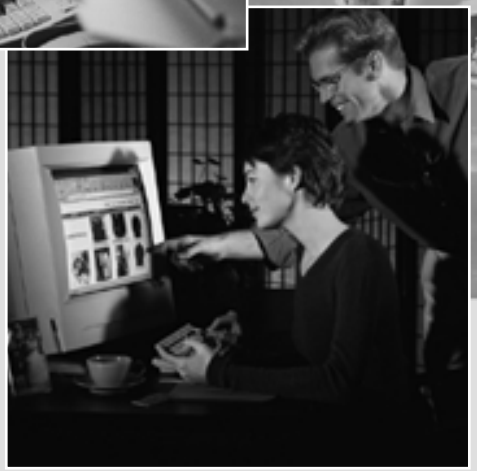
Economic Perspectives

Volume 5 *An Electronic Journal of the U.S. Department of State* *Number 2*

INTERNATIONALIZATION OF E-COMMERCE



Bridging the Global Digital Divide

New International E-Commerce Rules

Strategies for Countering Cyberattacks

Fighting Internet Fraud

Internet Development in Poland

May 2000

ECONOMIC PERSPECTIVES

Internationalization of E-Commerce

U.S. DEPARTMENT OF STATE *ELECTRONIC JOURNAL* *VOLUME 5, NUMBER 2, MAY 2000*

Innovations in information and communications technologies have created a digital revolution that is changing the way the world works, learns, communicates and transacts business. This revolution is helping to foster economic growth and social development across the globe. Businesses are using the tools of electronic commerce to increase productivity, access global markets, reduce the time required to develop new products, and forge closer relationships with their customers. Some observers estimate that by 2003, global e-commerce could well exceed $1.8 trillion.

The Internet and other technologies also are helping us tackle some of our toughest social challenges. They are helping us educate our children, protect our health, and make government more efficient, responsive, participatory and transparent. Ultimately, the Internet and other technologies are helping us to renew our most cherished values: raising standards of living, literacy and learning while widening the circle of democracy and empowering the individual.

Unfortunately, not all countries or communities are participating fully in these dramatic developments. We must work together to realize the potential of the Digital Revolution for all our citizens. Together, we have the chance to create "digital opportunities" worldwide: to improve access to information and communications technology in underserved regions and communities; to bring 21st century learning to all corners of the world; to bring the latest medical insights to areas where there are barely enough doctors today; to strengthen democracy and freedom; and to create networks that allow every business no matter how small to market and sell products directly to the entire world.

This vision is not necessarily self-fulfilling, however. Governments must adopt appropriate policies if they wish to foster the growth of the Internet. Perhaps the single most important contribution they can make is to establish conditions that unleash the dynamism, technology and capital of the private sector. This means letting the private sector lead in the development of the Internet, avoiding unnecessary regulations, and adopting minimal government regulation only where necessary to protect the public interest. It means encouraging private investment, competition, open access, flexible regulatory frameworks and universal service.

The pages that follow in this electronic journal examine more closely some of the principles, policies and programs that will best promote global electronic commerce and allow us to reap the full social benefits of the Internet. I believe that among the greatest challenges we face in the millennium ahead is creating the conditions that will unlock the power and deliver on the promise of the Internet.

I urge you to join me in working toward that goal.

Vice President Al Gore

ECONOMIC PERSPECTIVES
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ECONOMIC PERSPECTIVES

An Electronic Journal of the U.S. Department of State *Volume 5, Number 2, May 2000*

The Office of International Information Programs of the U.S. Department of State provides products and services that explain U.S. policies to foreign audiences. The Office publishes five electronic journals that examine major issues facing the United States and the international community. The journals — *Economic Perspectives, Global Issues, Issues of Democracy, U.S. Foreign Policy Agenda*, and *U.S. Society and Values* — provide analysis, commentary, and background information in their thematic areas. All journal editions appear in English, French, and Portuguese language versions, and selected issues also appear in Arabic, Russian, and Spanish. A new English-language issue is published every three to six weeks. Translated versions normally follow the English original by two to four weeks. The order in which the thematic editions appear is irregular, as some editions publish more issues than others.

Current or back issues of the journals can be found on the Office of International Information Programs' International Home Page on the World Wide Web at http://usinfo.state.gov/journals/journals.htm. They are available in several electronic formats to facilitate viewing on-line, transferring, downloading, and printing. Comments are welcome at your local U.S. Embassy (attention Public Diplomacy Section) or at the editorial offices:

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U.S. Department of State
Office of International Information Programs
May 2000

❑ MAXIMIZING INTERNATIONAL DIGITAL OPPORTUNITIES

By Alan Larson, U.S. Under Secretary of State for Economic, Business, and Agricultural Affairs

E-commerce and the Internet offer developing countries unprecedented opportunities in business, education, and health care, U.S. Under Secretary of State for Economic, Business, and Agricultural Affairs Alan Larson writes. The U.S. government has devised numerous programs to help developing countries take advantage of these opportunities, he adds.

Helen Mutono, a Ugandan woman, uses the Internet to sell her handmade African baskets; she spends the proceeds on helping children who have been orphaned by AIDS. In a letter to Vice President Al Gore, Ms. Mutono wrote, "For the grandmothers and aunts who are burdened with the responsibility of caring for these orphans, access to the Internet may be the only way of reaching the global market and making real income from their handicrafts."

It is clear that the Internet holds huge potential for developing countries to expand businesses, create jobs, improve social services, and bring diverse groups closer together. Participants in the global information economy are witnessing a huge increase in business-to-business and business-to-consumer applications that provide more choices and better information, and keep prices down and quality high. There are clearly even greater future benefits to be derived, both in the United States and especially in other countries. The Internet can help even small businesses find customers and partners all over the world and help the unemployed find jobs faster.

President Bill Clinton has said that the Internet "will do as much as anything else to reduce income inequality" between industrial and developing countries.

There are also numerous social benefits resulting from policies that foster participation in the new global information economy. The Internet helps link up communities of interest and makes available a vast array of information potentially useful to our citizens. Information technology can provide educational benefits through distance-learning projects and school-to-school partnerships. The Internet can help provide people in poor and remote areas with access to the same vast bodies of knowledge as people in the wealthiest places. Health care can benefit dramatically from transnational institutional linkages and by providing individuals with access to health information resources on a range of public health issues.

Information technology also has enormous potential in the preservation of cultural heritages and their global dissemination, for example through "virtual" art galleries and cyber-libraries containing oral histories and the sounds of traditional music. The Internet will also help foster the spread of democracy and respect for human rights and hinder corruption by providing the means for transparent governance and the free flow of ideas and information.

Unfortunately, however, the international "digital divide" between industrialized and developing countries is immense and growing. Half of the more than 300 million people accessing the Internet are in North America. Meanwhile, in the Middle East, slightly more than one million are online; in Africa, the number is about two million. Notably, there are reported to be more Internet users in New York City than on the continent of Africa.

Helping developing countries achieve greater prosperity and social development is more than an expression of U.S. altruism. Global integration enables problems such as disease, narcotics, crime, corruption, and environmental degradation to affect us no matter where on this planet they may occur. Yet global economic integration — the increased flow of people, goods, services, knowledge, and capital — is also a tool that allows us to more readily cooperate with and potentially help improve the lot of people all over the world.

UNLEASHING INFORMATION TECHNOLOGY POTENTIAL

The United States government recognizes the seriousness of a widening of the already yawning chasm between the world's richest and poorest countries. It also recognizes the special potential that information technology provides for helping to narrow that gap. In this light, the U.S. government has initiated a number of programs aimed at helping developing countries to take advantage of the opportunities provided by the global information economy. Following are just a few programs that the United States hopes will help the information revolution take root in developing countries:

In South Africa, the U.S. Agency for International Development (USAID) provides Internet equipment for an emergency medicine training partnership between Howard University in Washington, D.C., and the University of Transkei hospital. The partnership will increase emergency medical training and improve the quality of care of the Transkei hospital, which treats 45,000 trauma patients each year in its emergency rooms.

