" (VONAPP), veterans can apply for compensation, pension, and vocational rehabilitation benefits and send completed applications electronically to their local VA office (http://vabenefits.vba.va.gov/vonapp). Processing begins right away and veterans receive a response letting them know the status of their applications. Later this year, VA plans to offer applications for educational benefits on the Internet. Currently, veterans attending school under the Montgomery GI Bill can make their monthly certification of enrollment online as well. Eventually, the VA aims to put all its health care and benefits applications online.

During the last year, the Department of Education also has expanded significantly the electronic delivery of benefits to students and its educational partners. These new services have simplified and expedited the delivery of benefits and information. At the Department's "Borrower Services" site, for example, users can complete a loan consolidation application online or download it to a computer and mail a hardcopy to the Department's Consolidation Center. An online "status look-up" function enables borrowers to track their consolidation as it

moves through the consolidation process (http://loanconsolidation.ed.gov/borrower/borrower.shtml).

The Department of Education also has reengineered a number of reporting processes over the last six months. It's web-based "Forms 2000" software has reduced reporting requirements for the Department's partners by consolidating three paper reports into a streamlined electronic form. This streamlining and improved data also has enabled the Department to make payments to these partners more quickly, and reduced error rates and reconciliation and correction efforts.

The Department also has unveiled, revamped or expanded the use of other sites:

- To make it easier to access student aid, the Department's Office of Student Financial Assistance (SFA) recently posted all relevant software and documentation on the Internet. The website saves time and money by eliminating paper and diskette copying of forms. Over the past six months, it has saved SFA over $2.5 million while improving customer service (http://ifap.ed.gov/dev_csb/new/home.nsf).

- The Department continues to improve Direct Loan Servicing by making more loan-servicing functions available to borrowers online. The newly redesigned Direct Loan Servicing website has earned the prestigious Government Technology Leadership Award from Government Executive Magazine. The website was chosen from more than 60 nominations (http://dlservicer.ed.gov).

- Over the last six months, students have requested over five million new personal ID numbers — for a total of twelve million to date — so that they can file Free Applications for Federal Student Aid (FAFSA) over the web (http://www.fafsa.ed.gov). Over the past year, more than four million (FAFSA) have been processed electronically.

The Equal Employment Opportunity Commission (EEOC) has expanded its website and redesigned it to make information more easily accessible. The website received approximately 100,000 visitors per month on average during fiscal year 1999, a 50 percent increase. EEOC's web site has been selected as one of the nation's top 100 Internet sites for new companies by *Entrepreneur Magazine* and has been featured in *PC Magazine* and the *National Law Journal*. The website also was designed and is constantly being upgraded to provide accessibility to disabled persons. It meets the World Wide Web Consortium's Web Content Accessibility Guidelines and draft standards under the Rehabilitation Act. Users using any web browser or any adaptive equipment — such as screen readers, speech-based browsers, and Braille terminals — can access the site. The website also meets or exceeds the standards proposed by the Access Board, and has done so since it was launched in 1997.

6. Facilitating Electronic Payments

The U.S. Government is working hard to accelerate the use of electronic payments in Federal government financial transactions and in the economy overall. Few Americans realize, however, that it already has achieved compelling results. The Federal Government now collects electronically and spends electronically the vast majority of money it handles, improving efficiency and saving the taxpayer money. The Department of Treasury runs one of the largest payment collection systems in the world and collects electronically more than $1.3 trillion of U.S. government revenue, approximately two out of every three dollars. In 1999, the first year for which detailed information is available, the Federal government paid 78 percent of its 959 million payments electronically. That includes 96 percent of salary payments, 81 percent of vendor payments, and 73 percent of benefit payments.

To achieve these successes, Department of Treasury has implemented a number of initiatives. The Electronic Transfer Account (ETA) Program, for example, enables recipients of Federal benefit, salary, or retirement payments who do not have traditional bank accounts to receive their payments by Direct Deposit through a low cost account with the same consumer protections available to other account holders. With the ETA, all benefit recipients can enjoy

the safety and convenience of receiving their Federal payments by electronic funds transfer. Users can access an Internet site to search by ZIP code, city, or state for financial institutions certified to offer the ETA.

Electronic Federal Tax Tax Payment System

The Electronic Federal Tax Payment System (EFTPS), implemented in 1996, processes electronic payments from taxpayers to the Internal Revenue Service (IRS). In FY 1999, EFTPS processed 55 million transactions for over 2.3 million taxpayers with an error rate of only 0.08 percent, or one-nineteenth that of the paper system it is replacing. EFTPS is among the world's largest collection mechanisms. In 1999, it accelerated over $1.35 trillion to the Treasury by more than one day.

To facilitate payments to the U.S. Government, the Financial Management Service in the Department of Treasury also established an Internet Credit Card Collection System (ICCC). Federal agencies can now offer better customer service through acceptance of credit cards over the Internet for goods and services. In FY 1999, total collections through the ICCC reached $14 million. This total is expected to increase significantly in FY 2000.

To expand on these successes, the Department of Treasury launched in July 2000, a program to create a secure government-wide payment and collection portal. When operational (in 2002), Pay.gov will be a one-stop shop for making government payments over the Internet. Corporations and citizens will be able to use the site to pay electronically government fees, fines, sales, leases, donations, and certain taxes — everything from camping licenses to corporate fines. Many of these transactions are currently processed through paper lockbox collections and over-the-counter.

The Pay.gov site also could be used for direct electronic processing of government forms, such as direct deposit enrollment forms or order forms for government products like U.S. Mint coins and maps from the National Park Service. Individuals will be able to view agency bills, while agencies will be able to immediately view and share information about bills paid, forms completed or purchases made. This program has the potential to process 80 million transactions, totaling $125 billion each year. After a year of technical development, the Department of Treasury expects to conduct a pilot project with five government agencies starting in February 2001.

The Department of Treasury also expanded this year a pilot program that lets vendors accept taxpayers' credit card payments of federal taxes and send them to the Treasury through EFTPS. The program was expanded to include estimated taxes and tax payments with filing extensions. The Department of Treasury also will launch a pilot Internet application in early 2001 to encourage small businesses to enroll in the program and begin paying taxes through EFTPS. The web application also will allow small businesses and other taxpayers to enroll, view their account history, and obtain customer service over the web.

Stored Value Cards

The Departments of Treasury and Defense have expanded the use of stored value cards to replace cash and paper payroll systems for military personnel. In fact, the Department of Treasury is now the world's largest issuer of smart cards. Its stored value card programs are the largest in the United States with over $80 million in transfers, representing 3 million transactions and 375,000 cards. The program, which is still expanding in the United States, also is used at several peacekeeping bases in Bosnia and at facilities in Hungary. All soldiers, civilians, and contractors stationed at these camps use stored value cards to receive their salary and make payments to merchants on the base. Use of the card in Bosnia has significantly reduced cash requirements and the support costs related to holding and securing cash.

The Department of Treasury also is developing or testing a variety of new payment systems, including digital cash and digital checks for vendors. Designed specifically for the Internet, electronic checks (e-checks) are created on a

computer, digitally signed, and e-mailed with payment related information to a payee. The payee then verifies the identity of the payor, endorses the check with his or her own digital signature, and e-mails the e-check to a financial institution for deposit. The Department of Treasury's Financial Management Service (FMS) first began testing e-checks in 1998. Since that time, over $10 million dollars in e-checks have been processed. Electronic checks have the potential to substantially reduce agency administrative costs, and may serve as a model for private sector efforts.

The Department of Treasury also has been a leader in accepting electronic payments for its own services and products. Auctions of Treasury securities, for example, are now entirely electronic, and consumers holding Treasury securities through the Treasury Direct program can make purchases or reinvest on line or through an automated phone system. Savings bonds also can be purchased over the Internet 24 hours a day, 7 days a week, using one of several major charge cards. In fact, the "Savings Bond Connection" is one of the most popular Department of Treasury websites and its success has far exceeded initial expectations. The Department of Treasury 's State and Local Government Securities program also enables state and local governments to invest in special-purpose Treasury securities, access their accounts and conduct transactions electronically. Transactions often total several million dollars and are secured by digital certificates and paid by electronic funds transfers.

In addition, the Department of the Treasury hosted a conference on electronic financial transactions and payments in Washington, D.C. in September 2000. The conference brought together key government and industry leaders in electronic payments innovation to discuss new developments in electronic payments systems and the public policy issues they raise. The conference featured CEOs of firms that are developing new payment mechanisms or improving existing systems for use on the Internet, developing ways to make moving money on the Internet safe and more secure, and finding ways to address privacy issues raised by electronic payments(http://www.treas.gov/ofi/agenda.htm).

7. Other Government Services and Information Available Online

The initiatives listed above are only some of those the U.S. Government has undertaken. Some of other initiatives (current and planned) that make it easier than ever to access government services are listed below:

> *"The power of government should not be locked away in Washington but put at your service, no further than your keyboard."*
>
> Vice President Gore
> July 2000

- The millions of Americans who value and use recreational facilities can now make reservations at more than 5,000 government-administered campsites nationwide through the Forest Service's online reservation system, computer kiosks at field sites or over the telephone (http://www.recreation.gov).

- Applicants for Federal trademark registration can now apply online through the newly enhanced U.S. Patent and Trademark Office Trademark Electronic Application System (TEAS). TEAS now allows almost all trademark-related forms, including applications, to be submitted directly to the trademark examining operation over the Internet. Over 10 percent of all trademark applications at the USPTO are now received electronically (http://teas.uspto.gov/).

- Small businesses working to expand their use of IT to remain competitive in today's global economy can use an "IT Management Planning Tool" a CD-ROM developed by the Department of Commerce's ITA. The tool is a self-guided, step-by-step assessment of a company's IT use. It also helps companies plan for additional IT related investment improvements. The CD-ROM includes a video on the benefits of information technology, a user's manual and informational Internet links.

- Small business owners will be able to learn about legal and regulatory issues from patents to tax identification to e-commerce

at SBA's Electronic Legal Clinic. SBA began development of this interactive resource in 2000.

- Small business owners also can seek online small business partners, contractors, sub-contractors, technology and research partners, manufacturers and investment opportunities on SBA-Net, a free network of several electronic gateways (http://www.sbanetweb.com/).

- Employers and employees can learn how to comply with numerous employment laws enforced by the Department of Labor by going to Elaws (http://www.fdol.gov/elaws/). This interactive site contains electronic "Elaws Advisors" that give advice and provide information on a specific law or regulation based on the user's particular situation.

- Agricultural exporters can now use the Department of Agriculture's, Foreign Agriculture Service (FAS) website to apply for export credits. FAS has combined a number of programs and cumbersome paper processes into a single streamlined online application process. Over 90 percent of all applications that FAS receives are now submitted through the FASOnline website (http://www.fas.usda.gov/).

- Importers of fruits and vegetables, animal products, organisms, and other vectors now can submit applications to the Department of Agriculture Animal and Plant Health Inspection Service on its new Import Authorization System. Customers also can check the status of and submit revisions to an existing application (https://Web01.aphis.usda.gov/ias.nsf/Mainform?OpenForm).

- Consumers in inner-city Baltimore, Maryland and outside Tallahassee, Florida can now use no-fee ATMs in six post offices. As a pilot project to test the demand for and economic viability of ATM transactions among residents of communities that lack access to conventional banking services, the Department of Treasury, in cooperation with the U.S. Postal Service, unveiled no-fee ATMs in November 1999.

- To help the public prepare for natural disasters and reduce disruption and loss, the Federal Emergency Management Agency (FEMA) has placed electronic maps on the Web that chart the history of tornadoes, hurricanes, hailstorms, earthquakes, windstorms and floods in any area in the United States. The electronic mapping project will enable local governments and the public to make decisions about whether to buy certain types of disaster insurance, how much local revenue to devote to disaster preparation, and whether to develop land that might be highly susceptible to flooding (http://www.esri.com/hazards/).

- State agencies, local governments, and private non-profit organizations will be able to request public assistance via the Internet after a disaster through the Federal Emergency Management Agency's Electronic Service Project. This project will eliminate time-consuming paper-based procedures and processes without special telecommunications or computer equipment.

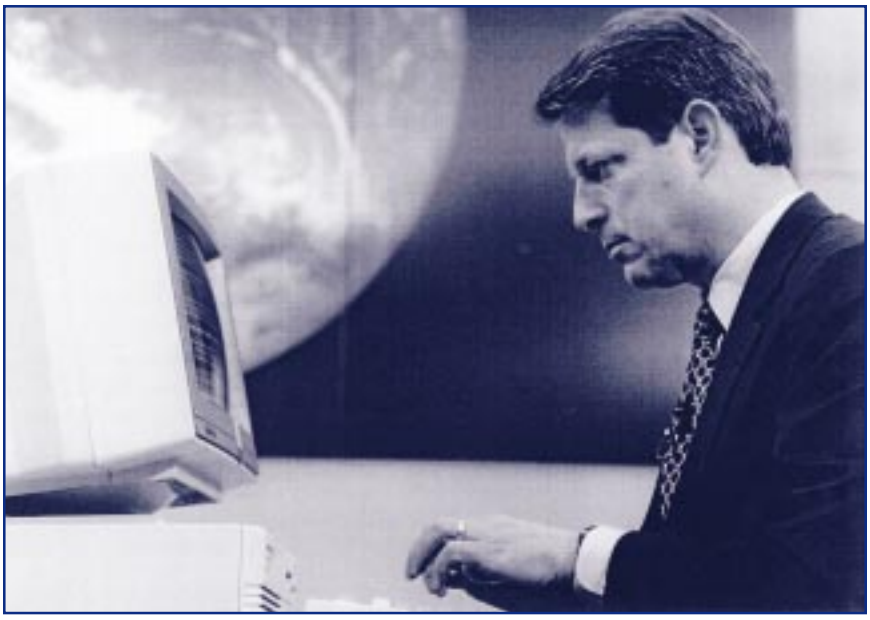
- FEMA's claims staff can now identify and respond to troubled claims before they are closed, using FEMA's new Quick Claims reporting system that began operating during the 2000 flooding season. The Quick Claims system also has given mitigation experts early access to claims data when flooding occurs.

8. Improving Government Accountability and Efficiency

To improve the accessibility and accountability of government officials, all cabinet-level agencies also have created public electronic mail addresses. Both President Clinton and Vice President Gore also have public e-mail addresses. In addition, all agencies provide specialized e-mail addresses for high profile programs

> *"It is the heart of what we must do to revitalize the ideal that has animated our democracy since its founding: that people are the master and government is the servant."*
>
> Vice President Gore
> July 2000

or agency organizations. The Department of Education, for example, which handles 12,000 e-mails per month, has approximately 800 unique e-mail addresses for public inquiries.



In addition, the U.S. Government's Chief Information Officers' Council has created the Federal White Pages (http://directory.gov). The White Pages provide a searchable database of e-mail and telephone contact information for over 400,000 Federal officials in 20 Departments and agencies. Citizens also can access the White Pages wirelessly from most Internet-ready telephones. The General Services Administration's complementary Federal Blue Pages (http://bp.fed.gov) allows citizens to look up organizational contacts or a specific government service.

Most agencies have instituted enterprise-wide efforts to use the Internet to become more efficient and responsive. Several agencies have created new offices of Electronic Government or Electronic Commerce to oversee the expanding use of the Internet and Intranet to deliver convenient, interactive services quickly and easily. Many Federal government agencies also are educating senior policy and management personnel about how to more effectively use technologies like the Internet through online self-assessments, distance learning, virtual libraries, virtual universities, information technology fairs, Web-based newsletters, Webmaster certification training courses, and learning portals. Through partnerships with the private and public sectors research communities, many agencies also are developing advanced applications that will transform the way government operates, the way it interacts with business, and the way it delivers services, information and engagement opportunities to individuals.

Finally, to share "best practices" in the government, the National Partnership for Reinventing Government and the E-Government Committee of the Chief Information Officers Council has created a web-searchable database of "Success Stories in E-Government." This database contains over 200 success stories related to e-government activities at federal, state, and local levels. The database, which is managed by the Chief Information Officers Council, will be accessible by the public in January 2001.

9. Exploring E-voting

To explore the feasibility of online voting, the National Science Foundation sponsored the Internet Policy Institute e-Voting Workshop on October 11-12, 2000. Conducted in cooperation with the University of Maryland and hosted by the Freedom Forum, the workshop sought to identify the critical issues relating to online voting, assess the status of current knowledge with respect to those issues, and define an agenda for future research. The approximately 30 panelists and 80-90 attendees at the workshop addressed many aspects of online voting from both a technical and social science perspective, including:

- Participation in elections;
- Security and reliability of the voting process;
- Protection of voter privacy;
- Authentication of voter identity;
- Broad and equitable access to voting;
- Representative democracy and community; and
- The convenience and cost-effectiveness of voting systems.

Panelists included information technology experts, social scientists, and election officials. Attendees included representatives from the United Nations, Switzerland, Denmark, Canada, and several states, vendors of electronic voting software and services, voting-related non-governmental organizations, as well as academic researchers. The workshop project team is drafting a report on the workshop, and will post it at http://www.netvoting.org in 2001. The project team will then solicit comments on the report from the public and interested groups for inclusion in the final version.