In Uganda, USAID, in collaboration with the World Bank, has begun to install computer labs, Internet access, and teacher training in dozens of schools and teacher training institutes that will reach more than 7,000 students a year. USAID also is providing computers, Internet connectivity, and training to link a Kampala-based organization of professional women with the Association of Women organization in northern Uganda to facilitate information sharing on health, business development, and education. The U.S. Federal Communications Commission (FCC) is running a separate information technology program with the Uganda Communication Commission.

In Bulgaria, the U.S. State Department's Global Technology Corps (GTC) sent a U.S. telecommunications expert to Sofia on a volunteer mission to advise the Bulgarian Internet Alliance for Economic Development, the main telecommunications policy-making body in Bulgaria. The volunteer subsequently accepted an invitation to join the alliance steering committee and continues to advise and assist it.

In Guatemala, the U.S. embassy is working to help establish an Internet-based marketing facility for an indigenous cooperative producing handicrafts. The Global Technology Corps has completed a business feasibility study. A final business plan is being drawn up.

In Jamaica, USAID is assisting the government in allowing the entry of two cellular companies to operate in Jamaica — providing competition for the current monopoly — which should bring down telecommunication costs in the country. USAID also will assist in redrafting Jamaica's Telecommunications Act, developing a new regulatory framework and management training.

In Egypt, the U.S. embassy is running workshops on processing online payments to help expand the use of e-commerce.

But individual programs alone are not enough to ignite technological change in the developing world. Governments in Latin America, Asia, Africa, the Near East, and elsewhere must, in most cases, undertake fundamental policy reforms, assisted when possible by international financial and development institutions, if they hope to take full advantage of the benefits of the global information economy.

PREREQUISITES FOR THE INFORMATION REVOLUTION

A developing country that wishes to fully share in the benefits of the global information economy must foster a policy and regulatory environment conducive to information technology development. That includes five key elements: (1) a liberalized, pro-competitive telecommunications policy and regulatory environment; (2) a physical infrastructure sufficient to exploit the power of Internet communications; (3) educated entrepreneurs, knowledge workers, and policy-makers; (4) Internet applications tailored to the needs and conditions of the developing world; and (5) liberalization of related sectors.

Our experience in recent years has taught us several important lessons about how to foster the development of the Internet and e-commerce. First, if a nation's telecommunications policy environment is favorable, the private sector will respond positively. In the United States and elsewhere, we have seen that a liberalized, pro-competitive policy regime is the key to attracting long-term private investments and spurring the development of affordable, cost-based telecommunications services. Second, targeted investments from the international community and key infrastructure projects can speed

development considerably. Such projects should address both technical (e.g., connectivity) and human (e.g., technical education) limitations in the developing world. Third, institutions and governments in developing nations will succeed only through strategic thinking aimed at charting a clear path and a plan for reaching well-defined goals.

Fourth, the enormous potential of the global information economy and electronic commerce will remain unfulfilled until governments remove often severe logistical barriers not only in the telecommunications sector but in the transportation, customs, and delivery service sectors as well. Telecommunications reforms make it cheaper to get online and stay online. But transportation regimes must be liberalized, through open skies agreements and other reforms, to make it easier and cheaper to ship goods ordered electronically from one country to another. Goods must flow quickly and predictably through the customs process. The efficient movement of goods through customs — at predictable tariff schedules — is critical to achieving cost-saving "just-in-time" deliveries of parts, components, and final products. Finally, delivery service regimes must be reformed to permit goods to quickly and inexpensively traverse the "final mile" between the port of entry and the customer's doorstep. A holistic approach that addresses all four sectors together will generate critical synergies and dramatically help to fully prepare a country to participate in the global information economy.

THE IED INITIATIVE

Reflecting the importance the U.S. government attaches to closing the international digital divide, President Clinton issued a directive in November 1998 requesting that the Secretary of State coordinate with other government agencies an initiative encouraging the Internet and e-commerce in developing countries. The Internet for Economic Development (IED) initiative, under the coordination of the State Department's Bureau of Economic and Business Affairs, seeks to empower developing countries to use the Internet to energize their economies, to gain access to knowledge that can improve standards of living, and to foster the free flow of ideas.

The Department of State, USAID, the Federal Communications Commission (FCC), the Commerce Department, and other agencies are working with host governments, multilateral organizations, and the private sector to implement specific projects that respond to participating countries' specific needs. The initiative initially involves 12 countries, which Vice President Gore announced in June 1999. These countries, which were chosen based on their commitment and ability to implement the four key elements identified above, are Guatemala, Haiti, Jamaica, Bulgaria, Egypt, Morocco, Ghana, Guinea, Uganda, South Africa, Mozambique, and India. Other developing countries have expressed a desire to join the initiative, and the Clinton administration hopes to be able to expand the program.

Within the State Department, the Office of International Information Programs established the Global Technology Corps in mid-1999 to set up public-private partnerships committed to closing the international digital divide. The GTC works with companies, individuals, and organizations that are willing to volunteer their time, expertise, and resources to help spread the benefits of information technology worldwide. GTC activities in IED countries have included volunteer support for a micro e-commerce project in Guatemala, and volunteer travel to Jamaica by the founder of a well-known e-commerce company for discussions of e-commerce trends with local officials and businessmen. In South Africa, GTC is planning a mid-2000 video-journalism seminar to introduce university students to the latest techniques for using digital video cameras, which produce television-quality video at a small fraction of traditional costs.

USAID has provided the vast majority of funds required to implement IED programs. USAID has approximately 90 missions, and virtually every one has a project that is using the Internet to achieve development objectives. Total fiscal year 1998-99 funding dedicated to IED was approximately $12 million; it should reach nearly $15 million for fiscal year 2000. Examples of specific IED country programs include a $1 million Rural Information Technology Expansion program in India; a $1 million information technology (IT) program in Bulgaria; a $2.2 million IT/economic growth program in Egypt; a telecommunications reform program in Jamaica; a computer-based teacher training program in Morocco; community-based telecenters in Guatemala; support for private Internet service providers in Haiti; a regional electronic commerce policy workshop in southern Africa; and an initiative in Jamaica to connect the country's hospitals to assist in sharing information, especially information related to infectious diseases.

USAID is also implementing the Leland Initiative, a $15 million, five-year program launched in 1996 in cooperation with the State Department to enhance Internet connectivity in 21 African countries. This program was named in honor of the late Mickey Leland, a U.S. congressman who worked to alleviate poverty in Africa. 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 six IED countries in Africa are also Leland countries. Examples of Leland/IED programs include Internet training for local officials in Ghana; extension of high-speed Internet access to secondary cities in Guinea and Mozambique; and (with the FCC) telecommunications regulatory cooperation with Uganda, Ghana, and South Africa.

The FCC is contributing to IED through Chairman William Kennard's Development Initiative. That effort, announced in June 1999, provides telecommunications policy and regulatory assistance to developing countries seeking to achieve and sustain their place in the global information society. The FCC is working with developing countries to build independent regulatory agencies equipped to facilitate universal service through competition, liberalization, privatization, and transparency — goals that are part of the World Trade Organization Basic Telecom Services Agreement. That agreement is a landmark because, for the first time, the international community agreed to liberalization principles that have led to vastly lower prices and improved services.

To date, efforts under the Kennard Development Initiative have focused on Africa and Latin America. Recognizing that demand for FCC information and guidance on telecom matters far outstrips resources, the FCC has published *Connecting the Globe: A Regulator's Guide to Building the Global Information Community,* a copy of which is available through the FCC's Internet site at http://www.fcc.gov. This manual highlights the major issues facing telecom regulators around the globe.

Commerce Department experts have taught e-commerce workshops in Africa and elsewhere. Commerce Department officials are active in international meetings and discussions of Internet governance issues. Commerce also has held telecommunications summits, including a Latin America Telecommunications Summit and a China-U.S. Telecommunications Summit. These policy conferences are designed to bring government and industry leaders together to discuss new technologies and pro-competitive policies that promote access to and the use of information technology.

Grants issued to U.S. recipients under the National Telecommunications and Information Administration's Technologies Opportunity Program (TOP) are being used to further efforts to close the international digital divide by providing models for similar programs overseas. For example, community networking, educational, and health and wellness programs can be linked to parallel efforts in institutions and communities overseas. TOP has already facilitated a joint project between one of its community network grantees and an international project in Mexico (funded by the World Bank).

THE FUTURE

The United States is committed to assisting developing countries to undertake the steps necessary for them to fully share in the benefits of the global information economy, and it seeks to partner in doing so with other governments and the private sector.

No single government, company, organization, or individual can effectively satisfy all of the developing world's needs for policy, regulatory, and technical assistance in the information technology field. Working together with international partners, however, we can make a major contribution to helping developing countries take the steps necessary for them to share in the benefits of the global information economy.

We look forward to working with international partners to help developing countries take full advantage of the tremendous opportunities afforded by information technology. ❑

❑ TOWARD A UNIFORM COMMERCIAL LEGAL FRAMEWORK FOR GLOBAL ELECTRONIC TRANSACTIONS

By Andrew J. Pincus, General Counsel, U.S. Department of Commerce

A viable framework for electronic commerce requires the elimination of paper-based barriers, such as "writings" and "originals," and the introduction of electronic means to enter into legally binding contracts, Andrew J. Pincus writes. The U.S. Commerce Department's general counsel presents four steps to lay a foundation for international e-commerce transactions.

President Bill Clinton and Vice President Al Gore, in issuing a *Framework for Global Electronic Commerce* in July 1997, noted that "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." As part of the Clinton administration's efforts on e-commerce issues, President Clinton directed Commerce Secretary William Daley 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."

The Framework identified several key principles to guide the drafting of applicable legal rules in this area:

- Parties should be free to order the contractual relationship between themselves as they see fit.

- Rules should be technology-neutral (i.e., they should neither require nor assume a particular technology) and forward looking (i.e., they 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.

- The process should involve the high-tech commercial sector as well as businesses that have not yet moved online.

Based on these key principles, and in light of extensive study and experience on these issues, the administration has identified four basic steps that every country can take to ensure that its commercial legal framework is ready for global electronic transactions. Most governments are interested in taking these steps because they facilitate the participation of domestic industries in cross-border electronic transactions. Moreover, the widespread adoption of these four basic elements into domestic law will help establish a uniform and global commercial legal framework that promotes electronic transactions.

STEP 1: ELIMINATE PAPER-BASED LEGAL BARRIERS TO ELECTRONIC TRANSACTIONS BY IMPLEMENTING RELEVANT PROVISIONS OF THE 1996 UNCITRAL MODEL LAW

In 1996, the United Nations Commission on International Trade Law (UNCITRAL) adopted a Model Law on Electronic Commerce. The Model Law reflects a broad international consensus that communication of legally significant data in electronic form is often hindered by legal obstacles to the use of such data or by uncertainty as to their legal effect or validity. For example, many legal systems have requirements for "writings," "originals," and other similar paper documentation. To the extent that these requirements cannot, or might not, be satisfied by electronic records and documentation, they are real obstacles to the growth of electronic transactions and are referred to as "paper-based legal barriers" to electronic commerce. The enabling provisions of the Model Law, especially Articles 5 through 11, contain guidance for revising these paper-based legal barriers to commercial electronic transactions.

In the United States, the legal rules governing contracts and commercial transactions have traditionally been established by the state governments, working through an organization of legal experts called the National Conference of Commissioners on Uniform State Laws (NCCUSL). In July 1999, NCCUSL approved the Uniform Electronic Transactions Act (UETA) and sent it to the state governments for adoption. This measure, the product of several years' consideration by NCCUSL,

builds on the international consensus established by the Model Law and contains specific provisions that the states can use to remove paper-based barriers to electronic transactions. UETA can serve as a strong model for any country seeking to implement the enabling provisions in the Model Law.

There are at least several noteworthy features of the UETA. First, it is a minimalist law that provides for the legal recognition of electronic records, electronic signatures, and other electronic documentation, but does not establish any benefits for certain kinds of technologies or methods. As a result of this and other factors, the UETA will likely remain a flexible, durable, and appropriate framework for electronic transactions for a significant period of time.

Also, because of public policy reasons, NCCUSL decided that the UETA should not apply to wills, trusts, and other similar documents. Further, NCCUSL included a provision in the UETA that encourages states to consider whether to exclude other laws that bear on important public policy issues, such as laws relating to real estate transactions, powers of attorney (including durable and health care powers of attorney), and certain consumer protection requirements. These provisions demonstrate that governments should revise paper-based barriers in a careful and deliberate manner, so as to avoid creating any unintended public policy and consumer protection problems.

Enactment of UETA by all 50 U.S. states will take several years under the most optimistic projections. In order to eliminate uncertainty about the legal status of electronic transactions during that period, the administration has supported federal legislation that would ensure the legal enforceability of contracts and signatures in electronic form. A similar measure passed by the House of Representatives contains, in addition, provisions permitting parties to a transaction to provide legally required notices and disclosures in electronic form and to satisfy record-keeping requirements with electronic records. The administration believes that it is important to revise laws requiring paper documents so that they do not prevent transactions from moving online, but that these revisions must ensure equivalent protection of the public interest in the online environment. The administration is working with Congress to craft legislation that meets that test.

STEP 2: REAFFIRM THE RIGHTS OF PARTIES TO DETERMINE APPROPRIATE TECHNOLOGICAL MEANS OF AUTHENTICATING THEIR TRANSACTIONS

The remaining three steps that a country can take to prepare its commercial legal framework for electronic transactions relate primarily to the issue of electronic authentication. Electronic authentication refers to the means by which a party to an electronic transaction can indicate his or her agreement to the terms of the contract, evidence his identity, and/or perform related functions.

There are a variety of electronic authentication techniques available and in use today. For example, a party could type his name at the end of an e-mail message containing the terms of the agreement. He could end a message with a previously agreed code word or with an electronic facsimile of his written signature created by his personal use of an electronic stylus. He might also "sign" the message using some digital signature technology or some biometric technology. These authentication models and methods are evolving rapidly, and further methods will doubtless be created.

Actual Business Practices: When electronic commerce was first beginning, some observers imagined a world in which everyone would have a unique digital identifier in a universally recognized format that would be used to authenticate his or her electronic transactions. Each person could surf the Internet and enter into transactions with anyone he encountered, confident that the other party's digital identifier provided a legally valid means of identifying that party in the event the transaction ended up in court. Although the future may see both the market and the infrastructure necessary for this kind of comprehensive, real-time authentication system, such a system does not exist now and will not likely be in operation very soon.

Instead, most electronic authentication today occurs in "closed systems." These are arrangements in which parties are already related to each other in some way, and they conduct electronic transactions under a mutually agreed authentication system. Sophisticated versions of this model are found in sectors ranging from manufacturing to banking and financial services, where commercial parties establish the technological approach they will rely on as well as their rules for operating, assigning risk, and settling disputes. In the manufacturing sector, for example, the three major U.S.

auto makers are developing a global system to tie product development to more than 15,000 suppliers operating around the world.

Two Different Legal Models: At least two different legal models regarding electronic authentication are developing internationally. The first, represented by the UETA and the UNCITRAL Model Law, eliminates barriers to electronic agreements and electronic signatures without granting special legal status to any particular type of authentication.

The second model involves a greater degree of government regulation. Under that model, a government creates a preference for one or more particular types of electronic authentication by establishing specific technical requirements for electronic signatures — often providing a legal presumption that electronic contracts signed using the stated methodology are binding. Our experience has been that it is unnecessary to enact these detailed laws, since most authentication is conducted in closed systems. Moreover, it can even be harmful to enact these laws if they create doubt as to the legal validity and acceptability of closed systems that operate using different technologies or methods.