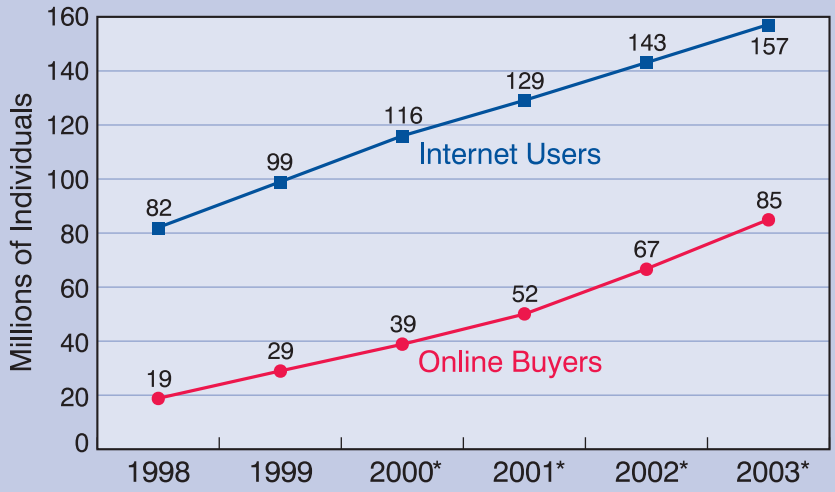
II. Enhancing Consumer Confidence

Consumer confidence in online sales requires adequate security, respect for privacy, and protection from unfair, deceptive, and fraudulent commercial conduct. The U.S. approach to securing these protections relies on a combination of private sector self-regulatory initiatives, government enforcement of existing legal protections, and efforts to better inform consumers. Moreover, both the private sector and governments must share information and cooperate across borders to ensure that these efforts are effective in a global marketplace.

A. Consumer Protection

Consumers should have equivalent rights and protections when shopping online as they do in the physical world. However, ensuring those rights and protections involves additional challenges in the online world. The Administration has undertaken many efforts — both domestically and internationally — to ensure effective consumer protection online, including promoting the development and implementation of alternative dispute resolution and other self-regulatory mechanisms, ensuring the enforcement in the online world of existing consumer protection laws, and taking important steps to educate consumers and businesses on consumer protection issues.

Consumers Engaged in E-Commerce Activities



**Projected*
Source: Jupiter Communications, in The Industry Standard.

1. Alternative Dispute Resolution

Transactions between buyers and sellers online might not always go smoothly. For consumers to participate in electronic commerce, they must have confidence that they can seek redress if some aspect of the initial transaction is unsatisfactory. The global nature of e-commerce, however, complicates the issue because choice of law, jurisdiction and liability rules vary significantly

among countries, and causes uncertainty about consumer rights and business obligations in cross-border transactions. Even if issues of applicable law and jurisdiction could be adequately resolved, international private litigation over small-value Internet transactions generally does not make practical or economic sense. Alternative dispute resolution can be a practical way to provide consumers with fast, inexpensive, and effective remedies, and can reduce businesses' exposure to foreign litigation. For this reason, the Administration has promoted collaborative efforts among the private sector and consumer groups to develop and implement fair and effective *Alternative Dispute Resolution* (ADR) mechanisms for online transactions as one means of promoting consumer confidence and participation in electronic transactions.

Many organizations and stakeholders have expressed interest and support for ADR mechanisms, including the Organization for Economic Cooperation and Development (OECD), the Global Business Dialogue on Electronic Commerce, the Internet Law and Policy Forum, the Trans-Atlantic Business Dialogue, the Trans-Atlantic Consumer Dialogue, and participants at a June 1999 Workshop on Consumer Protection. The Department of Commerce and the Federal Trade Commission held a workshop in June 2000 **(**http://www.ftc.gov/bcp/altdisresolution**)** to promote discussion among interested stakeholders on how ADR programs can foster consumer confidence without unduly burdening business. Representatives of industry, consumer groups, and government explored new and innovative ADR models and exchanged ideas on how to balance competing needs.

Participants indicated that continued cooperation from industry, consumers, and government was essential. They also believed that governments should adopt flexible public policies that will allow the private sector and consumer groups to develop and implement new and innovative ADR technologies and mechanisms, and noted that both consumers and businesses needed to be educated in the new dispute resolution mechanisms. In addition, they supported law enforcement for unfair and deceptive practices related to the use of ADR for Internet transactions.

The U.S. Government issued a joint statement with the European Union on this issue at the December 2000 US-EU Summit. In addition, in December 2000, the Department of Commerce and the Federal Trade Commission will participate in the first major multilateral conference addressing online ADR which will be jointly sponsored by the OECD , the Hague Conference on Private International Law, and the International Chamber of Commerce.

2. E-commerce at Home and Abroad – Domestic and International Consumer Protection

The Administration has challenged the private sector to work with consumer groups to implement effective consumer protection practices online. This approach helps to ensure the application of a fair and predictable set of rules across countries and regions, and also reduces the complications of jurisdiction and applicable law. This year, in response to the Administration's challenge, the Better Business Bureau's online division, BBB*OnLine*, worked with industry, consumer representatives and governments and issued a code of conduct (http://www.bbbonline.com/code/codeenglish.pdf). Businesses adhering to the code must disclose terms of sale, avoid unfair and deceptive advertising, register with the local Better Business Bureau, and meet other reliability standards in order to display a reliability seal. In addition, these businesses must commit to participate in alternative dispute resolution proceedings. The Administration sees the BBB*OnLine* Reliability Program as a model for voluntary actions that can promote consumer confidence in online transactions. Other important efforts are also underway. For example, the Electronic Commerce Consumer Protection Group, whose members include AOL, American Express, AT&T, Dell, IBM, Microsoft, Time Warner and Visa, issued a code of conduct for online business in June 2000. This code is an important statement of best practices for web merchants, and encourages merchants to participate in fair and effective dispute resolution mechanisms (http://www.ecommercegroup.org/guidelines.htm).

In December of 1999, the Administration launched a pilot project at the Consumer Product Safety Commission called Operation Safe Online Shopping (SOS). Under this project, the CPSC monitors websites for recalled, illegal, and potentially hazardous consumer products. CPSC investigators, posing as consumers, also shop for items that could be dangerous to consumers. The purchased items are checked for compliance with federal safety standards. CPSC has found dangerous products being sold online, including flammable children's sleepwear, prescription drugs without child-resistant packaging, and defective power tools.

Since the Internet facilitates international commerce on an unprecedented scale, consumer protection can not stop at the border. Accordingly, the Administration has worked with our trading partners to share information and develop policy. We also have worked with industry and consumer representatives to promote global codes of conduct, reliability programs, and related mechanisms.

In December of 1999, the Federal Trade Commission (FTC) and other U.S. agencies, working closely with industry and consumer advocates, participated in the OECD's effort to produce guidelines for consumer protection online (http://www.oecd.org/dsti/sti/it/secur/prod/PRIV-EN.HTM). The United States will participate in a conference on implementing the Guidelines to be held in March 2001.

In June 1999, the FTC, with participation from the Department of Commerce and the United States Trade Representative (USTR), conducted a public workshop on Consumer Protection in the Global Electronic Marketplace. The participants, including foreign representatives, academics, industry members, and consumer advocates, discussed issues such as jurisdiction, international agreements, and private sector initiatives. In September 2000, the FTC issued a report on this workshop, called *Consumer Protection in the Global Electronic Marketplace: Looking Ahead* (www.ftc.gov/bcp/icpw/lookingahead/global.htm). The report's recommendations include promoting incremental convergence of international consumer protection laws, enhanced cross-border judgment recognition and enforcement, private sector initiatives to better inform consumers and prevent disputes, and international law enforcement cooperation.

The Administration also encouraged international consumer protection by working with groups such as the Free Trade Area of the Americas joint government-private sector Committee of Experts on E-Commerce, the Global Business Dialogue on Electronic Commerce, the Trans-Atlantic Business Dialogue's Electronic Commerce Working Group, and the Trans-Atlantic Consumer Dialogue.

3. Education to Protect the Consumer

Acting on the basis that the best-protected consumer is an educated consumer, the Administration has worked hard to increase consumer awareness. For example, the Federal Trade Commission has used the Internet to alert consumers to the telltale signs of fraud, the importance of privacy in the information age and other critical consumer protection issues. More than 200 of their consumer and business publications are available on their website (http://www.ftc.gov/ftc/consumer.htm). The number of publications viewed online in 1999 (2.5 million) compared to 1996 (140,000) tells the story of the Internet's coming of age. Those 2.5 million page views are in addition to the 6 million print publications distributed each year.

Knowing that many consumers use the Internet to shop for information, the FTC has developed "teaser" sites that mimic the characteristics of a fraudulent site (http://www.ftc.gov/reports/fraud97/consumer.htm). The teaser pages link back to the FTC, where consumers can find the practical, plain English information they need. The agency has developed 14 teaser sites on topics such as health care products and investments.

The FTC provides resources for online marketers using a variety of approaches such as compliance guides, brochures, public addresses, web-based public service announcements, and workshops on issues of interest. Among the publications for business that have been distributed widely in print and online are *Advertising and Marketing on the*

Internet: Rules of the Road (http://www.ftc.gov/bcp/conline/pubs/buspubs/ruleroad.htm) and *Dot Com Disclosures: Information About Online Advertisers* (http://www.ftc.gov/bcp/conline/pubs/dotcom/), which describes how the FTC's advertising and marketing rules apply online. In addition, two business alerts *Selling on the Internet: Prompt Delivery Rules* (http://www.ftc.gov/bcp/conline/pubs/alerts/intbalrt.htm); and *Website Woes: Avoiding Web Service Scams* (http://www.ftc.gov/bcp/conline/pubs/alerts/webalrt.htm) have been widely disseminated. The FTC also has issued consumer and business education materials specifically related to the OECD Guidelines on Consumer Protection in Electronic Commerce (www.ftc.gov/bcp/conline/pubs/alerts/ecombalrt.htm and www.ftc.gov/bcp/conline/pubs/alerts/glblalrt.htm).

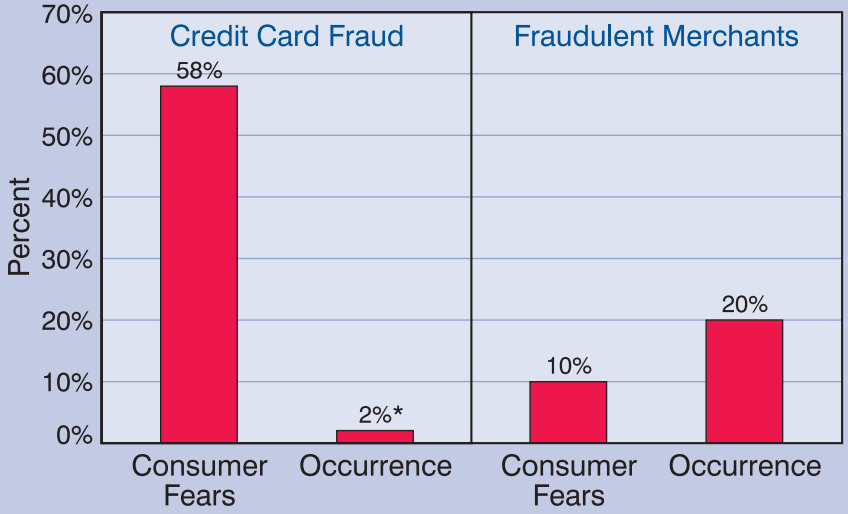
Under a law passed in 1998, the Federal Trade Commission is responsible for establishing a "centralized complaint and consumer education service" for victims of identity theft.[38] Over the past year, the FTC has established an Identity Theft Hotline and an Identity Theft Data Clearinghouse. On the hotline (toll-free, 877-ID THEFT), consumers can report identity theft. The data clearinghouse is the Federal government's centralized identity theft database used for law enforcement over a secure website. The FTC also has developed education materials including a website devoted to identity theft issues (http://www.consumer.gov/idtheft) and a comprehensive booklet on identity theft, *When Bad Things Happen to Your Good Name*. (http://www.ftc.gov/bcp/conline/pubs/credit/idtheft.htm)

The Consumer Product Safety Commission (CPSC) also has taken an active role in consumer protection and education. In March, eBay and Amazon.com agreed to link their sites to the CPSC site (http://www.cpsc.gov/cpscpub/prerel/prerel.html) and post guidance for consumers about recalled products. This initiative focuses on popular products such as children's toys, tools, exercise equipment, and household items. eBay also links to CPSC from its website (http://www.members.ebay.com/aboutme/uscpsc); CPSC received 25,000 hits from eBay users the first month this link was in place. To make sure that their educational outreach reaches the greatest number of people, the CPSC website has added Spanish language pages (http://www.cpsc.gov/cpscpub/spanish/spanish.html) and the major Spanish television networks, Univision and Telemundo, have links to the CPSC from their websites.

4. Enforcing Consumer Protection Laws Online – Protecting the Consumer Against Fraud

The U.S. Government continues to fight misleading and deceptive practices online. For example, the Federal Trade Commission has brought 165 enforcement actions against 564 violators of existing law ranging from pyramid schemes and miracle cures to sophisticated

Consumers' Online Fraud Concerns Are Misplaced



**Based Strictly on Consumer Self-Reporting.*
Source: Bizate.com, National Consumers League.

scams in which a consumers' ability to control their Internet access or the websites they visit are altered (http://www.ftc.gov/os/index.htm). These actions are both domestic and foreign. The FTC has gained redress for thousands of consumers in 68 foreign countries. In order to combat the growing problem of international fraud, the FTC has entered into law enforcement cooperation agreements with Canadian and Australian agencies. The FTC cooperates in law enforcement investigations with the consumer protection agencies of 29 countries through its membership in the International Marketing Supervision Network (http://www.imsnricc.org). The FTC also has conducted domestic and international fraud training sessions for law enforcement personnel.

The FTC is using new weapons in the fight against Internet fraud. Last year, it established an Internet Lab, which allows investigators to search for fraud and preserve evidence in the event of a criminal proceeding. In 1997, the FTC established Consumer Sentinel (http://www.ftc.gov/sentinel), a fraud complaint database for enforcement officials in the U.S., Canada, and Australia. The Consumer Sentinel database contains over 44,000 complaints specific to the Internet. The proportion of Internet-related complaints has risen quickly from 13 percent of all complaints in 1998, to 25 percent in 1999, to almost 30 percent so far this year. Approximately one in eight Consumer Sentinel complaints involve foreign consumers or companies.

The FTC also has used "Surf Days" to deter fraud. The first occurred in 1996 and focused on pyramid schemes. Commission investigators enlisted the assistance of the SEC, the U.S. Postal Inspection Service, the Federal Communications Commission, and 70 state and local law enforcement officials from 24 states. During a three-hour surf, this task force found over 500 websites or newsgroup messages promoting what appeared to be pyramid schemes. FTC staff then sent e-mails to the individuals or companies, warning them that pyramid schemes violate federal and state law and providing them a link to the FTC for more information. The FTC has led 16 of these surfs with over 150 other agencies and 28 countries identifying some 5,000 sites making dubious claims. In the most recent, the target was "get rich quick schemes." During a compliance follow-up a month later, 40 percent of the problem sites were either gone or had changed their representations. The others remain under investigation.

B. Ensuring Privacy on the Internet

Because consumers continue to cite privacy concerns as a reason not to use the Internet, efforts to improve privacy should increase consumer confidence about participating in online communications and business. The Administration continues to support industry self-regulatory initiatives as an effective approach to create meaningful privacy protections. In certain highly sensitive areas, however, the Administration has consistently supported legislative solutions. These sensitive areas include financial and medical records, genetic information, social security numbers, and information involving children (http://www.cio.gov/docs/privacylist.htm).

1. Privacy Protection Through Self-Regulation and Example

The importance of protecting online privacy continues to grow. The Administration has called on industry to provide online privacy policies that articulate the manner in which a company collects, uses, and protects data, and the choices they offer consumers with regard to their personal information. Based on FTC surveys of commercial sites, 62 percent now post privacy policies compared to 2 percent in 1998. Businesses have increasingly hired privacy experts and made the protection of consumer information a priority. However, industry can and should do more. Only 20 percent of the surveyed sites had policies that satisfy all the generally accepted fair information principles.[39]

In July, the Network Advertising Initiative adopted *Principles for Online Preference Marketing* (http://www.ftc.gov/os/2000/07/

NAI%207-10%20Final.pdf). The Administration applauded this action as an effective method for safeguarding personal information. The Initiative's general principles were first announced at a "profiling" workshop held by the Department of Commerce and the Federal Trade Commission in November of 1999 (www.ntia.doc.gov/ntiahome/privacy/previndex.html). The principles promise special protections for sensitive information and choice about how network advertisers use personal information. The Administration is also strongly encouraged by the private sector's increased participation in third party enforcement organizations.

New Technologies: Another important development is the *Platform for Privacy Protection* (P3P), a standard developed by the World Wide Web Consortium that will enable users to express their privacy preferences through their browsers. In September of 2000, a Department of Commerce Workshop demonstrated this technology (http://www.ntia.doc.gov/ntiahome/privacy/index.html). In a show of support, the White House and the Department of Commerce recently made their home-pages compliant with this privacy-enhancing "P3P" technology.

Government Online Privacy: Through the P3P effort and other initiatives, the Federal government continues in its mission to be a "model" citizen of cyberspace in its information practices and lead by example. On June 2, 1999, OMB directed Federal agencies to post privacy policies on their principal website and at other appropriate pages (http://www.whitehouse.gov/omb/memoranda/m99-18.html). A recent GAO study found that an overwhelming majority of federal websites have complied already (http://www.gao.gov/new.items/gg00191.pdf). In June of 2000, OMB directed Federal agencies to avoid using "cookies" except in special cases.[40] The President's FY 2000 budget has made privacy impact assessments, which evaluate and address privacy needs, a standard for new government computer systems.