The Critical Step — Recognize and Enforce Closed Systems: Given the dominance of closed systems in the global market today, a critical step governments should take at this time to unlock cross-border transactions is simply to ensure that their commercial legal frameworks will recognize and enforce closed systems. Countries that adopt minimalist laws similar to the UETA most likely will not need to adopt separate, additional provisions to accomplish this task. In contrast, countries that adopt detailed laws conferring legal benefits on certain methods should enact separate provisions that expressly recognize and enforce closed systems. Otherwise, those detailed laws might create doubt as to the validity of any closed systems that do not operate using the particular method established in the law.

STEP 3: ENSURE ANY PARTY THE OPPORTUNITY TO DEFEND AN AUTHENTICATION SYSTEM IN COURT

Many jurisdictions have rules governing the admission of evidence into court. These are often entirely separate sets of rules from those governing the formation and validity of contracts. It is important for countries to review these evidentiary rules to ensure that a party to a closed system has the opportunity to prove in court that his or her closed system actually created a legally binding agreement. Otherwise, even if the system is valid under general contract law, it might as a practical matter be ineffective since it could be "barred at the courthouse door."

STEP 4: TREAT TECHNOLOGIES AND PROVIDERS OF AUTHENTICATION SERVICES FROM OTHER COUNTRIES IN A NONDISCRIMINATORY MANNER

Most countries would agree that legal regimes governing electronic authentication should not discriminate against or among foreign authentication service providers. For countries that adopt a minimalist framework along the lines of the UETA and the Model Law, this likely will not be an issue. On the other hand, countries that adopt detailed laws need to be careful to avoid structuring legal regimes that favor domestic or certain foreign service suppliers. Among other things, such laws could have the unintended effect of preventing domestic users of authentication from participating fully in cross-border transactions.

INTERNATIONAL SUPPORT FOR THESE PRINCIPLES

The approach articulated in this article has been adopted and approved in a variety of multilateral and bilateral contexts. In October 1998, the ministers of the Organization for Economic Cooperation and Development approved a Declaration on Authentication for Electronic Commerce affirming these principles. Further, the Global Business Dialogue on Electronic Commerce (GBDe), a global private sector initiative, recently issued a recommendation to governments that strongly embraces this approach. In addition, the administration entered joint statements affirming these principles with several important trading partners, including France, Japan, Korea, Ireland, Australia, Chile, Egypt, and the United Kingdom.

The approach outlined in this article represents the best means forward for unlocking commercial legal barriers to global electronic transactions, and we look forward to continuing to work with all countries to develop and implement a uniform commercial legal framework that recognizes, facilitates, and enforces global electronic transactions. ❑

❑ FIGHTING INTERNET FRAUD: A GLOBAL EFFORT

By Jodie Bernstein, Director of the Bureau of Consumer Protection, U.S. Federal Trade Commission

Stopping cross-border Internet fraud requires international law enforcement officials to operate with unprecedented cooperation, Jodie Bernstein, director of the Federal Trade Commission's Bureau of Consumer Protection, writes. Web site monitoring by consumer groups enhances law enforcement capabilities, she says.

The increasing globalization of the electronic marketplace offers nearly unimaginable opportunities for businesses and consumers in terms of both access and choices. Yet it also presents more risks. The same qualities that make the Internet so attractive to legitimate businesses make it fertile ground for fraudsters targeting consumers from Joliet, Illinois, to Jaipur, India. It gives con artists the ability to appear suddenly, defraud consumers quickly, and disappear without revealing their true identity or location. Stopping them requires law enforcement officials to move just as quickly — and to operate in a culture of unprecedented cooperation.

The challenges for law enforcement officials are legion. For example, cross-border con artists can be difficult to track down and stop, and redress for consumers may be difficult to achieve. But several new initiatives are helping to establish the international cooperation necessary to take on Internet fraud — and ultimately, to ensure that consumers develop the confidence in the global electronic marketplace necessary for it to reach its true potential. The U.S. Federal Trade Commission's (FTC) leadership in law enforcement, the use of technology, and policy development should go a long way toward increasing consumer confidence in the online marketplace.

ENFORCING LAWS

The FTC acts against fraudulent and deceptive foreign e-businesses that harm U.S. consumers. The FTC Act gives the FTC authority over acts "in or affecting commerce" and defines "commerce" to include "commerce with foreign nations." The act also gives the FTC specific authority to investigate practices that "may affect the foreign trade of the United States." Exercising extraterritorial jurisdiction raises a host of challenges relating to locating defendants, letting them know the government has filed a lawsuit against them, looking for evidence, and enforcing judgments.

Law enforcement cooperation with our foreign counterparts is critically important to our efforts to address the challenges of cross-border Internet fraud. The FTC was a founding member — and is the president-elect — of the International Marketing Supervision Network (IMSN), an eight-year-old membership organization of the consumer protection and trade practices law enforcement authorities of more than two dozen countries including most of the Group of Eight (G-8) major industrial countries. To encourage cooperation and communication among international law enforcement agencies, the FTC developed www.imsnricc.org, a Web site that includes members' contact information, links to their Web sites, and a password-protected section with information about current cross-border consumer protection and law enforcement issues.

At the same time, the FTC is working with law enforcement officials around the world on specific enforcement actions. For example, in *FTC v. Carlos Pereira*, the commission obtained restraining orders against defendants in Australia and Portugal who had engaged in a massive Internet scheme to "pagejack" 25 million Web sites around the world and divert unsuspecting consumers from their intended Web searches and link them to pornographic Web sites. With the help of law enforcement colleagues in Australia who executed search warrants "down under," we were able to get a permanent injunction prohibiting the fraudulent practices and a revocation of the fraudsters' domain name registrations.

When scams are uncovered and law enforcement actions follow, the FTC seeks redress for all injured consumers, no matter where they live. To date, in over 100 Internet-related cases, the commission has obtained injunctions stopping illegal schemes, collected over $20 million in redress for victims, and frozen another $65 million in pending cases. Of these cases, five involved redress for foreign consumers. For example, in *FTC v. Fortuna Alliance*, the FTC recovered over $1.2 million on behalf

of 3,947 foreign consumers located in 70 countries from a company perpetrating a fraudulent Internet pyramid scheme. Indeed, our law enforcement actions have stopped consumer injury from Internet schemes with estimated annual sales of more than $250 million.

USING TECHNOLOGY

The same technology that Internet con artists use is proving invaluable to international law enforcers whose job is to track down fraudsters and stop their activities. The FTC has organized international "Surf Days" — events that enable law enforcement agencies and consumer groups to surf the Internet for a particular type of scam at a particular time — and then target their law enforcement efforts accordingly. Following the surfs, the FTC sends "warning e-mails" to the offenders letting them know that their sites may be violating the laws of the partner countries, and that law enforcement action may follow if their sites are not modified or taken down.

The FTC's most recent surf, GetRichQuick.con, brought together representatives of 150 organizations in 28 countries in the biggest international law enforcement effort to date to fight fraudulent Internet-based pyramid schemes, business opportunity and investment schemes, work-at-home scams, and deceptive day-trading promotions. The FTC recruited dozens of international organizations, including Forbrukerombudet (Norway Consumer Ombudsman), the Brazilian Institute of Consumer Defense, the Australian Competition and Consumer Commission, the Hong Kong Consumer Council, the Japanese Ministry of International Trade and Industry, and Consumers International, to participate with numerous U.S. federal agencies, 49 state and local consumer protection partners, and 39 different offices of the Better Business Bureaus in the surf. The result: fraud fighters from the United Kingdom to Uruguay and from Kansas to Korea uncovered some 1,600 separate sites making suspicious get-rich-quick claims, such as "earn $5,000 a week stuffing envelopes," "make $4,000 a day running your own mail-order business," and "guaranteed to make $200,000 a year operating a virtual mall."

Among the many details that made the GetRichQuick.con surf distinctive was the use of a password-protected Web site (in English and Spanish) for participating law enforcement and consumer protection officials that provided step-by-step instructions for surfing, descriptions of the targeted scams, suggested search engines and key words, and maps to show participating countries. A very efficient communications and organizational tool, the secure site allowed surfers to enter information about the suspicious get-rich-quick sites directly into a form on the Web site. The information was sent electronically to a database maintained and analyzed by staff at the FTC.

Each of the Web sites with dubious promotions received a warning e-mail signed by most of the surf partners, a clear signal to online scam artists that law enforcement and consumer protection organizations worldwide are cooperating across their borders to halt online fraud. About a month after the warning e-mails are sent, participants surf again to find out whether the sites in question have altered their claims to comply with the law, removed their claims, or taken down their sites entirely. For sites that are still not compliant, law enforcement officials will do the necessary investigative work to determine whether the sites are appropriate targets for law enforcement, within the United States or elsewhere.

Consumer Sentinel is yet another vehicle designed by the FTC to facilitate the detection and deterrence of online scams. The first, and now the biggest, binational database of consumer fraud complaints in North America, Consumer Sentinel gives more than 230 law enforcement agencies in the United States and Canada free access to the data through a secure, searchable Web site, in turn enabling coordinated and comprehensive action against the most prevalent frauds. Last year, the database received 18,600 complaints related to Internet fraud and deception, bringing the total number of consumer complaints about Internet and other types of fraud to some 250,000. The FTC provides this information to other countries on a case-by-case basis, and looks forward to developing additional information-sharing opportunities.

The GetRichQuick.con surf and Consumer Sentinel are among the technological tools that will support an ambitious law enforcement effort — scheduled for later this year and involving many states and several countries — that will bring coordinated actions against companies within their own jurisdictions.

DEVELOPING POLICY

The FTC also plays an active role in public policy discussions on international consumer protection principles for the global economy. FTC Commissioner Mozelle W. Thompson heads the U.S. delegation to the

Organization for Economic Cooperation and Development (OECD) Committee on Consumer Policy, which has developed international guidelines on consumer protection in e-commerce. These guidelines set out principles for voluntary codes of conduct for businesses involved in e-commerce, offer guidance to governments in evaluating their consumer protection laws regarding e-commerce, and give consumers advice about what to expect and look for when they shop online. Several private international organizations, including the Council of Better Business Bureaus and the International Chamber of Commerce, have adopted standards for consumer protection in electronic commerce that reflect the recommendations of the OECD guidelines.

The guidelines also promote the idea of international law enforcement cooperation. The goal of the guidelines? To build consumer confidence in the global marketplace by working to ensure that consumers are just as safe when shopping online as when shopping offline — no matter where they live or where the company they do business with is based. The number of consumers making purchases online — and the amount they are spending — is soaring; some 40 percent of Internet users — about 120 million people worldwide — have made at least one purchase online. Last year, American holiday shoppers spent an estimated $7,000 million shopping on the Internet, more than twice the amount they spent online during the 1998 holiday shopping season. And some observers predict that annual consumer sales on the Internet will skyrocket from $15,000 million in 1999 to $78,000 million in 2003.

In addition, the commission participates in a broad range of international forums examining consumer protection in e-commerce, including the Transatlantic Business Dialogue, the Transatlantic Consumer Dialogue, the Global Business Dialogue on e-Commerce, the Free Trade Area of the Americas, and the Asia-Pacific Economic Cooperation forum. Through these organizations, among others, the FTC nurtures still more international private and public sector cooperation in combating online fraud, educating consumers, and encouraging self-regulatory consumer protection guidelines. The FTC also participates in formulating the U.S. approach to ongoing negotiations at The Hague Conference on Private International Law toward a convention on international recognition and enforcement of judgments, focusing on the treatment of consumer disputes and consumer protection enforcement actions.

Finally, the commission has held workshops on international policy issues affecting consumer protection online. Last summer, for example, more than 100 participants attended a commission-sponsored workshop to further the dialogue prompted by the OECD guidelines, exploring questions of jurisdiction, conflicts of laws, and the roles of the private sector and international organizations in protecting consumers and fighting cross-border fraud. The Department of Commerce will join the commission in hosting another workshop on June 6 and 7 to discuss the availability of alternative dispute resolution as a way to obtain consumer redress for problematic online transactions.

The dizzying speed at which consumers are embracing new technology — and the staggering rate of change in the technology itself — certainly make the case for continuing the coordinated, cooperative international strategy for consumer protection online. The initiatives already under way to help ensure the safety of e-commerce and the protection of online consumers have set a new standard for public/private cooperation on a global scale and have laid the foundation for even greater consumer confidence in the global economy. ❑

❑ NEW GLOBAL RULES FOR E-COMMERCE: MOVING THE DIALOGUE BEYOND THE G-8

By Carol Charles, Deputy Director, Global Information Infrastructure Commission (GIIC)

In order for electronic commerce to succeed on an international scale, a global framework that provides for privacy, cross-border dispute resolution, and recognition of electronic contracts needs to be developed, says Carol Charles, deputy director of the GIIC. She adds that the leaders of the G-8 industrial countries can play a key role in the creation of this framework.

When the leaders of the Group of Eight (G-8) industrial countries convene their annual summit this July in Okinawa, Japan, they will be deliberating issues in an economy shaped by the rapid expansion of global electronic commerce. The value of worldwide business-to-business electronic commerce is projected to leap to $7,300,000 million in the year 2004, or about 7 percent of total global sales transactions, up from $145,000 million in 1999, according to a recent report by the Gartner Group, a worldwide business and technology research organization.

Global electronic commerce has led to profound changes in the way business is conducted. Networked organizations and decentralized corporate processes have changed relationships between the producers and users of goods and services, and spurred the rapid integration of global markets. Information and communication technologies and new developments such as online business-to-business exchanges and virtual trading networks have transformed traditional business practices by connecting critical business systems directly to key constituents like customers, employees, suppliers, and distributors via the Internet. Examples are the united online marketplace for auto parts recently set up by General Motors Corporation, Ford Motor Company, and Daimler Chrysler, and the online buying alliance between International Business Machines Corporation, Ariba, and software developer, i2 Technologies Inc. These exchanges have reshaped the world of business and trade transactions. The private sector has been the driving force behind this phenomenon. A report issued by Forrester Research, a leading Internet research firm found that of the 80 U.S. firms they surveyed, 93 percent plan to buy and sell on the Internet in 2002.

The paradox remains, however, that while networked technologies are a great leveler of economic and social structures, they also have the potential to exacerbate the "digital divide" — the gap between the level of e-commerce development in industrial countries and that in countries and organizations standing on the sidelines of the global e-commerce revolution. Internet-based business-to-business electronic commerce creates new market structures that enable business partners to switch allegiances at low cost, since the Internet expands choices and options to suppliers and consumers on an exponential basis. In addition, it enables contracting parties to exchange information, best practices, and market feedback in real time. Countries left out of the loop could experience the costs of severe economic isolation in this highly competitive environment. Recent findings by Computer Economics, an e-business adviser to corporations, suggest that while e-commerce will continue to boom in the next decade, Africa, South America, and parts of Asia could be left out of the trade revolution. According to Computer Economics, just 6 percent of e-commerce will be transacted in these regions this year, and this figure will rise by only 1 percent by 2003.

There is a very real possibility that developing countries may be constantly playing catch-up with the technologies and policy principles that have been formulated in the developed world. Also, the digital divide is hampering the ability of developing economies to be part of the ongoing process in developed economies of assessing and possibly re-defining the existing rules for global electronic commerce. One of the key functions of the Global Information Infrastructure Commission (GIIC), an independent, non-governmental initiative launched during the G-7 summit meeting at Brussels in 1995, has been to ensure that developing countries are constantly engaged in this dialogue. Through its global network of private and public sector commissioners who represent

both developed and developing countries, the GIIC has worked with national governments, industry groups, and international organizations to advance the dialogue on the rules needed for the global information economy, as well as to create awareness and build constituencies for change.