International Efforts: On the international front, the U.S. Government continues to promote an industry self-regulation approach to privacy protection with groups such the OECD, the Free Trade Area of the Americas, and the Asia Pacific Economic Cooperation. For example, the U.S. Government played a leading role in developing the OECD Online Privacy Generator, which will encourage and help organizations develop online privacy policies that comport with the 1980 OECD Privacy Guidelines.

Bridging different privacy approaches, the United States and the European Commission have completed the safe harbor privacy accord, which helps to ensure that trans-Atlantic data flows will not be interrupted. This landmark accord builds on the U.S. self-regulatory approach to privacy, and can serve as a model for bridging the gap between different approaches to electronic commerce issues in the international context. The Safe Harbor Accord became operational in November of this year (http://www.export.gov/safeharbor).

Private sector organizations such as the Global Business Dialogue on Electronic Commerce and the TransAtlantic Business Dialogue also help find ways to bridge different national privacy approaches. Moreover, in May of this year, BBB*Online* and the Japan Information Processing Development Center (JIPDEC) teamed up to develop a transnational online privacy seal. The seal can be displayed by businesses that have earned either the JIPDEC or the BBB*Online* privacy seals.

2. Privacy Protection Through Law and Regulation

In areas where highly sensitive information is concerned, the Administration has worked to provide strong legal protection:

- **Children's Information:** The Administration actively supported enactment of the Children's Online Privacy Protection Act in 1999, which requires sites aimed at children to get verifiable parental consent before they gather and use personal information received from children under 13. The FTC issued rules to implement this Act in April 2000.

- **Medical Records:** The final rules guaranteeing the privacy of medical information under the Health Insurance Portability and Accountability Act of 1996 were issued in December, 2000. These privacy regulations apply to approximately 13 percent of the U.S. economy, to all health care providers and plans and their business associates. Furthermore, the rules apply to online as well as offline records and provide a crucial baseline of legal protection for these especially sensitive records. Additional legislation also will be needed to assure better protection of some medical records, such as those held by life insurance companies and in many employment uses that are outside the scope of the current statute.

> *"Nothing is more private than someone's medical or psychiatric records. And, therefore, if we are to make freedom fully meaningful in the Information Age… we have to protect the privacy of individual health records."*
>
> President Clinton
> December 2000

- **Financial Records:** The Administration has continually emphasized the importance of adopting protections to ensure the privacy of consumers' financial records. This year, we announced a new legislative proposal to protect consumer's financial privacy that includes the right to choose whether a firm shares consumer financial information, provides extra protection for especially sensitive information, and creates a new right to review and correct information collected about consumers. This proposal, developed by the Department of Treasury, the Office of Management and Budget and the National Economic Council, built upon the financial privacy protections of the 1999 Financial Modernization legislation and filled gaps in that ground-breaking law.

- **Genetic Discrimination:** This February, the President signed an Executive Order banning the use of genetic information in Federal government hiring and promotion decisions. The Administration supports legislation to extend these protections to private sector employment and insurance practices.

C. Protecting Children from Inappropriate Content Online – A Special Responsibility

The potential for children to access inappropriate content online is of particular concern to society. In response to this challenge, the Administration continues to support an approach combining the widespread availability of consumer empowerment technology, enhanced consumer awareness, and an industry-led self-regulation.

The government can further industry and consumer awareness through means such as the Commission on Child Online Protection, which was established under the Children's Online Protection Act. This Commission examined how technological tools such as age verification mechanisms and Internet filtering, labeling and rating schemes can help protect children from inappropriate content. The Commission delivered its final report and recommendations to Congress on October 20, 2000. The recommendations called on industry, consumers and the government to act in four main areas: public education, consumer empowerment, law enforcement, and industry self-regulation.

The Administration also supports protecting children by requiring that schools and libraries receiving e-rate funding have an "acceptable use" policy. Recent studies confirm that virtually all schools have such policies in place. Acceptable use polices are locally developed rules and guidelines for children that offer parents a reasonable assurance of their child's online safety. The Administration has expressed concerns about proposed legislation that would deny e-rate funds to schools and libraries that have not installed specific software to block access to inappropriate material. While the Administration strongly supports protecting children, there are powerful arguments that the government should not mandate a particular type of technology in a rapidly changing environment. The Administration believes that acceptable use policies (which at the discretion of local officials can include software as a part

of the solution) should be given a chance for success before mandating a technological solution.

Through the Office of Management and Budget, the Administration has made clear that Federal agencies are to comply with the standards of the Children's Online Privacy Protection Act, even though Congress did not include the Federal government within the scope of that law. In addition, each agency is to describe its privacy practices in its budget submissions this year. In this way, the federal commitment to privacy protection is built into the budget process.

D. Enhancing Consumer Confidence – Security on and Security of the Internet

The security of information flowing through the Internet is a critical element of e-commerce. It is a necessary part of building trust in the accuracy and integrity of transactions made over the information infrastructure. There is growing awareness that America's information infrastructure – the basis of e-commerce – is becoming an increasingly attractive target for deliberate attack or sabotage. Consumers must have confidence that both the content and the infrastructure of the Internet are secure.

1. Security on the Internet – Protecting Information through Encryption

To ensure that sensitive information is protected, the Administration supports the use of information security tools such as encryption. However, unlimited use of encryption by groups such as criminals, drug traffickers or rogue governments risks public safety and national security. Therefore, the Administration continues to promote a balanced approach to encryption policy.

In September of 1999, the Administration announced sweeping changes to the restrictions on the export of encryption products. These changes both protected national security interests and paved the way for U.S. industry to compete in major markets around the world. The new guidelines came one year after Vice President Gore pledged that the Administration would review and update its policy to ensure it protects privacy and is in step with the growing market for electronic technology. The Administration worked with industry, law enforcement and privacy groups to create a balanced policy that addresses all interests involved. In January of 2000, after months of consultation with interested parties, the Administration implemented this new approach consisting of security within the Federal government, a new framework for export controls, and updated tools for law enforcement (http://www.bxa.doc.gov/Encryption/pdfs/Crypto.pdf).

The updated policy will provide U.S. companies with new opportunities to sell their encryption products to most end users in global markets. In addition, in July 2000, the Administration announced a new policy to further open up encryption exports to the 15 member nations of the European Union as well as eight other trading partners. The Administration implemented this new policy in October 2000. (http://www.bxa.doc.gov/Encryption/pdfs/EncryptionRuleOct2K.pdf). These updates track with recent policies adopted by the European Union, and ensure that U.S. industry can continue to effectively compete.

With these updates in encryption policy, individuals and businesses will be able to secure their communications and data over global networks. Businesses can conduct secure transactions with their clients and business-to-business transactions can be protected from unauthorized access. Commercial and individuals' web applications can be authenticated and secured, and global businesses will have ready access to encryption technology to secure their corporate databases, e-mails, and proprietary files and records.

2. Security of the Internet – Protecting the Internet for Businesses and Consumers

The security of information is central to the building of confidence in e-commerce. The growing threat of attack and sabotage can undermine that confidence. Our government,

economy, and society are connected in an ever expanding and interdependent digital system of computers and information systems. With this new interdependence comes new vulnerabilities. From almost anywhere, a skillful user with malicious or criminal intent can break into sensitive files, shut down a public safety system, or paralyze the Internet.

For example, in May of 2000, any user who opened the attachment to an e-mail containing the irresistible subject line "I love you" unwittingly released a virus that destroyed files and then propagated itself via the e-mail address book of the user's mail program. In attacks in February of this year, message-sending programs were surreptitiously placed on numerous computers operated by a variety of organizations. These hosts then flooded targeted websites so that the targets were unable to respond to normal message traffic. This tactic, known as a "distributed denial of service" attack, forced sites such as Yahoo!, Lycos, Excite to shut down for significant periods at considerable cost to owners and users.

In July of this year, the Administration announced important new measures to assure the security and trust of Americans in cyberspace. These measures include updating law enforcement authorities for the Internet age; harmonizing the rules that apply to different technologies such as telephones and e-mail; promoting public-private partnership; and preserving fundamental values such as protecting public safety, privacy and civil liberties.

A key element of the Administration's approach to Internet security is the importance of private sector leadership. Following the denial of service attacks in February, President Clinton called together leaders of Internet and e-commerce companies, civil liberties organizations, and security experts to take actions to strengthen Internet and computer network security (http://www.whitehouse.gov/WH/New/html/20000215.html). This White House Cyber Security Summit emphasized the need for the private sector, which owns and operates most of the computers that Americans rely upon, to take responsibility for leading in computer and network security.

Prior to the Summit, in January of 2000, President Clinton issued the *National Plan for Information Systems Protection*, the first ever attempt by a national government to design a strategy for protecting its computer networks from deliberate attacks (http://www.ciao.gov/National_Plan/national_plan%20_final.pdf). The current plan focuses on federal efforts to protect the nation's critical information infra-structures. Later versions will focus on the work of the infrastructure owners and operators, as well as the broader business community.

For the *National Plan* to succeed, government and the private sector must work together. The Administration's *Partnership for Critical Infrastructure Security* is such an effort (http://www.ciao.gov/partnership/faq.htm). Former Secretary of Commerce William Daley opened the first partnership meeting in December of 1999 and a second meeting was held in February of 2000 with over 220 senior members of more than 120 partnership companies. The partnership sponsored a plenary conference in July of 2000 to continue the effort and to evaluate the progress that has been made to date.

The Administration has long understood the importance in working in partnership with the private sector. In October 1997, President Clinton's Commission on Critical Infrastructure Protection produced a report entitled *Critical Foundations: Protecting America's Infrastructures* (http://www.ciao.gov/PCCIP/PCCIP_index.htm). Among the report's conclusions were that infrastructure protection is crucial to our national security and economic power; that vulnerabilities are increasing steadily, and that security will depend on new forms of cooperation with the private sector, which owns and operates much of the infrastructure.

These were among the recommendations on which the Administration based Presidential Decision Directive 63 (PDD-63) issued in May 1998. PDD-63 requires that the Executive Branch assess the nation's cyber vulnerabilities and emphasized protection of government assets from attacks as well as remedies so as to become a model for information security.[41] PDD-63 also recommended that industry form partnerships with government to better protect

its information infrastructures. A primary goal was the creation of private sector information sharing and analysis centers (ISACS) to identify systems threats, incidents, and vulnerabilities, and to the extent possible, provide ISAC members with preemptive capabilities.

For example, the Department of the Treasury worked with banking and finance industry leaders to establish the Financial Services Information Sharing and Analysis Center (http://www.fsisac.com). The center opened in October 1999, and its membership now includes forty organizations, including many of the nation's largest banks, security firms, investment companies and insurance companies. The center has gained recognition for protecting its members from the distributed denial of service attacks and the "I love you" virus mentioned above.

In addition, the Department of Treasury is now initiating a study of sector-wide financial system vulnerabilities in cooperation with the industry and a private contractor. The Department of Treasury also is participating in efforts to identify major cross-sector dependencies and develop policies and programs to protect financial institutions from potential difficulties in other sectors, such as energy or telecommunications.

The U.S. Government also has taken additional steps to protect the information infrastructure. For instance, the FBI coordinates the National Infrastructure Protection Center (NIPC) (http://www.nipc.gov) This group helps the FBI detect and respond to cyber attacks on critical infrastructures, including electronic commerce sites. NIPC played a critical role in helping to trace the denial of service attacks that occurred in February, 2000 against CNN, Yahoo!, Amazon.com and e-Bay. Late in 1999, the NIPC had issued warnings in December 1999 about the possibility of such attacks, and even created and released a tool that victims could use to detect whether their system had been infiltrated by an attacker for use against other systems. The FBI has created the National Infrastructure Protection and Computer Intrusion (NIPCI) Program in the 56 FBI field offices across the country. The FBI currently has 193 agents nationwide dedicated to investigating computer intrusion, denial of service, and virus cases.

Internationally, the U.S. Government is participating as an observer in the efforts of the Council of Europe to develop a draft treaty on cyber-crime. This draft treaty provides for the adoption of substantive criminal laws on hacking and other computer crimes, procedural tools for law enforcement to fight cyber-crime, and provisions designed to ensure cooperative law enforcement efforts in the international context. The U.S. Government intends to continue working with the Council of Europe to develop a draft treaty that balances the needs and interests of law enforcement, privacy groups and industry. The U.S. Government will make a decision of whether to sign the treaty when all the negotiations are complete.

III. Creating A Seamless Global Market

The global nature of the Internet requires that we work in partnership with foreign governments and the private sector to promote a seamless marketplace worldwide. Since the time that President Clinton and Vice President Gore first articulated our approach to fostering the growth of e-commerce a worldwide consensus has begun to emerge. Countries large and small, developed and developing have joined with us in recognizing the importance of private sector leadership, avoidance of unnecessary regulation, and a minimalist government role, while protecting the public interest.

This year, the Administration successfully fought to include these principles in the Charter on Global Information Society agreed to at the G-8 Economic Summit. The Charter is significant because it is the first ever multilateral statement on information society issues and because it recognized that the policies that foster e-commerce also will promote the growth of other social and economic benefits. In addition, we also have continued to pursue our work bilaterally, and this year have added Columbia, the Philippines and Jordan to our list of joint statements on e-commerce. To date, we have reached agreement on these e-commerce principles with 12 countries, plus the European Union.

Milestones in Electronic Commerce Policy Making

December, 1995	President Clinton announces creation of Electronic Commerce Working Group
December, 1996	First draft of electronic commerce strategy posted on the Internet for public comment; the first use of the Internet to help shape White House policy
December, 1996	WIPO agreement protecting copyrights online
July, 1997	President Clinton issues *A Framework for Global Electronic Commerce* and the Presidential *Directive on Electronic Commerce*
July, 1997	Global Information Networks Ministerial Conference in Bonn issues declaration on electronic commerce
October, 1997	U.S./Netherlands sign *Joint Statement on the Development of the Internet and Electronic Commerce*
November, 1997	TABD issues Communique at Rome Meeting regarding electronic commerce
November, 1997	The APEC Economic Leaders issue declaration on electronic commerce
December, 1997	The U.S./EU *Joint Statement on Electronic Commerce* is issued
March, 1998	FTAA issues Ministerial declaration on electronic commerce

Milestones in Electronic Commerce Policy Making *(Continued)*

April, 1998	U.S./Ireland sign *Joint Communique on Electronic Commerce* using digital signatures
May, 1998	WTO issues *Declaration on Global Electronic Commerce*
May, 1998	U.S./Japan sign *Joint Statement on Electronic Commerce*
June, 1998	U.S./France issue *French-American Background Paper on the Challenges of the Information Society and the Digital Economy*
October, 1998	The OECD issues Ministerial declarations on authentication and on taxation
November, 1998	U.S./Korea sign *Joint Statement on Electronic Commerce*
November, 1998	U.S./Australia sign *Joint Statement on Electronic Commerce*
January, 1999	U.S./U.K. sign *Joint Statement on Electronic Commerce*
September, 1999	GBDe issues electronic commerce recommendations at Inaugural Conference
October, 1999	U.S./Egypt sign *Joint Statement Concerning Electronic Commerce*
November, 1999	FTAA issues *Report with Recommendations to Ministers* on how to increase and broaden the benefits of electronic commerce
December, 1999	The OECD issues *Recommendation Concerning Guidelines for Consumer Protection in the Context of Electronic Commerce*
February, 2000	U.S./Chile sign *Joint Statement on Electronic Commerce*
May, 2000	U.S./Columbia sign *Joint Statement on Electronic Commerce*
May, 2000	The U.S./EU issue *Summit Statement on Data Privacy*
June, 2000	U.S./Jordan sign *Joint Statement on Electronic Commerce*
July, 2000	U.S/The Philippines sign *Joint Statement on Electronic Commerce*
July, 2000	G-8 issues *Okinawa Charter on Global Information Society*

A. Trade and Financial Environment

1. Increasing Market Access

Increasing access to global telecommunications and information technology markets is central to the continued growth of electronic commerce. The United States is ensuring that new World Trade Organization (WTO) members, through commitments on market access, national treatment, and regulatory safeguards, maintain open telecommunications markets that permit electronic commerce to flourish. Applicants such as China have made commitments that will substantially bolster investment opportunities abroad, further extending the spread of competitive telecommunications markets. The latest countries to join the WTO, such as Estonia, Jordan, the Kyrgyz Republic, and Latvia, all have made substantive, broad-based commitments.

With the launch of a new round of talks aimed at liberalizing telecommunications services, the United States will work to ensure that WTO members that have not yet taken telecommunications commitments do so, and those that maintain market access limitations or do not fully adhere to regulatory principles improve their commitments. To date, 79 countries have signed on to the WTO Agreement on Basic Telecommunications and 71 have agreed to adopt the pro-competitive regulatory principles

contained in the reference paper. Worth $650 billion in 1997, the global telecommunications market is now rapidly approaching one trillion dollars in annual sales. Before the agreement came into force in February, 1998, only 17 percent of the world's top 20 global markets were open to U.S. firms; now, measured by annual sales, U.S. companies have gained access to over 95 percent of global telecommunications markets.[42]

The range of services and technologies covered by the WTO Agreement on Basic Telecommunications extends from submarine cables to satellites, from wide-band networks to cellular phones, from business intranets to fixed wireless for rural and underserved regions. The agreement has three parts: market access, investment and pro-competitive regulatory principles. With respect to market access, the agreement provides U.S. companies market access for local, long-distance and international service through any means of network technology, either on a facilities basis or through resale of existing network capacity. On investment, the agreement also ensures that U.S. companies can acquire, establish or hold a significant stake in telecom companies around the world. In addition, most countries adopted pro-competitive regulatory principles. Based in large part on these commitments, U.S. firms hold substantial investments in operators in over three dozen countries; operate the most extensive pan-European fiber optic networks; are global leaders in deploying technologies such as cable telephony and internet telephony; are the largest investors in almost every international submarine cable consortium and global satellite system; and lead in moving globally into value-added and Internet services.

In December 2000, the United States outlined its goals for integrating telecommunications and e-commerce related services into the ongoing WTO service negotiations. On the premise that WTO Members seeking to benefit from the growth opportunities of a networked global economy will need to attract extensive private investment to build an infrastructure for e-commerce, the United States articulated market access commitments that would encourage such investment, including market access commitments in basic telecommunications, value-added telecommunications services, distribution services, computer services, and express delivery services.

The importance to the growth of the Internet and e-commerce of a competitive basic telecommunications market is now appreciated by most of our trading partners and thus prospects for further liberalization are good. In fact, the need for countries to compete for foreign investment has provided an incentive for countries such as Korea, Singapore, and India to unilaterally liberalize, further improving the global investment environment. The benefits these countries seek are amply demonstrated by the success of liberalized markets; in Europe, for example, prices for bandwidth are expected to decline by 50 percent a year for the next several years.[43] These declines are stimulated by the enormous capacity increases competitive markets have stimulated; on the Atlantic submarine route alone, capacity is expected to increase 200-fold by 2001 compared with 1997, and similar expansion is expected on trans-pacific routes.

USTR reviews annually the operation and effectiveness of each trade agreement regarding telecommunications products or services. A major focus of these reviews is countries' compliance with their WTO commitments. These reviews, and bilateral discussions under Section 1377 of the Omnibus Trade and Competitiveness Act of 1988 which have accompanied them, have had a significant impact on addressing market access complaints in countries such as Japan, the United Kingdom, Israel, Germany, South Africa, Peru, and Mexico:

- The United States successfully completed a bilateral agreement with Japan, which has improved substantially U.S. firms' access to Japan's $130 billion telecommunications market. The agreement includes interconnection rate cuts of up to 50 percent and a commitment to broad-based unbundling of the network, a key step in stimulating high-speed Internet access service.

- Germany also took positive steps to address the persistent problem of Deutsche Telekom's backlog in processing interconnection requests and is expected to take action this

year to reduce excessive licensing fees, which the European Commission has recognized as an impediment to entry.

- In South Africa, the monopoly provider agreed to restore access to its network for competing suppliers of value-added services.

- In Peru, the regulator introduced sharply lower interconnection rates.

With Mexico, the second largest market for international services from the United States, bilateral discussions failed to resolve long-standing U.S. complaints. Consequently, the United States initiated WTO dispute settlement procedures, which commenced with bilateral consultations. The U.S. seeks resolution of three related issues: the lack of effective disciplines over the former monopoly Telmex, which is able to use its dominant position in the market to thwart competition, including in Internet services; the failure to ensure timely, cost-oriented interconnection that would permit competing carriers to connect to Telmex customers to provide local, long-distance, and international service; and finally, the failure to permit alternatives to an outmoded system of charging U.S. carriers above-cost rates for completing international calls into Mexico. No decision has yet been taken on constituting a WTO panel to resolve the issue. Meanwhile, Mexico has taken positive steps towards resolving issues relating to interconnection rates and competitive safeguards.

2. Promoting Duty Free Cyberspace

In May of 1998, the United States won agreement at the WTO to establish a moratorium on customs duties on electronic transmissions and a work program to address e-commerce issues in the WTO. Since then, the United States has been working with the 137 WTO members to formally extend the May 1998 electronic commerce declaration, which includes a moratorium on customs duties on electronic transmissions and an extension of the work program. The General Council decided on July 17 of 2000 to continue a work program in various WTO bodies.

Extension of the moratorium embodies a key policy objective the United States has been advocating globally – namely that governments should refrain from imposing unnecessary restrictions on electronic commerce that can inhibit its growth. The benefits of such a commitment to U.S. business and consumers are enormous, given the rapid growth in both international data flows transmitted electronically and the value of the content embedded in that data. An emerging consensus on the moratorium reflects a recognition that imposing customs duties on electronic transmissions would be an inefficient way to raise revenue and that the burden of instituting and complying with such a mechanism would outweigh any potential benefits and could discourage investment in electronic commerce.

In addition, the United States also has worked successfully outside the WTO to enshrine support for the moratorium. The United States has negotiated statements with twelve countries, Australia, Chile, Colombia, Egypt, Japan, Jordan, the Philippines, all of which have memorialized the goal of maintaining the current practice of not imposing customs duties on electronic transmissions. The United States gained international support for this position at both the September 1999 APEC Ministerial Meeting in Darwin, Australia, the July 2000 G-8 Summit meeting in Okinawa, Japan.

3. Protecting Against Discriminatory Taxes in the Global Environment

The President directed the Department of Treasury and other agencies to work to ensure that no new taxes are imposed in the United States or around the world that discriminate against Internet commerce, and that existing taxes wherever they are should be consistently applied.

This year, senior representatives of the Department of Treasury, the Department of Commerce and USTR participated in the Congressional Advisory Commission on Electronic Commerce (ACEC). The Internet Tax Freedom Act, which President Clinton signed into law on October 21, 1998, established this Commission.

Unfortunately, the Commission was unable to reach the Congressionally mandated consensus on the significant issues surrounding U.S. state and local taxation of electronic commerce. There was, however, agreement within the Commission on some important issues. For example, most, if not all, Commissioners agreed with the U.S. Government that there should be no taxes on Internet access and that the state governments should simplify their complicated sales tax and telecommunications tax systems. There also was consensus with respect to the handling of international tax issues and tariff issues. The Administration announced in May 2000 that it would support a two-year extension of the moratorium on multiple and discriminatory taxation if further time were necessary for discussion and simplification efforts to proceed.

After the conclusion of the ACEC, twenty-six States joined together to form the "Streamlined Sales Tax Project", to develop measures to design, test, and implement a system that radically simplifies sales and use taxes. The project, which now involves over 30 states, has produced draft model legislation that would implement required legal simplifications and has begun a pilot program to develop and test technological solutions to administrative problems. Both the draft legislation and the pilot program will be available for private sector comment and evaluation. The project's methods and goals are in accord with the Administration's statement submitted to the ACEC, which urged the States to simplify their sales and use tax system while engaging in a dialogue with consumers.

Around the world, the Department of Treasury continues to work within the OECD to develop an international consensus regarding implementation of the OECD's 1998 taxation framework conditions, which the Department of Treasury actively participated in formulating. The OECD conditions (neutrality, efficiency, certainty and simplicity, effectiveness and fairness, and flexibility) stem from the principles President Clinton set forward. Further, the Department of Treasury and the OECD are continuing outreach efforts to non-OECD-member countries, to keep non-OECD member countries informed of the developments within the OECD, with the goal of achieving a truly global consensus regarding the tax treatment of electronic commerce. The Department of Treasury and the OECD have involved the private sector in forming a global consensus to ensure that any tax rules appropriately take into account the technology and new business models. One particularly sticky issue abroad is how the tax structure should deal with products, such as software, that are delivered online, rather than in a more tangible form such as a shrink-wrapped box purchased online or in a store. The Administration is working with the European Union (EU) to ensure that any such taxation by EU-member states is consistent with the OECD-agreed principle of neutrality. On June 7, 2000, the European Commission proposed new Value-Added Tax (VAT) rules under which digitally delivered goods would not be subject to EU VAT when exported out of the EU and digitally delivered goods purchased by EU consumers would be subject to EU VAT as services, whether purchased from EU vendors or others. In addition, the proposal imposes certain compliance requirements on non-EU sellers of digitally delivered goods. The proposal requires that non-EU sellers of digitized goods, such as U.S. businesses, to EU consumers register in one EU country, collect VAT on all EU sales under that country's rules and rates, and report and remit its VAT collections to that country's tax authorities.

The Administration has made clear that it has serious concerns with the Commission proposal. The proposal appears to violate the principle of neutrality since the value-added tax on electronically delivered products may be higher than value added taxes on their physically delivered functional equivalent. For example, it appears that, in practice, the value-added taxes applied to electronically delivered books and newspapers may be higher than those applied to sales of the same physical books and newspapers. The Administration will continue to work within the OECD and with EU-member states to ensure that its concerns are addressed (http://www.treas.gov/press/releases/ps808.htm).

B. Legal and Regulatory Environment

Creating a global seamless marketplace involves both creating a legal environment that recognizes and facilitates digital transactions across borders and eliminating outdated regulations that can impede the growth of e-commerce, while protecting the public interest.

1. Facilitating E-Commerce Through Electronic Signatures

President Clinton directed the Secretary of Commerce to work toward the development of a uniform commercial legal framework that recognizes, facilitates, and enforces electronic transactions both domestically and internationally. An essential component of that uniform legal framework was established when President Clinton signed the Electronic Signatures in Global and National Commerce Act (E-SIGN) into law on June 30, 2000 (http://www.ecommerce.gov/ecomnews/ElectronicSignatures_s761.pdf). E-SIGN represents a major policy achievement and promotes electronic commerce by ensuring the legal validity of electronic records and transactions. In particular, it contains provisions that ensure the legal validity of electronic signatures and contracts, permit the electronic delivery of legally-required notices and disclosures, and allow for the satisfaction of record retention requirements through electronic means.

"The Electronic Signatures in Global and National Commerce Act will open up new frontiers of economic opportunity while protecting the rights of American consumers."

President Clinton
June 30, 2000

E-SIGN is technology neutral, and allows contracting parties to choose the technology for authenticating their transactions without government intervention. It also ensures that online consumers will have legal protections equivalent to those in the off-line world, and does not diminish the protections offered by any federal or state law relating to the rights of consumers. Consumers retain the choice to do business and receive records on paper or online. Also, before notices and disclosures may be sent electronically, consumers must give their consent and the business must verify that the consumer will be able to access electronically the information that will be provided.

In addition, E-SIGN does not significantly displace the traditional role of state law in the area of commercial transactions. More specifically, it applies to all transactions in or affecting interstate or foreign commerce, but a state may modify or supercede the provisions of E-SIGN with regard to its own laws if it adopts or enacts the Uniform Electronic Transactions Act (UETA), or another law that is technology-neutral and consistent with Titles I and II of E-SIGN. UETA is a uniform state law promulgated by the National Conference of Commissioners on Uniform State Laws (NCCUSL) in July 1999. To date, twenty-two (22) states have adopted or enacted UETA, and many others are considering it.

Both E-SIGN and UETA are consistent with the basic principles identified in the Framework for revising commercial law so that parties may enter into legally enforceable electronic transactions: parties generally should be free to order the contractual relationship between themselves as they see fit; rules should be technology-neutral (i.e. the rules should neither require nor assume a particular technology) and forward looking (i.e., the rules should not hinder the use or development of technology in the future); existing rules should be modified and new rules should be adopted only as necessary or substantially desirable to support the use of electronic technologies; and the process should involve the high-tech commercial sector as well as businesses that have not yet moved online.

The United States continues to promote the development and adoption of commercial legal frameworks that recognize and enforce electronic transactions on the basis of four key principles: (1) eliminate paper-based legal barriers to electronic transactions by implementing the relevant provisions of a 1996 Model Law on Electronic Commerce issued by

the United Nations Commission on International Trade Law (UNCITRAL); (2) reaffirm the rights of parties to determine for themselves the appropriate technological means of authenticating their transactions; (3) ensure any party the opportunity to prove in court that a particular authentication technique is sufficient to create a legally binding agreement; and (4) treat technologies and providers of authentication services from other countries in a non-discriminatory manner. This approach continues to receive significant support from the private sector.

The U.S. Government was successful in including these principles in an important Declaration on Authentication adopted by the Ministers of the OECD in 1998. This year, the United States has been working to ensure the incorporation of these principles into the laws of OECD Member Countries, including the European Union Member States, and also has been working with the OECD to produce a comprehensive report to OECD Ministers on these issues.

The United States also is actively involved in promoting the adoption of these principles in the Western Hemisphere. This year, we have worked with the Joint Committee of Experts on Electronic Commerce, a group within the Free Trade Area of the Americas framework, to provide recommendations to Ministers to help expand the benefits of e-commerce in the region. We will continue to participate in this Committee in order to help increase and broaden the benefits of electronic commerce throughout the Americas.

In addition, the U.S. Government continues to actively promote awareness and adoption of these principles in bilateral and multilateral discussions with our trading partners around the world. In the past year, we also have been successful in having these principles endorsed in Joint Statements with the Philippines, Colombia, Chile, and Jordan, adding to the list of Joint Statements with numerous other important trading partners. We will continue to promote the adoption of these important market-based principles as a means of establishing a global legal framework that recognizes, facilitates, and enforces electronic transactions worldwide.

2. Reducing Barriers to E-Commerce

The Administration has worked to identify and eliminate barriers to the growth of e-commerce in both the domestic and global markets. Potential barriers range from outdated regulations to burdensome customs procedures and non-competitive transportation and delivery services markets overseas.

> *"E-commerce creates enormous potential for growth anywhere, and it will continue to do so, if we can resist the temptation to put up barriers to this important part of our new economy."*
>
> President Clinton
> January 29, 2000

Domestic: The Department of Treasury and its regulatory bureaus are working to identify provisions of law and agency regulations that may impose a barrier to electronic transactions or otherwise impede the conduct of commerce online, and to recommend how such laws or regulations may be revised to allow electronic commerce to proceed while maintaining protection of the public interest.

Electronic commerce and banking over the Internet has attracted increasing attention over the past several years from consumers and financial services industry participants. As a group, banks offering online transactions account for almost 90 percent of national banking system assets. While industry estimates indicate about 7 percent of households engage in Internet banking, forecasts look for a 3- to 4-fold increase in consumer usage of Internet banking in the next several years.

Beginning in 1995, the Office of the Comptroller of the Currency (OCC) undertook a comprehensive review of its interpretations, supervisory guidance and regulations to search for areas in which those rules might serve as an impediment to the conduct of electronic activities by national banks. The OCC also has engaged in a process to update the way in which it reviews applications for new activities and business practices, with a view to encouraging safe and sound bank involvement in both open and

closed computer system environments. The Office of Thrift Supervision (OTS) also has been engaged in activities similar to those outlined for the OCC below. OTS rules effective at the beginning of 1999 streamlined and updated its regulations related to electronic operations.

In February 2000, the OCC formally requested public comment about laws and regulations that impose barriers to safe and sound bank participation in electronic activities. This information is helping the OCC to determine which regulations and interpretive positions should be revised to facilitate and support emerging lines of business and the use of technology in banking, and eliminate needless barriers. OCC also has issued safety and soundness risk management guidance to financial institutions on a variety of e-commerce and e-finance activities including Internet banking, security, privacy, and technology risk management.

Through extensive legal and supervisory analysis, the OCC has determined that banks may legally provide a variety of Internet-related services to their retail and business customers. Various interpretative rulings and corporate applications have enabled national banks to, for example: operate Internet-only banks, operate virtual malls, provide digital certification to support electronic business, provide commercial and governmental website hosting services, provide an electronic marketplace for non-financial products over the Internet, provide electronic bill presentment and payment (EBPP), operate an electronic toll collection system on behalf of a public authority, provide for merchant processing of credit cards via the Internet, invest in entities that provide stored value for electronic transactions, and provide full Internet access service. By removing regulatory uncertainty surrounding these new and innovative activities of banking organizations, these rulings have thus encouraged e-commerce in the banking industry, a very important sector of the U.S. economy.

In order to evaluate proposals for new Internet bank charters more effectively and efficiently, the OCC's licensing department is developing an Internet Banking Chartering Booklet for the Comptroller's Corporate Manual. The booklet will provide formal guidance for applicants and licensing staff covering the applications, policies and procedures involved in approving de novo charters for Internet banks. This action should remove a significant impediment to the growth of electronic financial services by clarifying and streamlining the procedures under which they will be evaluated and approved.The OTS, in a similar vein, this year began providing thrifts with sophisticated new software to facilitate their electronic filing of all regulatory reports they make to their supervisory agency.

International: The State Department, working closely with other U.S. agencies, the U.S. private sector and foreign governments, launched an initiative in 2000 to address as a package several significant barriers in the international e-commerce value chain. With strong private sector cooperation, the State Department has identified costly telecommunications services, non-competitive transportation and delivery services markets, cumbersome customs procedures, weak or non-existent electronic payment systems infrastructures, and onerous merchandising restrictions as key obstacles to electronic commerce. These barriers are both discouraging U.S. exporters and hindering other countries from participating fully in the global information economy. In fact, there is evidence that the majority of U.S. e-tailers are so discouraged by these barriers that they are refusing to ship products outside of the United States. Many foreign companies also have found that the same barriers prevent them from participating fully in cross-border supply chains and instituting just-in-time logistics practices that can reduce costly warehousing and increase inventory velocity. A cross-sectoral approach to reform can help create digital opportunities for developed and developing countries and draw them into the global new economy.

As a result, numerous foreign governments have requested U.S. Government and private sector advice and assistance. In response, the State Department, in coordination with other relevant agencies, is encouraging governments to undertake "cross-sectoral" reforms that address the identified sectors together and produce synergistic benefits for a country's e-commerce environment. The cross-sectoral concept was incorporated into the G-8

Leaders' *Okinawa Charter on Global Information Society*, a joint communiqué with Jordan, and other bilateral documents. Multilateral institutions and organizations, including the Asia-Pacific Economic Cooperation and the Trans-Atlantic Business Dialogue, have discussed cross-sectoral issues and are working to address them.

3. Intellectual Property Protection

Protection of intellectual property is another key element of allowing electronic commerce to flourish. Without it, businesses will be reluctant to make the investment in online products and services. Sellers must know that their intellectual property will not be stolen and buyers must have confidence that they are obtaining authentic products.