NEW REVOLUTION, NEW RULES

In its work over the past five years, several factors have led the GIIC to conclude that the global networked economy needs increasingly flexible legislative solutions to the challenges posed by rapid technological change. These solutions must be formulated on the basis of international dialogue among various stakeholders in the information revolution, including the private sector, national governments, international organizations, and consumer groups. These factors are:

• **Legal and Regulatory Frameworks in Constant Flux:** The technological convergence of telecommunications and computers has revolutionized the way in which society produces, stores, and uses information. Meanwhile, the rapid growth of networks across national boundaries has blurred the lines between providers, suppliers, and originators of information. These developments have called into question how regulatory systems can ensure trust, confidence, and consumer protection within a rapidly globalizing technological environment. For example, on-line issues related to digital copying and Internet domain names are raising critical issues about the ownership of copyrights and patents — and are creating brief and sometimes fluctuating values for intellectual property rights, privacy, and security, as information is digitally transformed and moves through its various iterations. The continued education of government regulators and consumers, as well as the development of technology-neutral self-regulatory schemes in partnership with the private sector, is essential to spur institutional adaptation and quick response to new technologies and applications.

• **New Definitions of Individual Rights:** In this new networked economy, businesses can employ data integration technologies such as customer profiling to understand customer needs, provide support over the Internet, and integrate these customer demands within their supply chain. The use of these technologies is leading to increased awareness of what consumers perceive as potential violations of their rights as individuals, such as the misuse or usurpation of personal data, inaccurate and incomplete information, and payment fraud.

By the same token, the networked economy has put information and power back into the hands of the individual, with user communities being redefined in accordance with common interests rather than by geographical or physical proximity. In the electronic age, the buyer has access to information — and is thus empowered to change loyalty in an instant. So if businesses in the electronic age are to maintain customer loyalty and be competitive, they have to improve the service and value they bring to their customers.

Businesses recognize that it is in their best interests to protect the privacy of their customers and to build trust and confidence that personal data are accurate and will not be misused. As a result, businesses are collaborating to develop self-regulatory codes of conduct, trustmarks, and seals to ensure flexible yet enforceable trust systems that are awarded to online retailers who comply with a high and independently verifiable standard for electronic commerce. These seals cover every aspect of their operations, from their trading status to their privacy and security policy, customer service and support policy, information integrity, and warranty information. In its work in both developing and developed countries, the GIIC has observed that many countries do not have laws or cultural morés that support the preservation of personal privacy. We do not want to see the lack of a globally recognized framework for privacy protection lead to the establishment of data havens in which personal information is illegally traded or abused.

• **Challenges to Jurisdiction in Cyberspace:** As transactions become more global, the control of government institutions over economic or other activity occurring in cyberspace is increasingly eroded. Jurisdiction and rules of origin are the two key factors impacting cross-border e-commerce, requiring that national and international frameworks be harmonized to enable dispute resolution and redress. Currently, issues relating to taxation, intellectual property, and consumer protection all depend on the rules of origin or country of consumption. However, as transactions move online and become increasingly global, both business and consumers are becoming wary of the costs they may incur if they need to engage in cross-border litigation of their rights. By using Alternate Dispute Resolution (ADR), consumers and merchants can settle their disputes through a trusted third party in a low-cost and speedy way. There are

several examples of ADR, such as BBBOnLine, part of the Council of Better Business Bureaus in the United States, and Cybertribunal in Canada. Other organizations involved in international dispute settlement for electronic commerce are the ICC International Court of Arbitration of the International Chamber of Commerce (ICC) and the World Intellectual Property Organization's Internet-based WIPO-Net, which has been set up to arbitrate IP-related electronic commerce issues. However, to give businesses and consumers in global electronic commerce additional certainty, together with robust, reliable electronic commerce transactions, such certification efforts need to be extended to other countries and jurisdictions.

• **Authentication and Security:** Authentication and security are critical for assuring people that they are transacting electronic commerce in an environment free from illegal attack or trespass. Strong, market-led encryption technologies are essential, as well as minimum necessary legal frameworks to authenticate electronic signatures. In addition, a legal framework must be in place to punish the dishonest. Since the private sector is leading in the area of encryption, there needs to be a partnership between the private sector and governments to create the frameworks necessary to ensure the trust and authentication needed to stem criminal activity. Since users tend to distrust government controls on encryption, governments should commit to removing all controls on cryptographic technologies and applications and should cooperate with businesses to facilitate the internationally secure exchange of information.

• **Universal Commercial Codes:** Legal codes specifying commercial, contractual, and liability issues are the underpinnings of electronic commerce and are essential to building consumer confidence. As global electronic commerce expands, businesses are looking to a permanent framework for electronic commerce transactions that is also guaranteed and recognized by national governments. The 1996 Model Law of the United Nations Commission on International Trade Law (UNCITRAL) provides national legislators a technology-neutral framework of internationally acceptable rules to remove legal obstacles to e-commerce and creates a more secure legal electronic environment. The Model Law has been the basis for the development of e-commerce laws in Singapore, Korea, and Colombia, and has spurred the discussion of similar initiatives in Australia, Canada, Chile, France, Hong Kong, India, Slovenia, Brazil, Mexico, Morocco, New Zealand, Peru, the Philippines, Thailand, and Tunisia. However, in spite of this activity, most countries have been slow to convert what has been the norm for commerce between parties for several centuries — the exchange of paper documents — into the electronic environment. Increased education and the involvement of the legal community within countries or trading blocs or regions such as Asia-Pacific Economic Cooperation and the Free Trade Area of the Americas are critical to the rapid expansion of global electronic commerce and the involvement of additional countries.

The GIIC has been spurring the dialogue about removing barriers to electronic commerce in many countries around the world, including India, China, the Philippines, and Venezuela, as well as many countries in Africa. In addition, the GIIC has worked in partnership with the Alliance of Global Business (AGB), a coalition of businesses in 140 countries, to urge governments to rely on business self-regulation and the voluntary use of empowering technologies to create trust across the spectrum of users and providers for e-commerce goods and services. Some initiatives include the AGB's 1999 Global Action Plan for Electronic Commerce, the Fact Sheet on the Duty-Free Treatment of Electronic Transmissions, and the Discussion Paper on Trade-Related Aspects of Electronic Commerce (see www.giic.org/focus/ecommerce).

A Call to G-8 Leaders

Most countries of the world — including the developed ones — are still only learning how various information technology innovations will affect the economy and labor markets. For developing countries, this process is far more profound, as governments and private sector groups endeavor to restructure their economies for the global digital economy.

The G-8 representatives at the Okinawa summit have a unique and unprecedented opportunity to facilitate international cooperation for a secure global environment and a new international approach to building a global information economy in which every nation and every individual has a chance to participate.

Any global approach or framework needs to be flexible enough to support the growth of the information economy, encourage trade and investment flows, create jobs, and provide consumers with the benefits of competition, while encouraging a stable, secure environment for electronic transactions. Partnership with

the private sector and international organizations such as World Intellectual Property Organization, the World Trade Organization, the Organization for Economic Cooperation and Development, and UNCITRAL is essential in creating cooperative systems to:

- Exchange information about best practices.
- Increase consumer satisfaction and confidence in doing business on the Internet.
- Establish merchant credibility and trustworthiness.
- Support and enhance the self-regulation of Internet commerce.
- Encourage the development of guidelines and symbols to support electronic commerce.

Finally, G-8 leaders need to extend these endeavors to provide technical and financial assistance to those nations on the sidelines of the global electronic commerce revolution and also to bring consumers and small and medium-sized enterprises into the dialogue. The inclusion of these actors can only serve to create a robust, secure, global information infrastructure, expand global trade and economic growth, and, most significantly, minimize the threat of an ever-widening digital divide. ❑

Note: The opinions expressed in this article do not necessarily reflect the views or policies of the U.S. government.

The Global Information Infrastructure Commission (GIIC) is a global forum of private sector and government leaders from the information and telecommunications industries who address policy decisions impacting the growth of the world's information networks. The work of the GIIC focuses on three main areas: global information infrastructure development, global electronic commerce, and education in the information age. The GIIC's regional co-chairs are H. Brian Thompson (vice chairman and CEO, Global Telesystems), Volker Jung (executive vice president, member of the managing board, Siemens AG), and Michio Naruto (special representative and board member, Fujitsu Limited). W. Bowman Cutter (managing director of E.M. Warburg Pincus) acts as the GIIC managing director. The GIIC is a project at the Center for Strategic and International Studies (CSIS) in Washington, D.C.