Copyright: President Clinton directed the Department of Commerce to work to achieve ratification of the World Intellectual Property Organization (WIPO) Copyright Treaty and the WIPO Performances and Phonograms Treaty. The two WIPO treaties were negotiated by the Administration and adopted at the WIPO Diplomatic Conference in December 1996. The treaties will ensure that international copyright rules keep pace with technological change by setting new international standards for protection of copyrighted digital content, including computer programs, movies, musical performances, and sound recordings. They also afford important protection against piracy for U.S. rights holders in the areas of music, film, computer, books, software, and other information and entertainment products. Given the central importance of intellectual property in the digital economy, bringing these treaties into force will contribute significantly to economic vitality.

The United States ratified the treaties following the Senate's advice and consent, after the enactment of the Digital Millennium Copyright Act, which modified U.S. copyright law to conform to the new WIPO treaties. Former Secretary of Commerce William M. Daley deposited the U.S. instrument of ratification with WIPO on September 14, 1999. The law also included provisions that limit the liability of telecommunications companies and Internet service providers. The legislation will promote electronic commerce over the Internet and other networking environments by ensuring accountability and enforcement of copyright law without imposing excessive or unforeseeable liability for intellectual property infringement.

The United States' implementation and ratification of the WIPO treaties comes at a time when countries are examining how best to update their copyright laws to meet the challenges of the digital age. The treaties will come into force when 30 countries ratify them. As of November, 2000, 21 countries, representing all geographical regions of the world, have ratified the WIPO Copyright treaty and 19 have ratified the Performances and Phonograms treaty. The European Union is working to issue a directive for its member countries to implement the Treaties which is expected to be finalized in mid 2001. The U.S. Government is working to encourage others to ratify and implement the Treaties, taking an active role through trade negotiations, speeches and participation in conferences on intellectual property and WIPO meetings or programs promoting intellectual property protection.

In these settings, U.S. representatives have explained the features of the DMCA and its approach to protection of anti-circumvention devices and systems, copyright management information, and limitations on liability of service providers. For example, for the past two years, the U.S. Patent and Trademark Office (USPTO) has co-sponsored with WIPO a major conference for African states on the protection of intellectual property in the Digital Age (in Kenya in 1999 and in Senegal in 2000). At each conference, USPTO officials have made presentations on the two Treaties and emphasized the importance of African states ratifying the Treaties and adapting their laws to address e-commerce issues such as limitations on liability for service providers. During the past 18 months, the Department of Commerce 's Commercial Law Development Division (CLDD) has held seminars on protection and development of intellectual property in Lagos, Nigeria; Gaborone, Botswana; and Windhoek, Namibia. In all of these meetings, USPTO officials as well as participants from USTR and the private sector officials have emphasized the importance of states ratifying the Treaties. In fact, the CLDD includes promotion of the WCT and WPPT in all its intellectual property rights programs.

Explanation, discussion, and promotion of the Treaties and the approach to implementation in the DMCA is also a major element of the USPTO's Visiting Scholars Program and the Copyright Office's annual International Copyright Institute. Each year, these Washington-based programs attract dozens of government officials from a variety of developing and emerging economies. In 2000, the USPTO expanded its Visiting Scholars program to include a new spring session in addition to the traditional two week session each fall; this has doubled the number of foreign government officials exposed to the new copyright Treaties through this program.

The U.S. Government also is promoting the Treaties through activities and discussions in the WTO, the Free Trade Area of the Americas (FTAA), and in bilateral meetings and negotiations with countries ranging from China to Jordan. In the WTO, we also have encouraged countries to ratify the Treaties through TRIPs Council discussions related to electronic commerce. In connection with other work on electronic commerce in the WTO, we also have held discussions with other countries concerning appropriate limitations on liability of Internet service providers. In the FTAA's Negotiating Group on Intellectual Property and the Government and Private Sector Committee of Experts on Electronic Commerce, we have proposed that members consider ratification and implementation of the WIPO Treaties by countries in the Hemisphere. Discussions in the FTAA Committee of Experts on Electronic Commerce also have included the matter of the establishment of appropriate limitations on liability for service providers. In bilateral negotiations, for example, the U.S. Government has included accession and implementation of these treaties in negotiations for a Free Trade Agreement with Jordan. The importance of adherence to the two treaties also was discussed in briefings conducted by Department of Commerce team for Chinese officials in Beijing and Shanghai in the fall.

In addition, the U.S. Government is encouraging other countries to join the Treaties by using the Special 301 review process conducted by USTR. This objective is consistent with the mandate from Congress to seek adequate and effective levels of protection for intellectual property by our trading partners through promotion of the highest international standards. The standards in the WIPO Treaties meet these criteria; therefore, the Administration continues to encourage countries to ratify and implement the WIPO treaties through the Special 301 process.

To further promote the Treaties, the State Department sent cables to the U.S. embassies explaining the Treaties and their benefits and requesting that they consult with their host governments and encourage them to join.

Patents: Protecting patents are another vitally important part to safeguarding intellectual property. The USPTO embarked on an ambitious program to make sure that its knowledge and understanding of the computer industry is on the cutting edge. The USPTO continues to dedicate substantial resources to assembling a more complete and comprehensive collection of computer-related publications, as well as providing patent examiners with better access to "prior art" literature. The USPTO recently established an "Electronic Information Center" that provides examiners in computer-related technologies with access to over 300 databases that contain business and financial information. In addition, the USPTO is expanding its efforts to classify patent and nonpatent literature to maximize the ability of examiners to conduct thorough patent searches. Moreover, the USPTO is working continually to upgrade the skills and education of its examiners.

In order to address the challenges presented by business method patent applications, the USPTO established a new action plan. This is a continuous quality improvement plan that includes the following: partnering with affected industries; enhancing technical training of examiners; establishing mandatory search requirements of non-patent literature collections; revising examination guidelines; improving quality oversight through a "second level" review of applications by senior examiners; and conducting roundtable conferences with all affected stakeholders. The foundations of this plan are based upon proven approaches for enhancing the quality of the examining process. This will establish a solid framework

that provides the flexibility necessary to cope with the challenges presented by this emerging area of technology. Already, many of these steps have been or are being implemented; for example, by October 2000, hundreds of business method patent applications have gone through the second level review process, resulting in over two dozen being subject to further examination.

In addition to quality initiatives, the USPTO has taken significant strides to ensure that the benefits of the electronic age flow to patent applicants and the public at large. The USPTO continues to improve electronic access to patent data. The USPTO website allows the public to access, free of charge, the full text of patents issued since 1976. In addition, the USPTO plans to introduce electronic filing of patent applicants.

In the international arena, the USPTO continues to engage other Patent Offices throughout the world in discussions on the protection of emerging technologies, particularly computer-related inventions, with an aim towards establishing a uniform playing field that encourages both innovation and investment worldwide.

C. Understanding the Digital Economy

The Administration recognizes the importance of understanding the changes in our economy being brought about by the new digital economy. This information is key to promoting the continued growth of the Internet and e-commerce. Responding to a Presidential directive, several agencies, including the Department of Commerce, are working to analyze those changes.

In the last year, substantial progress has been made in advancing our understanding of the Digital Economy, further strengthening our conviction that we have entered into a "new economy". The U.S. economy continues to enjoy an extraordinary period of prosperity, marked by low unemployment, low inflation, and strong economic growth. A remarkable feature in this expansion has been the acceleration of labor productivity since 1995 to twice the rate of the 1973-1995 period (http://www.esa.doc.gov/de2000.pdf).[44]

The Council of Economic Advisors' (CEA) 2000 Annual Economic Report of the President explores the sources of this remarkable rise in labor productivity growth over the last four years and its link to information technology. The report explores how the Internet and information technology (IT), more generally, are changing business behavior by improving management of information flows, facilitating online transactions and impacting firm and market structure.

In June 2000, the Department of Commerce released its Digital Economy 2000 report. This report, the third in a series of annual reports on the digital economy, examines the evolution of electronic commerce and the role of IT-producing industries in driving growth, reducing inflation, increasing productivity, and increasing jobs. The report contains two new sections this year, one exploring international trade of IT goods and services and one that considers evidence for the conclusion that we have entered a new economic era. Taken as a whole, the report supports the conclusion that we have indeed entered into a new economic era, where individuals, businesses, and other organizations are imaginatively employing IT and the Internet to add to quality of life and improve business processes.

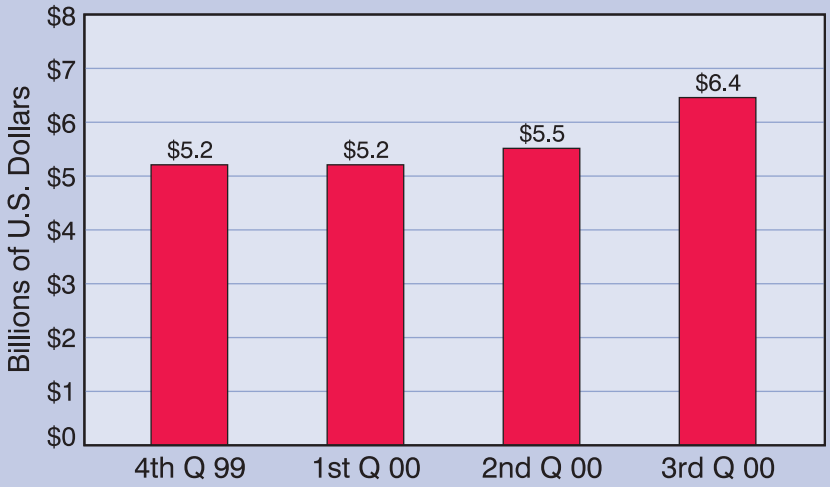
The Department of Commerce, and in particular, its two statistical agencies, the Bureau of the Census and the Bureau of Economic Analysis (BEA), is taking a leadership role in measuring the digital economy. Key activities over the past six months have included the development of measurement definitions and concepts, the introduction of the first official measures of electronic commerce, and the development of initiatives to better reflect the digital economy in composite measures of economic activity.

Given budget constraints, Census' current e-commerce measurement activities have been necessarily limited, for the most part, to adding questions to selected surveys. These initial collections are very significant, however, and will provide baseline measures of some e-commerce activities and help shape future

and more comprehensive measures of the digital economy. Specific measurement activities include:

- Quarterly estimates of e-retail activity published;
- E-commerce questions added to the annual surveys of retail trade, wholesale trade, accommodations and food services, and the service industries; and
- Information requested from manufacturers on online sales and purchases and current and future plans to use selected electronic business processes.

U.S. E-Commerce by Retail Firms Continues to Grow



Source: Bureau of the Census, U.S. Department of Commerce.

To help guide future work, Census recently issued a discussion paper that develops principles for identifying information critical to measuring the size and evaluating the potential effects of the electronic economy, relates that information to current data collection programs, and notes relevant measurement issues (http://www.census.gov/econ/www/ebusinessC.pdf).

The National Science Foundation (NSF) has created and posted a pilot informational site to serve as a reference source for the implications of information technologies (http://srsweb.nsf.gov/it_site/it/infotech.htm). The site already includes searchable bibliographies on the social and economic implications of IT and a summary literature review about computer use in the home. Literature reviews about the influence of information technologies on additional aspects of our work and lives (e.g., community, distance education, learning in K-12, learning in college, distributed work, and occupations and earnings) will be released in the future.

The U.S. Department of Commerce co-hosted a conference that examined how various sectors of the economy are changing with and because of e-commerce. Leaders from industry, academia and government met on September 26 and 27, 2000 to discuss the economic impact of the Internet and other information technologies on the United States and the world (http://osecnt13.osec.doc.gov/public.nsf/docs/7C7E85CA300FF4B98525695B0066F58A). "The E-Business Transformation: Sector Developments and Policy Implications," explored the changing terms of competition in the economy, and how policy decisions are shaping the future of the new economy here and abroad. It follows up on last year's conference, "Understanding the Digital Economy — Data, Tools and Research," which focused on the state of research on the digital economy and what is needed to monitor its future development.

The FTC examined the development of business-to-business (B2B) electronic marketplaces in a two-day public on June 29-30, 2000. B2B markets, numbering nearly 2000 presently and expected to grow in significance, are connecting businesses in real time, raising efficiency, and lowering prices within business to business commerce. Over 600 people participated in the workshop with a panel of 65 antitrust practitioners, economists, and legal scholars to discuss the evolving markets, especially as they involve B2Bs formed and operated by competitors.

US B2B Online Trading Projections (Billions)

Industry	2000	2005
Computer/Teleco Equipment	$90	$1,028
Food and Beverage	$35	$863
Motor Vehicles and Parts	$21	$660
Industrial Equipment and Supplies	$20	$556
Construction and Real Estate	$19	$528

Source: Jupiter Research, October 2000.

In October, the FTC released a report, "Entering the 21st Century: Competition Policy in the World of B2B Electronic Marketplaces," addressing both the benefits and concerns regarding B2B (http://www.ftc.gov/opa/2000/10/b2breport.htm). The report examines several features of B2B marketplaces and their potential for delivering improved business efficiency and outlines how the new B2B technology may impact traditional antitrust questions. The report notes the potential power of B2B e-commerce to create significant efficiencies. Examples of potential benefits may include reducing transaction costs, generating volume-related scale economies through combining orders from multiple purchasers, improving inventory management, establishing "real-time" communications and transactions, improving speed and ease of global business, heightening accuracy and reducing waste, and facilitating bidding by a broad spectrum of potential suppliers.

The desire to understand and measure the digital economy is shared globally. The United States is working with our trading partners, both individually and in the OECD and other venues, to harmonize data definition and collection efforts. In addition, the OECD recently published its trademark biennial publication the Information Technology Outlook (http://www.oecd.org). A variety of other projects are also underway to better understand the global digital economy, such as a two-year study of the drivers of economic growth (The Growth Project), an examination of the digital divide, and a study of Information and Communication Technology (ICT) skills and employment.

IV. Facilitating the Growth of the Internet

The economic engine that e-commerce has become can only travel as fast and as far as the tracks we set before it will carry it, and those tracks are the Internet. The Administration's accomplishments in stimulating the development of the Internet are legion. From its early work on the National Information Infrastructure, the Administration has cast itself as facilitator as the private sector has taken the role of designing and building this new network. Progress in three vital areas of Internet development is helping ensure that the Internet will continue to support thriving e-commerce.

A. Building High Speed Tracks for High Bit-Rate Internet Access

As e-commerce grows, the cargo that needs to travel the Internet grows also. Marketing and most professional applications require the transportation of huge data files. The delivery of new online products, such as movies-on-demand and subscription television, will require even greater delivery speeds. Websites market products effectively by incorporating graphics and high definition images. Products delivered online, from audio and video entertainment to computer software, require faster transmission rates. Browsing a website is becoming so tedious at voice grade modem access rates that many users give up before they find something they want. The answer is broadband access. Broadband access brings users into virtual contact with each other and improves the online experience as no other enhancement can and will allow e-commerce to realize its full potential. The Department of Commerce, the Federal Communications Commission, and the Department of Agriculture have played important roles in promoting this access.

1. Competition is Driving Investment

The Administration has long believed that fostering competition in all telecommunications markets is the best way to promote widespread deployment of broadband services. The Telecommunications Act of 1996 put competition at the forefront of national telecommunications policy, and the results have been network modernization at an unprecedented rate.

Broadband access to the Internet requires both a high capacity backbone with adequate access points, and local distribution from those points of access to the users. Competition is helping achieve this high-speed telecommunications capability, today called "broadband access", on both fronts.

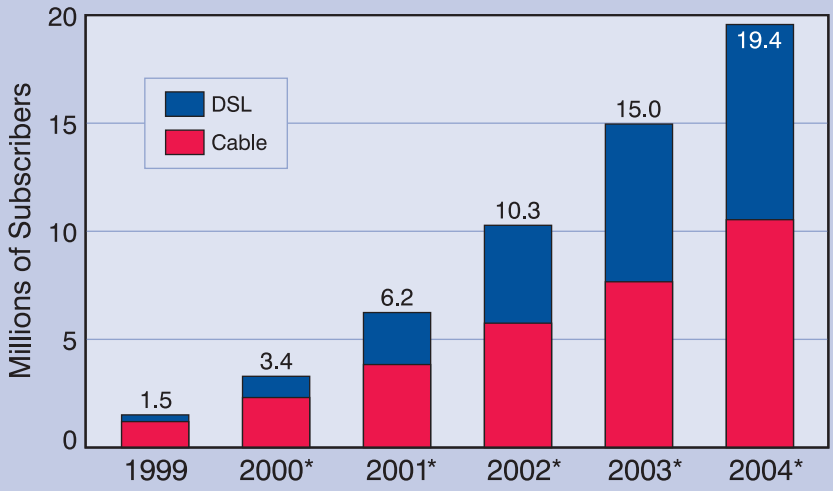
The Internet Backbone: Competition has promoted Internet backbone growth. Investment in Internet backbone is proceeding at a rapid pace spurred largely by market forces unleashed by the breakup of the Bell System and the rapid increase in demand for data services. Interexchange carriers, cable systems, electric utilities, and municipalities have all deployed backbone facilities.

The number of fiber optic route miles deployed in the United States exceeds 200,000 this year, an increase of more than 100 percent since 1995.[45] Long-haul trunking companies have invested billions of dollars to boost capacity and improve their networks. MCI quadrupled the speed of its Internet backbone in 1996 and doubled that capacity in 1997.[46]

Local Broadband Access: Most large and many mid-sized businesses have long been able to find and afford broadband Internet access, but

this year has seen huge gains in access availability to small businesses and residential users.

Broadband Subscribership

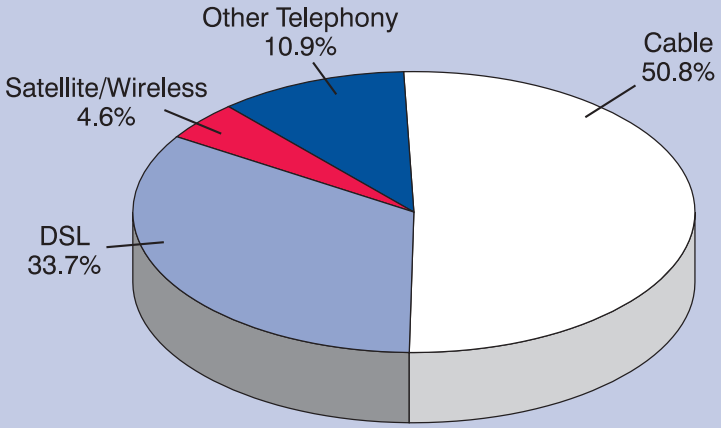


**Projected*
Source: The Industry Standard.

Competition has fueled this growth. Competitive local exchange carriers have invested more than $30 billion since 1996 to construct broadband networks.[47] Incumbent local exchange carriers have responded by increasing their investment in broadband access facilities. Verizon has announced it will spend $1 billion annually until 2005 to extend fiber optic transmission facilities far deeper into its distribution network so it can bring broadband over digital subscriber line (DSL) technology.[48] SBC Communications has initiated "Project Pronto", a three-year, $6 billion network upgrade that will make broadband service available to 80 percent of its subscribers by 2002.[49] The Federal Communications Commission estimates that potentially approximately 80 percent of U.S. homes and businesses can be reached over local exchange carrier facilities using DSL technology barring other impediments to DSL deployment. Analysts predict that DSL services will actually be available to 36 percent of U.S. homes by year-end 2000, increasing to 65 percent by 2002.[50]

The Administration has advocated policies that ensure that all competitors, using all technologies, can enter these markets. Cable television companies have invested $36 billion since 1996 to upgrade their distribution facilities, in large part to enable them to provide broadband access over cable modem. Analysts project that by the end of this year, cable modem will be available to over 50 percent of U.S. households, and that figure will increase to 80 percent by 2002.[51] The Federal Communications Commission has proceeded with redrafting rules for and licensing the Multipoint Multichannel Distribution System and Local Multichannel Distribution System radio spectra for use in two-way broadband access systems. Two-way satellite high bit-rate (500 kilobits per second

U.S. Households with High Speed Internet Access



Percent Distribution – 2000

downstream, 150 kilobits per second upstream) access is a reality now with the recent launch of the first dedicated, consumer-focused Internet satellite.[52]

Competition also can occur over a single wire, and the Administration has promoted policies to facilitate this. On the wireline local exchange carrier side, the Federal Communications Commission has taken the lead in opening access markets. In December 1999, the Federal Communications Commission required incumbent local exchange carriers, effective June 2000, to make available to competitors the high frequency portion of their wires, enabling competitors to offer DSL services on an equal footing as the incumbents.[53] In August 2000, the Commission began rulemaking to ensure that competing broadband service providers will have fair access to new broadband distribution networks that many incumbent local exchange carriers are constructing.[54] In October 2000, the Commission announced new regulations, which give competing carriers greater opportunities to provide broadband and other services in commercial, multi-tenant buildings.[55] Finally, the Commission has authorized Verizon and SBC Communications to provide long distance services in New York and Texas, which will test the companies' claims that allowing them to market long distance service will spur deployment of broadband services and facilities.[56]

Considerable attention continues to be focused on the issue of "open access" to broadband over cable. An open access policy would require cable operators to make their cable modem services available to unaffiliated ISPs, thereby enabling cable subscribers to select from among multiple ISPs. The courts have addressed open access, with the Federal Communications Commission following with a formal inquiry into the open access issue.[57] The open access issue also has arisen in the government's review of the proposed AOL/ Time Warner merger.[58] Cable television providers are beginning to deal with open access issues. AT&T has commenced or agreed to begin open access trials in several communities.[59] Time Warner has signed an agreement with Juno Online Services, although the terms of the agreement are not yet available.

The Administration continues to maintain the view it has previously articulated on the issue of open access:

> At the heart of this issue is consumer choice and competition at all levels of the marketplace. We believe that competition should be encouraged in all markets and support the principle that customers should have choice in both their content and their Internet access provider. Our Administration has long recognized the importance of the open characteristics of the Internet. Anyone with a laptop computer and a modem can publish on the Internet, making it much easier for people to be producers as well as consumers of information. The Internet allows people to engage in "many-to-many" communication as opposed to solely "one-to-many" communication. This has created an explosion in the number of communities that are based on shared interests as opposed to geography. Moreover, the decentralized nature of the Internet accelerates innovation and entrepreneurship. Anyone with a good idea for a new application can post it on the Internet, where it can spread like wildfire. We must maintain what is special, valuable and unique about the Internet, even as it evolves to support broadband applications. The Administration hopes that the continued promotion of pro-competitive policies and market forces will achieve these goals.[60]

The rate of growth in the small business – residential sector is so high it is difficult to measure. The Federal Communications Commission estimates that about 1 million residential customers were receiving broadband services at year-end 1999. That was a penetration rate of about one percent or three times the rate of the previous year. An October 2000 FCC Report indicates that as of June 2000 there were approximately 4.3 million high speed lines connecting homes and small businesses.[61] The Bureau of the Census August 2000 Current Population Survey indicates that 4.4 percent[62] of U.S. households have "high-speed" Internet access, a category composed predominately, though not exclusively, of broadband access.

2. Where Competition Does Not Drive Broadband Access, Special Attention is Needed

The Commission found in its second *Section 706 Report* that broadband services are being deployed in a timely fashion, but it nonetheless recognized that certain people and groups, including low-income consumers, those living in rural areas, minority households, Native Americans, and persons with disabilities, "are particularly vulnerable to not having access to advanced services."[63] That conclusion is in accord with the findings of a joint report by the National Telecommunications and Information Administration (NTIA) and the Department of Agriculture's Rural Utilities Service (RUS), which assessed deployment of advanced telecommunications services in rural America and compared that to access in more densely populated areas.[64] The NTIA/RUS study found that cable modem and DSL are not being deployed in rural areas as fast as they are in higher density cities and suburbs.[65] Recent Census data reinforces those findings: In August 2000, approximately 5 percent of all urban households had high-speed Internet access, versus only 2.8 percent of rural homes.[66]

Ensuring that broadband networks reach all Americans is an important goal of the Administration. We have therefore supported a range of initiatives such as the e-rate program, instituted in 1997 under the Telecommunications Act of 1996. As of the fall of 1999, 95 percent of U.S. public schools, and 63 percent of public school classrooms, had Internet access. In addition, 63 percent of public schools had dedicated connections to the Internet, which, in most cases, are broadband.[67] This year, the Administration has proposed several new programs to increase the availability of broadband services to under served areas. These programs are discussed above in the digital equality section of this report.

3. Advanced Mobile Communications/Third Generation Wireless Systems

The Administration recognizes that we are on the verge of a new generation of personal mobile communications. Third generation wireless technologies will bring high-speed Internet access to hand-held devices.[68] Higher speeds and new technologies will lead to new audio, video, and other applications becoming available through portable devices, leading to what many are calling "mobile-commerce" (m-commerce) that people will use in ways that are unimaginable today. Moreover, an international effort is underway to make it possible for the next generation of wireless phones to work anywhere in the world.

The U.S. Government has always played a crucial role in the development of wireless services. To foster the development of cellular telephone service, the U.S. Government made available radio frequency spectrum that had previously been used by other commercial and government services. For the second generation — digital cellular and PCS — the U.S. Government allocated spectrum in bands occupied by private sector users, and ensured competition by awarding numerous licenses, while maintaining technology neutrality. In less than 20 years, the U.S. wireless industry has blossomed from being virtually non-existent to one with over 100 million subscribers. Globally, subscribers are expected to exceed 600 million subscribers by year-end 2000.[69]

The Clinton-Gore Administration also has placed a high value on promoting Internet access. Government support for the development of third generation wireless systems will help combine the wireless revolution with the Internet revolution. As part of these efforts, radio spectrum must be made available for this new use. The United States has already been active by, among other things, participating at the World Radiocommunication Conference 2000 (WRC-2000) earlier this year. The United States endorses the principles adopted

at WRC-2000, e.g, that: (1) governments may choose spectrum from any one or all of the bands identified for third generation mobile wireless (3G); (2) governments have the flexibility to identify spectrum if and when they choose; and (3) no specific technology will be identified for third generation services. This result will allow deployment of the best technologies and permit the United States to move forward with rapid deployment of advanced communications services such as 3G.

In the United States, Federal Government agencies and the private sector are working together to provide advice to NTIA and FCC on what spectrum could be made available for third generation wireless systems. On October 13, 2000, President Clinton signed an Executive Memorandum directing Federal Agencies to work with the FCC and the private sector to identify radio spectrum needed for advanced communications services such as 3G. To meet this goal, the President directed the Secretary of Commerce to develop a plan by October 20, 2000, in cooperation with the FCC, the Department of Defense, and other Federal Agencies, setting forth the necessary steps that will result in licensing of third generation wireless systems by September 30, 2002. The President also directed the Secretary of Commerce to work cooperatively with the FCC to lead a government-industry effort, through a series of regular public meetings and workshops, to work cooperatively with all stakeholders to develop recommendations and plans for identifying spectrum for third generation wireless systems consistent with the basic principles adopted at the WRC-2000.

U.S. Government agencies are making swift progress in implementing the President's directive. NTIA and the FCC issued interim reports on November 15, 2000 on current spectrum uses and potential for reallocation or sharing of the bands identified at WRC-2000 that could be used for third generation wireless systems (http://www.ntia.doc.gov/ntiahome/threeg/index.html and http://www.fcc.gov/3G/). NTIA is currently working with the FCC in cooperation with industry representatives and others in the private sector to develop recommendations and plans for identifying spectrum for third generation wireless systems consistent with the WRC-2000 agreements, which may be implemented by the U.S. Government.

In addition to the NTIA-FCC outreach effort to industry, the FCC expects to commence a notice of proposed rulemaking by January 2001 to solicit public comment on its interim report. After the notice is released, the public may file comments on the proposals that the FCC will develop for allocating additional spectrum for advanced communication services, such as 3G. The FCC expects to issue a Report and Order allocating new spectrum for advanced communication services by July 2001 and anticipates auctioning newly allocated spectrum by September 2002.

One of the guiding principles for this effort's formulation and decision-making process will be the goal of supporting industry efforts to harmonize spectrum allocations regionally and internationally. Our effort will be to achieve this goal as far as practicable, based upon market demand and national considerations, including national security and international treaty obligations. Industry has an opportunity to participate actively in the on-going policy-making process and in the FCC's upcoming rule-making proceeding.

B. Making Sure Every Train Runs on Every Track – Standards to Facilitate Competition, Compatibility and Functionality

In President Clinton's July 1, 1997 Directive on Electronic Commerce, the President directed the Secretary of Commerce to support private sector development of Internet standards, and the U.S. Trade Representative to oppose foreign efforts to use e-commerce standards as trade barriers.

The Department of Commerce's National Institute of Standards and Technology (NIST) has provided technical support and coordination

of industry-led e-commerce standards development in the following fields:

- **Encryption.** Encryption of e-commerce information is essential, and the new Advanced Encryption Standard (AES) is nearing completion. The Third AES Candidate Conference was held on April 13-14, 2000, and was attended by 250 representatives from more than 25 countries. Final selection of the new AES is expected this fall.

- **Software Conformance Testing.** In higher-level e-commerce applications, software developers and users need to have the ability to evaluate new eXtensible Markup Language (XML) software products for their ability to manipulate, create, and exchange information. NIST, working with the Organization for the Advancement of Structured Information Standards and the World Wide Web Consortia, has produced a conformance test suite that is available free of charge at the following NIST web address: http://www.nist.gov/xml.

- **Supply Chains.** The NIST Internet Commerce for Manufacturing (ICM) project contributes to reducing industry risk in evaluating and adopting e-commerce technologies and practices. The ICM has developed a testbed for potential manufacturing standards for e-commerce systems and supply chains. In a related effort, the NIST Electronic Commerce of Component Information (ECCI) project is working with industry to develop standards for the exchange of technical information about electronic components throughout the supply chain. Working with the Silicon Integration Initiative and RosettaNet Consortia, NIST has developed reference implementation software, which is expected to accelerate the adoption of the standards.

- **Biometrics.** Biometrics is technology that automatically recognizes a person using distinguishing traits, and it has important implications for e-commerce. NIST co-chairs the Biometric Consortium, which serves as the government's focal point for the development, testing and application of this technology. NIST hosted the Biometric Consortium 2000 Conference on September 13-14, along with the National Security Agency, the Department of the Army's Biometrics Office, and the General Services Administration's Office of Smart Card Initiatives (www.nist.gov/itl/div895/isis/bc/bc2000).

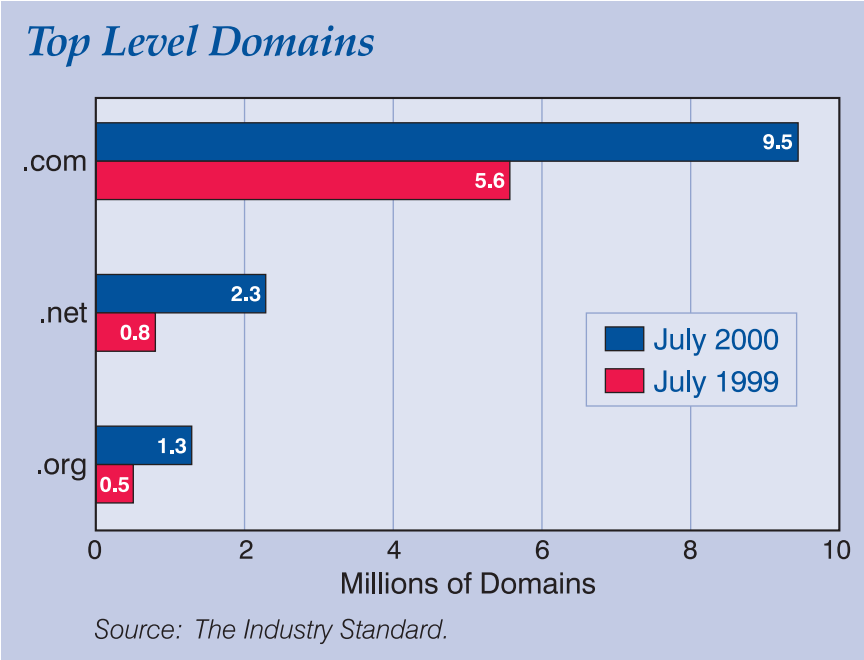
- **Interactive Television.** Interactive Television is the convergence of TV and the Internet, and is expected to have a profound effect on e-commerce. It promises to bring conventional television viewers, who may not have enthusiasm for computers, the benefits of e-commerce in an environment in which they are comfortable. Within the Society of Motion Picture and Television Engineers, an internationally recognized industry body, NIST is helping develop the Declarative Data Essence Standard for Interactive Television.

- **E-commerce Standards Roadmap.** NIST is developing a web-based standards roadmap of existing and emerging e-commerce standards and activities. This roadmap fills a great void, because as e-commerce has developed, there has been no recognized, easy to use and unbiased source of information regarding standard applications. The prototype of this roadmap is expected by the year-end 2000.

C. Letting the Private Sector Name the Destinations – Domain Name System Privatization

One of the best examples of the Administration encouraging private sector leadership in Internet management is in the area of domain name administration. The Internet Corporation for Assigned Names and Numbers (ICANN) (http://www.icann.org) has conducted its first worldwide membership drive and online elections. The activities undertaken this year have moved us closer to completing the transition to private sector management of Internet names and addresses. Over the past twelve months ICANN has:

- Conducted its first elections for At-Large members of its Board of Directors, with five directors taking their seats at the November 2000 ICANN meeting. The process registered over 158,000 users from around the world to participate in ICANN's At-Large membership.



Source: The Industry Standard.

- Implemented a process to select new Internet top level domains (TLDs). At its July meeting in Yokohama, Japan, ICANN adopted a policy to introduce new TLDs in a measured and responsible manner. After receiving extensive public comments on over 45 TLD proposals, ICANN selected seven new TLDs to move towards implementation. The selected TLDs are .info, .biz, .name, .pro, .coop, .museum, and .aero. ICANN anticipates that it will complete the necessary contractual negotiations and recommend implementation of the new TLDs by the first quarter of 2001.

- Measured its own effectiveness. Vigilant in its efforts to self-evaluate and build on its experience, ICANN continually reviews its operations, processes, and structure. As part of these efforts, ICANN is undertaking studies of its membership structure, advisory bodies, the new TLD process, and the Uniform Domain Name Dispute Resolution Policy (UDRP) that was adopted to resolve, in a non-binding manner, domain name disputes arising from cybersquatting.

- Continued to work with the Department of Commerce to increase security and stability of the Internet root server system. ICANN's Root Server System Advisory Committee is working towards completion of a plan to enhance the security and operations of the Internet root server system through implementation of procedural and architectural modifications.

- Increased competition in domain name registration. ICANN continues to develop a robust domain name registration environment through its ongoing registrar accreditation efforts. To date, ICANN has accredited over 120 registrars to register names in the .com, .net, and .org domains, representing over a 100 percent increase in the number of accredited registrars since this time last year. This globally competitive registration environment brings users greater choice, lower prices, and new, innovative services.