❑ THE VULNERABILITY OF THE INTERNET

By Stephen E. Cross, Director of the Software Engineering Institute

The Internet is a virtual breeding ground for attackers who exploit the "unwarranted trust" users place in the networks, says Stephen Cross, head of the Software Engineering Institute. He adds that the duplication of software programs allows technologically unsophisticated people to mount devastating cyberattacks.

Vulnerabilities associated with the Internet put government, the military, commerce, and individual users at risk. The Internet is a complex, dynamic world of interconnected networks with no clear boundaries and no central control. Because the Internet was not originally designed with security in mind, it is difficult to ensure the integrity, availability, and privacy of information.

This is important because use of the Internet is replacing other forms of electronic communication, and the Internet itself is growing at an amazing rate. Concurrent with the growth of the Internet, intruder tools are becoming increasingly sophisticated and increasingly easy to use and widely available. For the first time, intruders are developing techniques to harness the power of hundreds of thousands of vulnerable systems on the Internet.

The Computer Emergency Response Team/Coordination Center (CERT/CC), set up under the auspices of the Software Engineering Institute to respond to computer security events, handles reports of breaches at e-commerce sites daily. Here are just a few examples of security breaches that have been reported in the press.

• An attacker obtained 100,000 credit card numbers from the records of a dozen retailers selling their products through Web sites. The credit cards had limits between $2,000 and $25,000, putting the potential cost of theft at $1,000 million. The attacker was caught when he tried to sell the card numbers to an apparent organized-crime ring that turned out to be the Federal Bureau of Investigation.

• Intruders gained unauthorized access to proprietary information on the computer network of a major U.S. corporation. The company was not able to identify the techniques used by the intruders. The company shut down its Internet connection for 72 hours as a precaution, denying access to legitimate users and cutting customers off from information that the company normally makes available through the Internet.

• In a case of cyber-extortion, an intruder stole 300,000 credit card numbers from an online music retailer. The intruder, who described himself as a 19-year-old from Russia, sent an e-mail to the *New York Times* bragging he had accessed the company's financial data through a flaw in its software. The intruder later used the card numbers in an attempt to blackmail the retailer into paying $100,000 in exchange for destroying the sensitive files. When the company refused to comply, the intruder released thousands of the credit card numbers onto the Internet in what turned out to be a public relations disaster for the company. Security experts still do not know how the site was compromised or the full extent of how the break-in affected the site's customers. Credit card companies responded by canceling and replacing the stolen card numbers and notifying affected cardholders by e-mail. E-commerce analysts say many similar attacks go unreported.

• In March 2000, in the most serious systematic breach of security ever for British companies, a group of intruders based in the United Kingdom broke into the computer systems of at least 12 multinational companies and stole confidential files. The group issued ransom demands of up to £10 million in exchange for the return of the files. Scotland Yard and the FBI are investigating the break-ins and are scrutinizing e-mail traffic between England and Scotland. They believe the group is highly professional and may be working for information brokers specializing in corporate espionage.

It is obvious from these examples and the ongoing activity of the CERT/CC that there is much work to be done to secure our electronic networks adequately to meet the needs of the expanding e-commerce marketplace. However, measures can be taken to reduce the risk of security breaches that can be so devastating to businesses seeking to establish a foothold in the electronic marketplace.

ATTRACTIVENESS OF THE INTERNET TO ATTACKERS

Compared with other critical infrastructures, the Internet seems to be a virtual breeding ground for attackers. Although some attacks seem playful (for example, students experimenting with the capability of the network) and some are clearly malicious, all have the potential of doing damage by denying the ability to transact business on the Internet. Attacks enable intruders to gain privileged access to a system so that it effectively belongs to them. With their unauthorized privileges, they can, for example, use the system as a launch platform for attacks on other sites or as one node in an attack using distributed-system intruder tools, which allow intruders to involve a large number of sites simultaneously, focusing all of them to attack one or more victim hosts or networks. Still other attacks are designed to reveal sensitive information, such as passwords or trade secrets. Examples of specific attack strategies can be found in CERT advisories, published online by the CERT/CC at http://www.cert.org/. Unfortunately, Internet attacks in general, and in particular denial-of-service attacks – attacks that prevent legitimate users of a service from using it – remain easy to accomplish, hard to trace, and of low risk to the attacker.

Internet attacks are easy because Internet users place unwarranted trust in the network. It is common for sites to be unaware of the amount of trust they actually place in the infrastructure of the Internet and its protocols. Unfortunately, the Internet was originally designed for robustness from attacks or events that were external to the Internet infrastructure – that is, physical attacks against the underlying physical wires and computers that make up the system. The Internet was not designed to withstand internal attacks – attacks by people who are part of the network. And now that the Internet has grown to encompass so many sites, millions of users are effectively inside.

Internet attacks are easy in other ways. It is true that some attacks require technical knowledge – the equivalent to that of a college graduate who majored in computer science – but many successful attacks are carried out by technically unsophisticated intruders. Technically competent intruders duplicate, share, and package their programs and information into user-friendly form at little cost, thus enabling naive intruders to do the same damage as the experts.

THE DIFFICULTY OF TRACING INTERNET ATTACKS

Through the use of a technique known as "IP spoofing," attackers can lie about their identity and location on the network. Information on the Internet is transmitted in packets, each containing information about the origin and destination. A packet can be compared to a postcard – senders provide their return address, but they can lie about it. Most of the Internet is designed merely to forward packets one step closer to their destination, with no attempt to make a record of their source. There is not even a "postmark" to indicate generally where a packet originated. It requires close cooperation among sites and up-to-date equipment to trace malicious packets during an attack.

Moreover, the Internet is designed to allow packets to flow easily across geographical, administrative, and political boundaries. Consequently, cooperation in tracing a single attack may involve multiple organizations and jurisdictions, most of which are not directly affected by the attack and may have little incentive to invest time and resources in the effort. The attacker enjoys the added safety of the need for international cooperation in order to trace the attack, compounded by impediments to legal investigations.

Because attacks against the Internet typically do not require the attacker to be physically present at the site of the attack, the risk of being identified is reduced. In addition, it is not always clear when certain events should be cause for alarm. For example, what appear to be probes and unsuccessful attacks may actually be the legitimate activity of network managers checking the security of their systems. Even in cases where organizations monitor their systems for illegitimate activity, which occurs in only a small minority of Internet-connected sites, real break-ins often go undetected because it is difficult to identify illegitimate activity. Furthermore, because intruders cross multiple geographical and legal domains, an additional cloud is thrown over the legal issues involved in pursuing and prosecuting them.

IMPACT OF SECURITY BREACHES

As illustrated by the examples cited at the beginning of this article, security breaches can cause a loss of time and resources as personnel investigate the compromise, determine potential damage, and restore the systems.

The systems may provide reduced service or be unavailable for a period of time. Sensitive information can be exposed or altered, and public confidence can be lost. After a successful computer system intrusion, it can be very difficult or impossible to determine precisely what subtle damage, if any, was left by the intruder. Loss of confidence can result even if an intruder leaves no damage because the site cannot prove none was left.

Particularly serious for business are denial-of-service attacks and the exposure of sensitive information. The goal of denial-of-service attacks is not to gain unauthorized access to machines or data, but to prevent legitimate users of a service from using it. A denial-of-service attack can come in many forms. Attackers may "flood" a network with large volumes of data or deliberately consume a scarce or limited resource. They may also disrupt physical components of the network or manipulate data in transit, including encrypted data. Once an overt denial-of-service attack has been resolved and the service returned, users generally regain trust in the service they receive. But exposure of sensitive information makes an organization highly susceptible to a loss-of-confidence crisis.