The November 1998 Memorandum of Understanding (MOU) between the Department of Commerce and ICANN called for the historic privatization of domain name administration to be completed by September 30, 2000. While extensive progress has been made to date, some tasks contemplated under the MOU remain to be completed. As such, a one-year extension of the MOU been mutually agreed upon by the Department and ICANN.

New Top Level Domain Names

In November, the Internet Corporation for Assigned Names and Numbers (ICANN) met to select new top level domains (TLDs) for addition to the global Internet. ICANN's selection followed a public consultation and review process, including discussion at an open, public forum that took place during the meeting. The following new TLDs were selected from some 47 applications:

.info – an open, general purpose domain
.biz – for businesses
.name -– for individual persons
.pro – for professionals (such as doctors and lawyers)
.museum – for museums and related institutions
.aero – for the airline and air travel information
.coop – for cooperative businesses

The new TLDs selected by ICANN represents the first significant expansion of global-use identifiers since the creation of the domain name system and promises to bring Internet users around the world new and innovative services, greater choice, and a richer Internet experience. Further, the diversity of the new TLDs selected provide a glimpse at how the domain name system of the future may be structured and enhanced. The information and experience gathered from this process and gained through actual operation of the new TLDs on the Internet will provide ICANN with guidance on how to approach TLD expansion in the future. The new TLDs are expected to be available online early in 2001.

The Department of Commerce also has issued a Request for Comment on a draft statement of work for the management and administration of the .us domain. During the coming months, the Department intends to issue a request for proposals for .us administration services.

Conclusion

This report catalogs our achievements over the last year. We believe there have been many. Among others, we have strengthened protections for consumers, for children and for our most sensitive information, and have made the Internet a safer, more secure place. We have established explicitly the legal validity of electronic signatures. We have enhanced protections for intellectual property rights. We have fought successfully to preserve the neutral and non-discriminatory taxation of commerce over the Internet. We have worked to continue the existing WTO moratorium on customs duties on electronic transmissions. We have further globalized and privatized technical management of the domain name system.

But we have done much more. Last year, President Clinton and Vice-President Gore directed us to pursue three new initiatives designed to take us beyond bits and bytes, and to use information technology to improve the lives of our citizens. One directive challenged us to help all Americans gain access to and master the computers and Internet access needed to participate in the Information Revolution. Another challenged us to use information technologies to enrich the lives of our citizens through applications such as distance-learning and tele-medicine. The final directive challenged us to use information technologies to make our government, more accessible, accountable, efficient and responsive.

We have delivered. We have succeeded in expanding digital opportunity and building digital equality. We have mobilized the resources of government and our partners in the business and non-profit community to enhance the lives of all Americans through digital technology. And we have launched government into the Information Age.

These successes, however, may obscure a more significant triumph. Perhaps the most durable achievement of the last several years has been the growing domestic and global consensus about the principles that have driven Administration policy in this area. This consensus is reflected in a growing body of bilateral joint statements on e-commerce and in multilateral understandings like the G-8 Okinawa Charter on the Global Information Society. Principles of private sector leadership, support for self-regulatory mechanisms, minimal government intervention and the avoidance of unnecessary barriers have not only maximized innovation but increased our citizens' welfare.

We are at the dawn of the Digital Revolution. This report is simply a snapshot of this Administration's efforts to promote and encourage aspects of this revolution. New technologies and new services await us. So do fresh challenges. The advent of mobile and ubiquitous broadband Internet, for example, promises to transform our daily life. The creativity, energy and resources of the private sector will benefit and inspire us, and, not incidentally, test the ability of governments to formulate appropriate policy responses. Around the world, new policy issues will arise unanticipated. So far, we can count our journey a success. The Clinton–Gore Administration has created an approach to information policy that we believe will prove enduring, relevant and constructive in addressing both the opportunities and the challenges that lie ahead.

Acknowledgements

Many individuals and their respective agencies contributed a great deal of time and effort to this report. We very much appreciate each of their important contributions. In particular, the Electronic Commerce Working Group would like to thank the following people, many of whom serve or have served as members of the Working Group. In alphabetical order, contributors include: Don Abelson, Gary Allan, Greg Baer, Julie Basile, Mark Bender, Michael Beresik, Alan Berube, Roger Bezdek, Jason Bordoff, Larry Brandt, Art Brodsky, Patricia Buckley, Becky Burr, Kathleen Cahill, Jack Cam, Ed Cameron, Norma Campbell, Mayi Canales, Kelly Carnes, Greg Carnill, Geoffrey Chapman, Todd Chapman, Dan Chenok, Audrey Choi, Michael Crowley, Bill Curtis, Laureen Daly, Fred Davidson, Delia Davis, Kevin DiGregory, Betsy D'Jamoos, Ed DuMont, Jennifer Duncan, Michelle Enger, Karen Freeman, Sharon Freeman, Adam Golodner, Rich Guida, Alastair Fitzpayne, George Haddow, Kelli Hagen, Don Hammond, Sheri Harris, Anthony Haynes, Brian Hengesbaugh, Brian Hensal, Katie Hirning, Dieter Hoinkes, Maxie Hollingsworth, Lynn Jennings, Tom Kalil, Russell Kile, Charlotte Knepper, Jim Kohlenberger, Wendy Lader, Adrienne Lavallee, Fred Lee, Malcom Lee, Kelly Levy, Glynis Long, Sarvesh Mahajan, Steve Mahaney, Demetrios Marantis, Elliot Maxwell, Jim McConnaughey, Tom McGinnis, Jonathan McHale, Chris McLean, Anthony Meyer, Mary Mitchell, Martin Moe, John Moeller, Sabrina Montes, Mark Montgomery, Jeff Moon, Michael Mundaca, Michelle ONeill, Derrick Owens, Phil Paparodis, Bob Pepper, Andrew Pincus, Dena Pushkin, Kate Rodriguez, Greg Rohde, Karen Rose, Barbara Rosenfeld, Dana Rosenfeld, Lisa Rosenthal, Brenton Ross, Peter Rundlet, Barry Scanlon, Clinton Schaff, Ken Schagrin, Andrew Schneider, Patty Sefcik, Pat Smith, Christina Speck, Tom Stack, Anne Stauffer, Lauren Steinfeld, Bob Stoll, Harry Sullivan, Jim St. Pierre, Mary Streett, Peter Swire, Linda Thibodeaux, Jean Veta, Carol Wacey, Jim Wasilewski, Barbara Wellbery, Jacqueline Williams, Jonathan Womer and Ray Woolburn. If we have inadvertently left anyone out, we extend our sincere apologies and want you to know that your efforts also are very much appreciated.

The Working Group consists of representatives from the White House and the principal Federal agencies involved in electronic commerce, including the Departments of Commerce, Treasury, State, Justice, Agriculture, Interior, Veterans Affairs, and Health and Human Services, the U.S. Trade Representative's Office, the General Services Administration, the Small Business Administration, the Federal Communications Commission, the Federal Trade Commission, the Consumer Safety Board, the Environmental Protection Agency, the Federal Emergency Management Agency, the National Science Foundation, and the Social Security Administration.

Under the leadership of Vice President Gore, the Working Group strives to implement the Administration's strategic vision to promote the growth of electronic commerce and allow its social and economic benefits to reach all people. The Chair of the Electronic Commerce Working is David Beier, Chief Domestic Policy Advisor for the Vice President. The Vice Chair is Sally Katzen, Counselor to the Director, Office of Management and Budget. Elizabeth Echols is the Executive Director of the Working Group. Ron Keohane is Senior Advisor to the Working Group and Director of the Secretariat for Electronic Commerce at the Department of Commerce. Andrew Weinschenk is Senior Advisor to the Working Group and Director of Information Policy, Economic and Business Bureau, at the Department of State.

This report can be cited as "Leadership for the New Millennium: *Delivering on Digital Progress and Prosperity*," U.S. Government Working Group on Electronic Commerce, 3rd Annual Report, 2000. For further information, please visit our website at http://www.ecommerce.gov.

Appendices – Presidential Directives

July 1, 1997

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: Electronic Commerce

The invention of the steam engine two centuries ago and the subsequent harnessing of electricity for communications ushered in an industrial revolution that fundamentally altered the way we work, brought the world's people closer together in time and space, changed the way we organize our economies, and brought us greater prosperity.

Today, we are on the verge of another revolution. Inventions like the integrated circuit, the computer, fiber optic cable, and the Internet are changing the way we work, learn, and communicate with each other.

Students and teachers can have immediate access to the world's information from their classrooms; doctors can administer diagnoses to patients in remote parts of the globe from their offices; and citizens of many nations are finding additional outlets for personal and political expression.

As the Internet empowers citizens and democratizes societies, it is also changing the way business is conducted: entrepreneurs are able to start new businesses more easily by accessing the Internet's worldwide network of customers; world trade involving computer software, entertainment products, information services, professional consulting, financial services, education businesses, medical diagnostics, advertising, and technical services is increasing rapidly as the Internet dramatically lowers costs and facilitates new types of commercial transactions; engineers, product developers, and managers thousands of miles apart can collaborate to design and manufacture new products more efficiently; businesses can work more efficiently with their suppliers and customers; consumers have greater choice and can shop in their homes for a wide variety of products from manufacturers and retailers all over the world, and they will be able to view these products on their computers or televisions, access information about the products, and order and pay for their choices, all from their living rooms.

According to several estimates, commerce on the Internet will total tens of billions of dollars by the turn of the century and could expand rapidly after that, helping fuel economic growth well into the 21st century.

For this potential to be realized, governments must adopt a market-oriented approach to electronic commerce, one that facilitates the emergence of a global, transparent, and predictable environment to support business and commerce.

Government officials must respect the unique nature of the medium and recognize that widespread competition and increased consumer choice should be the defining features of the new digital marketplace.

Many businesses and consumers are still wary of conducting extensive business over the Internet because of the lack of a predictable legal environment governing transactions. This is particularly true for international commercial activity where concerns about enforcement of contracts, liability, intellectual property protection, privacy, security, and other matters have caused businesses and consumers to be cautious.

Many companies and Internet users are also concerned that domestic or foreign governments will impose extensive regulations on the Internet and electronic commerce including taxes and tariffs, restrictions on the type of information transmitted, control over standards development, licensing requirements, and extensive regulation of Internet service providers. Indeed, signs of these types of commerce-inhibiting actions already are appearing in many nations.

Governments can have a profound effect on the growth of electronic commerce. By their actions, they can facilitate electronic trade or inhibit it. Knowing when to act and — at least as important – when not to act, will be crucial to the development of electronic commerce.

Today I have approved and released a report — "A Framework For Global Electronic Commerce" — outlining the principles that will guide my Administration's actions as we move forward into the new electronic age of commerce. This report articulates my Administration's vision for the emerging digital marketplace by declaring a set of principles, presenting a series of policies, and establishing an agenda for international discussions and agreements to facilitate the growth of electronic commerce. I expect all executive departments and agencies to review carefully the principles in this framework and implement appropriate policies.

Accordingly, I am hereby directing that executive department and agency heads should be guided in any future actions they take related to electronic commerce by the following principles:

— For electronic commerce to flourish, the private sector must lead. Therefore, the Federal Government should encourage industry self-regulation wherever appropriate and support private sector efforts to develop technology and practices that facilitate the growth and success of the Internet.

— Parties should be able to enter into legitimate agreements to buy and sell products and services across the Internet with minimal government involvement or intervention. Therefore, the Federal Government should refrain from imposing new and unnecessary regulations, bureaucratic procedures, or taxes and tariffs on commercial activities that take place on the Internet.

— In some areas, government involvement may prove necessary to facilitate electronic commerce and protect consumers. Where governmental involvement is necessary, its aim should be to support and enforce a predictable, consistent, and simple legal environment for commerce.

— The Federal Government should recognize the unique qualities of the Internet including its decentralized nature and its tradition of bottom-up governance. Existing laws and regulations that may hinder electronic commerce should be revised or eliminated consistent with the unique nature of the Internet.

— The Internet is emerging as a global marketplace. The legal framework supporting commercial transactions on the Internet should be governed by consistent principles across State, national, and international borders that lead to predictable results regardless of the jurisdiction in which a particular buyer or seller resides.

I also direct the relevant agencies as identified in "A Framework For Global Electronic Commerce" to pursue the following policies:

1. I direct the U.S. Trade Representative to work with foreign governments to secure agreement within the next 12 months that all products and services delivered across the Internet will not be subject to tariffs and that all equipment from which the Internet is built will also not be subject to tariffs.

2. I direct the U.S. Trade Representative to work with foreign governments to enforce existing agreements and secure new agreements to make electronic commerce a seamless global marketplace. This will include enforcing provisions of the recently concluded World Trade Organization (WTO) Telecommunications Services Agreement; ensuring that product testing, certification, and approval processes do not unnecessarily restrict trade; ensuring that service providers have nondiscriminatory access to customers worldwide; and other measures that ensure a free flow of commerce.

3. I direct the Secretary of Commerce to seek the protection of copyright in the digital environment by working to achieve ratification in the United States and overseas within the next 12 months of the World Intellectual Property Organization (WIPO) Copyright Treaty and the WIPO Performances and Phonograms Treaty.

4. I direct the Secretary of Commerce to update and make more efficient our system for protecting patentable innovations to meet the needs of the fast-moving electronic age and to seek agreements with other governments to protect patentable innovations worldwide.

5. I direct the Secretary of Commerce to support efforts to make the governance of the domain name system private and competitive and to create a contractually based self-regulatory regime that deals with potential conflicts between domain name usage and trademark laws on a global basis.

6. I direct the Secretary of the Treasury to work with State and local governments and with foreign governments to achieve agreements that will ensure that no new taxes are imposed that discriminate against Internet commerce; that existing taxes should be applied in ways that avoid inconsistent national tax jurisdictions and double taxation; and that tax systems treat economically similar transactions equally, regardless of whether such transactions occur through electronic means or through more conventional channels of commerce.

7. I direct the Secretary of Commerce to work with the private sector, State and local governments, and foreign governments to support the development, both domestically and internationally, of a uniform commercial legal framework that recognizes, facilitates, and enforces electronic transactions worldwide. I further direct the Secretary of Commerce within the next 12 months to seek to gain agreement with the private sector, State and local governments, and foreign governments, both domestically and internationally, on common approaches for authentication of electronic transactions through technologies such as digital signatures.

8. I direct the Secretary of Commerce and the Director of the Office of Management and Budget to encourage private industry and privacy advocacy groups to develop and adopt within the next 12 months effective codes of conduct, industry developed rules, and technological solutions to protect privacy on the Internet consistent with the Privacy Principles issued by the Information Infrastructure Task Force (IITF) Privacy Working Group. I further direct the Director of the OMB to develop recommendations on the appropriate role of government consistent with "A Framework For Global Electronic Commerce." I further direct the Secretary and the Director to ensure that means are developed to protect the privacy of children.

9. I direct the Secretary of Commerce to encourage the development and adoption within the next 12 months by industry of easy to use and effective rating systems and filtering technologies that empower parents, teachers, and other Internet users to block content that is inappropriate for children.

10. I direct the Secretary of Commerce to support private sector development of technical standards for the Internet and the U.S. Trade Representative to oppose efforts by foreign governments to impose standards or to use standards for electronic commerce as non-tariff trade barriers.

11. I direct the Secretary of the Treasury to cooperate with foreign governments to monitor newly developing experiments in electronic payment systems; to oppose attempts by governments to establish inflexible and highly prescriptive regulations and rules that might inhibit the development of new systems for electronic payment; and as electronic payment systems develop, to work closely with the private sector in order to keep apprised about policy development and ensure that governmental activities flexibly accommodate the needs of the emerging marketplace.

12. I direct all executive departments and agencies to promote efforts domestically and internationally to make the Internet a secure environment for commerce. This includes ensuring secure and reliable telecommunications networks; ensuring an effective means for protecting the information systems attached to those networks; ensuring an effective means for authenticating and guaranteeing confidentiality of electronic information to protect data from unauthorized use; and providing information so that Internet users become well-trained and understand how to protect their systems and their data.

13. I direct the Administrator of General Services to move the Federal Government into the age of electronic commerce by expanding "GSA Advantage," its online shopping service for the Federal community to cover four million items by 12 months from now.

I am asking the Vice President to lead an interagency group coordinating the U.S. Government's electronic commerce strategy. Further, I am directing that executive department and agency heads report back to the Vice President and me through this interagency group every 6 months on their progress in meeting the terms of this directive.

WILLIAM J. CLINTON

November 30, 1998

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: Successes and Further Work on Electronic Commerce

The Internet and electronic commerce have the potential to transform the world economy. The United States Government is committed to a market-driven policy architecture that will allow the new digital economy to flourish while at the same time protecting citizens' rights and freedoms.

Today my Administration has released a report that details the significant progress made on the implementation of my Directive on Electronic Commerce of July 1, 1997, and its accompanying policy statement, "A Framework for Global Electronic Commerce." The electronic commerce working group that has coordinated the United States Government's electronic commerce strategy has accomplished a great deal. I am proud of its significant achievements. Governments and private sector organizations around the world now recognize the importance of the Internet and electronic commerce and the viability of the approaches contained in the 1997 report as a means of ensuring future economic success. I am optimistic that the progress realized to date will be continued during the next year.

In order to complete implementation of my July 1, 1997, directive by January 1, 2000, I direct that work continue in the 13 areas listed therein.

In addition, new areas have emerged during the past year that deserve particular attention. To ensure progress in these areas, I hereby direct as follows:

Section 1. The Secretary of Commerce, in appropriate consultation with the Federal Communications Commission, shall encourage the deployment of advanced telecommunications capabilities for all Americans while preserving the vibrant and competitive free market that exists for the Internet and other interactive computer services. These agencies shall work with the Office of the United States Trade Representative to help ensure the elimination of foreign trade barriers to the deployment of advanced telecommunications capabilities.

Section 2. The Secretary of Commerce, in appropriate consultation with the Federal Trade Commission and other relevant agencies, shall foster consumer confidence in electronic commerce by working to ensure effective consumer protection online. This shall include exploring opportunities for global cooperation to enforce consumer protection laws and facilitating partnerships between industry and consumer advocates to develop redress mechanisms for online consumers. These agencies shall work with the Office of the United States Trade Representative to help avoid the creation of foreign trade barriers while protecting the interests of consumers.

Section 3. The Secretary of State, in appropriate cooperation with the Agency for International Development, the Secretary of Commerce, the Federal Communications Commission, the Overseas Private Investment Corporation, and other relevant agencies, shall initiate a program to help accelerate the spread of the Internet and electronic commerce to developing countries. This shall include a demonstration of successful models for development in a small number of interested

countries and should highlight and create incentives for public/private sector partnerships to serve as a catalyst for successful private action. The Secretary of State should seek the cooperation of the World Bank and other multilateral organizations in initiating this program.

Section 4. The Assistant to the President for Economic Policy, in appropriate consultation with the Secretaries of Commerce, the Treasury, Labor, and other relevant agency heads, shall analyze the economic impact of the Internet and electronic commerce in the United States and internationally. This shall include convening a conference of experts from the public and private sectors to assess the impact of investments in information technology and the influences of electronic commerce and related technologies on the economy. These experts shall consider new indicators for the information economy, new types of data collection, and new research that could be undertaken by organizations in the public and private sectors. To broaden public understanding of the impact of electronic commerce, the Department of Commerce shall publish a follow-up report to the "Emerging Digital Economy" report it issued this year.

Section 5. The Secretary of Commerce and the Administrator of the Small Business Administration shall develop strategies to help small businesses overcome barriers to the use of the Internet and electronic commerce. The initiative shall consider the need to train Federal Government employees who have contact with small businesses on the use of the Internet and electronic commerce; identify commonly used Government products and forms that should be moved to the Internet to enable small business to use the Internet to interact with the Government; and develop an outreach plan to enhance electronic access to information and services that can assist small businesses' development using the Internet and electronic commerce.

Section 6. The directives in sections 1-5 of this memorandum and my July 1, 1997, directive shall be conducted subject to the availability of appropriations and consistent with the agencies' priorities and my budget.

Section 7. The Vice President shall continue his leadership in coordinating the United States Government's electronic commerce strategy. Further, I direct that heads of executive departments and agencies report to the Vice President and me through the Electronic Commerce Working Group in 1 year on their progress in meeting the goals of the July 1, 1997, directive as well as their accomplishments under this memorandum.

WILLIAM J. CLINTON

December 9, 1999

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: Narrowing the "Digital Divide:" Creating Opportunities for All Americans in the Information Age

Information tools, such as the personal computer and the Internet, are increasingly important to economic success and full participation in all aspects of American society. People with computers and Internet access can use these tools to find a job, acquire new skills, start a small business, get lower prices for goods and services, and become more informed citizens.

Currently, not all Americans are enjoying the benefits of the Information Age tools. In July 1999, the National Telecommunications and Information Administration issued a report, Falling Through the Net: Defining the Digital Divide, which found a growing gap between those with access to these tools and those without. Black and Hispanic households are only two-fifths as likely to have Internet access as white households. Households with incomes of $75,000 and higher, in urban areas, are more than twenty times as likely to have access to the Internet as households at the lowest income levels, and more than nine times as likely to have a computer at home. As information technology plays an ever-increasing role in Americans' economic and social lives, we cannot afford to leave anyone behind.

Fortunately, competition and advances in technology are driving down the cost of computers and Internet access, which will make these new Information Age tools affordable for more Americans. I believe that we should set a national goal of making computers and Internet access available for every American. Furthermore, we should explore ways of using technology to expand the economic opportunities for those Americans who have not yet enjoyed the benefits of our prosperity.

Accordingly, I am directing executive departments and agencies ("agencies") to take the following specific actions to help Americans benefit from advances in information technology:

1. The Secretary of Commerce shall work with the private sector and others to develop a national strategy for making computers and the Internet accessible to all Americans, with the goal of significantly narrowing the "digital divide."

2. The Secretary of Commerce shall continue to measure the level of connectivity of Americans to telecommunications and information tools, and report periodically on the relationship of income, education, race, gender, geography, and age to Americans' access to these tools.

3. The Secretaries of Education, Housing and Urban Development, Health and Human Services, Labor, and Commerce shall:

   (a) expand our growing network of Community Technology Centers to provide access to technology for low-income Americans; and

   (b) encourage the development of information technology applications that would help enable low-income Americans to start and manage their own small businesses.

4. The Secretaries of Education, Labor, and Commerce shall work with the private sector to upgrade the information technology skills of America's workforce, particularly workers living in disadvantaged urban and rural communities.

5. The Secretary of Commerce, the Secretary of Education, and the Secretary of Housing and Urban Development shall highlight and disseminate the lessons learned from their grant programs and educational technology initiatives, with an emphasis on underserved citizens, to increase the number of communities across the Nation that could reap the benefits of information technologies for their residents.

6. Items 1-5 of this memorandum and my July 1, 1997, and November 30, 1998, memoranda shall be conducted subject to the availability of appropriations and consistent with agencies' priorities and my budget, and to the extent permitted by law.

7. The Vice President shall continue his leadership in coordinating the United States Government's electronic commerce strategy. Further, I direct that the heads of executive departments and agencies report to the Vice President and to me on their progress in meeting the terms of this memorandum, through the Electronic Commerce Working Group (ECWG) in its annual report. To the extent that substantial new policy issues emerge, the analysis and action on those policies will be coordinated in a manner consistent with the responsibilities of the ECWG, the National Economic Council, and the Domestic Policy Council, as appropriate.

WILLIAM J. CLINTON

December 17, 1999

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: Electronic Government

My Administration has put a wealth of information online. However, when it comes to most Federal services, it can still take a paper form and weeks of processing for something as simple as a change of address.

While Government agencies have created "one-stop-shopping" access to information on their agency web sites, these efforts have not uniformally been as helpful as they could be to the average citizen, who first has to know which agency provides the service he or she needs. There has not been sufficient effort to provide Government information by category of information and service — rather than by agency — in a way that meets people's needs.

Moreover, as public awareness and Internet usage increase, the demand for online Government interaction and simplified, standardized ways to access Government information and services becomes increasingly important. At the same time, the public must have confidence that their online communications with the Government are secure and their privacy protected.

Therefore, to help our citizens gain one-stop access to existing Government information and services, and to provide better, more efficient, Government services and increased Government accountability to its citizens, I hereby direct the officials in this memorandum, in conjunction with the private sector as appropriate, to take the following actions:

1. The Administrator of General Services, in coordination with the National Partnership for Reinventing Government, the Chief Information Officers' Council, the Government Information Technology Services Board, and other appropriate agencies shall promote access to Government information organized not by agency, but by the type of service or information that people may be seeking; the data should be identified and organized in a way that makes it easier for the public to find the information it seeks.

2. The heads of executive departments and agencies (agencies) shall, to the maximum extent possible, make available online, by December 2000, the forms needed for the top 500 Government services used by the public. Under the Government Paperwork Elimination Act, where appropriate, by October 2003, transactions with the Federal Government should be available online for online processing of services. To achieve this goal, the Director of the Office of Management and Budget shall oversee agency development of responsible strategies to make transactions available online.

3. The heads of agencies shall promote the use of electronic commerce, where appropriate, for faster, cheaper ordering on Federal procurements that will result in savings to the taxpayer.

4. The heads of agencies shall continue to build good privacy practices into their web sites by posting privacy policies as directed by the Director of the Office of Management and Budget and by adopting and implementing information policies to protect children's information on web sites that are directed at children.

5. The head of each agency shall permit greater access to its officials by creating a public electronic mail address through which citizens can contact the agency with questions, comments, or concerns. The heads of each agency shall also provide disability access on Federal web sites.

6. The Director of the National Science Foundation, working with appropriate Federal agencies, shall conduct a 1-year study examining the feasibility of online voting.

7. The Secretaries of Health and Human Services, Education, Veterans Affairs, and Agriculture, the Commissioner of Social Security, and the Director of the Federal Emergency Management Agency, working closely with other Federal agencies that provide benefit assistance to citizens, shall make a broad range of benefits and services available though private and secure electronic use of the Internet.

8. The Administrator of General Services, in coordination with the Secretary of the Treasury, the Secretary of Commerce, the Government Information Technology Services Board, the National Partnership for Reinventing Government, and other appropriate agencies and organizations, shall assist agencies in the development of private, secure, and effective communication across agencies and with the public, through the use of public key technology. In light of this goal, agencies are encouraged to issue, in coordination with the General Services Administration, a Government-wide minimum of 100,000 digital signature certificates by December 2000.

9. The heads of agencies shall develop a strategy for upgrading their respective agency's capacity for using the Internet to become more open, efficient, and responsive, and to more effectively carry out the agency's mission. At a minimum, this strategy should involve:

   (a) expanded training of Federal employees, including employees with policy and senior management responsibility;

   (b) identification and adoption of "best practices" implemented by leading public and private sector organizations;

   (c) recognition for Federal employees who suggest new and innovative agency applications of the Internet;

   (d) partnerships with the research community for experimentation with advanced applications; and

   (e) mechanisms for collecting input from the agency's stakeholders regarding agency use of the Internet.

10. Items 1-8 of this memorandum and my July 1, 1997, and November 30, 1998, memoranda shall be conducted subject to the availability of appropriations and consistent with agencies' priorities and my budget, and to the extent permitted by law.

11. The Vice President shall continue his leadership in coordinating the United States Government's electronic commerce strategy. Further, I direct that the heads of executive departments and agencies report to the Vice President and to me on their progress in meeting the terms of this memorandum, through the Electronic Commerce Working Group in its annual report.

WILLIAM J. CLINTON

December 17, 1999

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: Use of Information Technology to Improve Our Society

The Internet and other information and communications technologies are changing the way we work, learn, communicate with each other, and do business. These technologies are shaping our economy and our society in the same way that the steam engine and electricity defined the Industrial Age.

In recent years, information technology has driven the U.S. economy. Businesses are scrambling to use the Internet to increase productivity, boost exports, cut the time required to develop new products, and forge closer relationships with customers and suppliers. My Administration has pursued a market-led approach to global electronic commerce that relies whenever possible on private sector leadership and seeks to eliminate legal and regulatory barriers to electronic commerce while protecting the public interest.

The Internet has the potential to enhance civil society as well as to boost commerce. Used creatively, the Internet and information technology can be a powerful tool for tackling some of our toughest social challenges as well as fostering economic growth. Information technology can and is being used to make it easier for working adults to acquire new skills, increase access to healthcare in isolated rural communities, improve the quality of life for people with disabilities, and strengthen our democracy.

My Administration has led the effort to explain and support the commercial and societal benefits of information technology to the American people. However, we can and must do more. To that end, I am directing executive department and agency heads in this memorandum to take certain actions. As they carry out these actions, they should:

(a) adopt policies that will remove barriers to private sector investment in Internet applications;

(b) explore partnerships with companies, State, local, and tribal governments, and other entities, such as nonprofit organizations and universities;

(c) explore innovative mechanisms for fostering a national discussion on the potential of the electronic society;

(d) consider other policies to promote the electronic society, such as the establishment of national goals; and

(e) review the recommendations of the President's Information Technology Advisory Committee, particularly as they relate to support for information technology applications with broad societal benefits.

Therefore, to further promote the broader social benefits of the Information Age to the American people, I direct the officials in this memorandum to take the following actions:

1. The Secretary of Health and Human Services shall identify additional steps that can be taken to promote expanded access to higher quality, cost-effective health care to underserved rural communities and inner city clinics, and other health-care applications of information technology.

2. The Secretary of Education shall support and encourage States and local communities to make "school report cards" available on the Internet. The Secretary of the Interior shall make it possible for "school report cards" on Bureau of Indian Affairs schools and tribally controlled schools to be available on the Internet.

3. The Secretaries of Education and Labor shall work with States and institutions of higher education to remove legal and regulatory barriers to high-quality distance learning, to increase awareness of the availability of distance learning as an alternative means of education and training, and to find ways to promote the earning of credentials through distance learning. The Secretary of Education shall assist the Tribal Colleges and Universities in developing associate and baccalaureate programs in information technology, using innovative distance learning technology.

4. The Secretary of Education shall propose the next phase of my Administration's Educational Technology Initiative. The next phase should address teacher training, the integration of technology in the curriculum, the evaluation of technology, the market for educational software and web content, the need for more multimedia computers in the classroom, and the need for investments in educational technology research and development.

5. The Secretary of Labor shall determine how telecommuting might be used to help more disabled Americans get jobs and to provide jobs for Americans located in geographic regions outside traditional commuting areas, including isolated tribal communities.

6. The Secretary of Education and the Director of the National Science Foundation shall develop a research agenda for making the Internet and information technology more usable by persons with disabilities. The Secretary of Commerce shall encourage the private sector to make web content, software, and development tools more accessible for people with disabilities by adopting technical standards consistent with the Web Accessibility Initiative.

7. The Administrator of the Environmental Protection Agency shall develop a national strategy for promoting environmental applications of information technology (such as disseminating information about manufacturing techniques that reduce pollution, and increasing the timeliness of environmental information).

8. The Secretary of Agriculture shall identify services that can be delivered electronically to rural Americans (such as the results of Federally funded research at our Nation's land-grant universities), and develop the policies needed to promote the availability of advanced telecommunications services in rural and tribal communities.

9. The Secretary of Commerce shall identify policies that will encourage more effective use of information technology by nonprofit organizations.

10. The Secretary of the Treasury, in coordination with appropriate Federal agencies and private sector stakeholders, shall identify policy initiatives that promote greater access to financial services through the use of information technology.

11. The Secretary of the Interior shall identify policies that will accelerate the use of unclassified geospatial information systems at the State, local, and tribal level.

12. The Director of the Federal Emergency Management Agency shall work with research universities and the private sector to apply advances in information technology to managing the consequences of natural and man-made disasters.

13. The Secretary of the Smithsonian Institution, the Director of the National Science Foundation, the Director of the National Park Service, and the Director of the Institute of Museum and Library Services shall work with the private sector and cultural and educational institutions across the country to create a Digital Library of Education to house this country's cultural and educational resources.

14. The Attorney General shall work with Federal, State, local, and tribal law enforcement agencies to use information technologies to make our Nation's communities safer.

15. Items 1-14 of this memorandum and my July 1, 1997, and November 30, 1998, memoranda shall be conducted subject to the availability of appropriations, consistent with the agencies' priorities and my budget, and to the extent permitted by law.

16. The Vice President shall continue his leadership in coordinating the United States Government's electronic commerce strategy. Further, I direct that the heads of agencies report to the Vice President and to me on their progress in meeting the terms of the memorandum, through the Electronic Commerce Working Group (ECWG) in its annual report. To the extent that substantial new policy issues emerge, the analysis and action on those policies will be coordinated in a manner consistent with the responsibilities of the ECWG, the National Economic Council, and the Domestic Policy Council, as appropriate.

WILLIAM J. CLINTON

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(59) "Massachusetts Coalition for Consumer Choice and Competition on the Internet and AT&T Agree on Plan for Consumer Choice of ISPs in Massachusetts," AT&T Press Release, 27 June 2000 (www.att.com/press/item//0,1354,3037,00.html); "AT&T Broadband To Launch Trial of Multiple Internet Providers," AT&T Press Release, 7 June 2000 (www.att.com/press/item/0,1354,2951,00.html).

(60) *Towards Digital Equality*, U.S. Government Working Group on Electronic Commerce, 2nd Annual Report (1999), at 16.

(61) High speed lines can provide over 200 Kbps in at least one direction. FCC, "Federal Communications Commission Releases Data on High–Speed Services for Internet Access," News Release, October 31, 2000 (www.fcc.gov).

(62) Falling Through the Net 4 at 24.

(63) Second Section 706 Report (2000) at 6.

(64) National Telecommunications and Information Administration and Rural Utilities Service, "Advanced Telecommunications in Rural America: The Challenge of Bringing Broadband Service to All Americans," Apr. 2000, (www.ntia.doc.gov/reports/ruralbb42600.pdf).

(65) *Id.* at 17-23.

(66) Falling Through the Net 4 at 24.

(67) National Center for Education Statistics, "Internet Access in U.S. Public Schools and Classrooms: 1994-1999," *Stats in Brief*, Feb. 2000 (nces.ed.gov/pubs2000/2000086.pdf).

(68) The development of so-called "third generation" wireless services represents a trend towards high-speed, broadband services, similar to what is being seen for wired services. Depending on the system and how it is configured, however, data rates for such wireless services, may not be as fast as what can be achieved for wired services, and therefore may not all meet the definition of "broadband" services as defined by the FCC or others. For example, IMT-2000 protocols developed through the International Telecommunication Union have estimated speeds of 144 kps for high mobility (e.g., vehicular) traffic, 384 kps for pedestrian traffic, and 2 mps or higher for fixed (e.g., indoor) traffic. Third generation services, however, represent a significant increase in capacity over what is available today, and offer an alternative means of obtaining Internet and other data services.

(69) Cellular Telephone Industry Association (www.wow-com.com); Electronic Trend Publications, "The Worldwide Wireless Network," July 2000.

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