RECOMMENDED SOLUTIONS

The problem is serious and complex, and a combination of approaches must be used to reduce the risks associated with the ever-increasing dependence on the Internet and the possibility of a sustained attack on it. Effective solutions require multidisciplinary cooperation that includes information sharing and joint development of comprehensive solutions, as well as support for a long-term research agenda.

• **Collect, Analyze and Disseminate Data on Information Assurance:** The nature of threats to the Internet is changing rapidly and will continue to do so for the foreseeable future. The combination of rapidly changing technology, rapidly expanding use, and the continuously new and often unimagined uses of the Internet creates a volatile situation in which the nature of threats and vulnerabilities is difficult to assess and even more difficult to predict.

To help ensure the survivability of the Internet, and the information infrastructure as a whole, it is essential that law enforcement organizations and incident response teams continuously monitor cyber security threats and vulnerabilities and identify trends in intrusion activity, and make this information widely available throughout the Internet community.

• **Support the Growth and Use of Global Detection Mechanisms:** One way to gain a global view of threats is to use the experience and expertise of incident response teams to identify new threats and vulnerabilities. The CERT/CC, for example, provides assistance to computer system administrators in the Internet community who report security problems. When a security breach occurs, staff members help the administrators of the affected sites to identify and correct the vulnerabilities that allowed the incident to occur; work with vendors to inform them of security deficiencies in their products, help them to develop workarounds and repairs for security vulnerabilities, and facilitate and track their responses to these problems; and coordinate the response with other sites affected by the same incident.

Because major reporting centers for computer security information, such as the CERT/CC, gather large amounts of data, they can identify trends and coordinate the development of solutions to newly developing problems.

Internet service providers, too, should develop security incident response teams and other security improvement services for their customers. Many network service providers are well positioned to offer security services to their clients. These services should include helping clients install and operate secure network connections as well as mechanisms to rapidly disseminate vulnerability information and corrections.

• **Support Education and Training to Raise the Level of Security:** Most users of the Internet have no more understanding of the technology than they do of the engineering behind other infrastructures. Similarly, many system administrators lack adequate knowledge about the network and about security, even while the Internet is becoming increasingly complex and dynamic. To encourage "safe computing," governments should fund the development of educational material and programs about cyberspace for all users, both adults and children, and invest in awareness campaigns that stress the need for security training for system administrators, network managers, and chief information officers.

• **Support Research and Development:** It is critical to maintain a long-term view and invest in research toward systems and operational techniques that yield networks

capable of surviving attacks while protecting sensitive data. In doing so, it is essential to seek new, fundamental technological solutions and to seek proactive, preventive approaches, not just reactive, curative approaches.

CONCLUSION

The Internet has proven to be an engine that is driving a revolution in the way business is conducted. Because of the tremendous interconnectedness and interdependence among computer systems on the Internet, the security of each system on the Internet depends on the security of all other systems on the network. Cyber security efforts must focus on reporting and monitoring threats and vulnerabilities, education and training, and research and development. ❑

Note: The opinions expressed in this article do not necessarily reflect the views or policies of the U.S. government.

The Software Engineering Institute (SEI), a federally funded research and development center at Carnegie Mellon University sponsored by the U.S. Department of Defense, is the home of the CERT(r) Coordination Center (CERT/CC; URL: http://www.cert.org). Since it was established in 1988, the CERT/CC has worked with the Internet community to respond to computer security events, raise awareness of computer security issues, provide training, and conduct research into technical approaches for identifying and preventing security breaches. CERT and CERT Coordination Center are registered in the U.S. Patent and Trademark Office.

❑ INTERNET DEVELOPMENT IN POLAND

By Warren Clark, Consultant, Former Senior Advisor for Communications and Information Policy, U.S. State Department

The high cost of Internet access is arguably the biggest barrier to the development of e-commerce in Poland, Warren Clark writes. Privatization of Poland's telecommunications system would introduce competition and lower the cost of using the Internet, he adds.

The Internet in Poland is well developed in the business sector and is beginning to penetrate the consumer and household sector. The low level of Internet use by households, typical of e-commerce development in much of Central and Eastern Europe and in other emerging economies, is due partly to the poor quality of existing fixed-line telephone networks and the high costs of accessing the Internet. However, the business community and the government are committed to removing the bottlenecks to further growth of e-commerce.

Certain market structure and cultural barriers to consumer development of the Internet still exist. In Warsaw, one does not see the Internet cafes or price competition for telephone access that can be seen in European cities such as London, where telecommunications has been liberalized. Many people in Poland lack confidence that credit card information can be protected on the Internet. As yet there is no high-speed Internet access, such as digital subscriber lines for consumers. And at a cost of $500 to $1,000, computers are still expensive for many individual households.

While government has been slow to develop and articulate explicit information society policies, Poland has a strong entrepreneurial spirit, and business has been quick to take up the Internet. More active government policies are under consideration, and rapid growth of the Internet, e-commerce, and e-government can be expected in the next few years.

INTERNET USAGE

While Internet development is still getting under way in Poland, it is growing rapidly. Industry sources estimate that there were 1.5 million Internet users in Poland in 1999 – including 4.1 percent of all households – out of Poland's 38 million population. By the end of 2000, about 7 percent of Poland's households will own computers, and 5 percent will have access to the Internet. These sources anticipate that there will be 4 million Internet users by 2003.

These are low numbers for Internet usage. Consumer sales over the Internet are still small – $3.2 million, or about $2 per Internet user last year. In contrast, last year 10 percent of households in the United Kingdom and 17 percent of households in the United States made purchases over the Internet.

The picture for business usage in Poland is quite different. There are 10,000 commercial Web sites, and 80 percent of businesses in Poland use the Internet on a daily basis. Fifty-seven percent of companies have their own Web sites, and 320 companies are selling through the Internet. Companies such as Microsoft, IBM, Intel, and Cisco conduct nearly all of their large and fast-growing businesses over the Internet.

Use of the Internet by different levels of government also is growing, although the information available to users is sometimes limited. Municipal government Web sites often show documents used for municipal government and samples of standard letters to request services. There are sometimes opportunities for Internet users to give "feedback" to the government through comments on pending budget and planning decisions.

Central government ministries post addresses, biographies, current policy statements, and electronic versions of basic documents. In an unprecedented action, Poland's Ministry of Posts and Telecommunications last year posted a draft law on telecommunications, in Polish and English, and requested comments. The draft law was subsequently revised in light of the comments before being submitted to the parliament. Parliament often posts draft laws and new legislation on its Web site (www.sejm.gov.pl), sometimes in both Polish and English.

ENCOURAGING INTERNET DEVELOPMENT

A number of actions under way or under consideration

by the private sector and government would encourage Internet development in Poland.

• **Access Pricing and Telecom Liberalization:** As noted above, one factor that holds back Internet usage is high access pricing. According to the Polish press, Poland has the second highest Internet access pricing in the world, after Japan. TPSA, Poland's dominant, government-controlled telephone operator, charges per minute for connection to an Internet service provider at the same rate as for a local phone call. This makes long sessions of browsing the Web expensive. The single greatest factor in lowering the costs of Internet access prices would be deregulating telecommunications, which likely would introduce greater competition into domestic phone service and, in turn, increase total investment in facilities and lower prices for consumers. Some liberalization has taken place or is under way. However, implementation of legislation promoting further liberalization of domestic phone service is scheduled to be delayed until the end of 2001 to enhance the equity position of TPSA, which is being sold to a strategic investor.

• **Education and Training:** Poland currently has a modest shortage of trained professional network technicians, and this shortfall is expected to increase. At present, the supply of engineers skilled in the administration of Internet protocol networks is estimated by industry sources at 18 percent below the demand — a somewhat narrower gap than in most EU countries. But this shortfall is expected to grow to 40 percent by the end of 2003 — the highest in Europe — owing mostly to expected rapid Internet development in Poland. To meet this challenge, private sector firms are running training programs and partnering with technical universities to put in place courses and laboratory equipment that will rapidly increase the supply of network engineers. Cisco Systems, for example, is discussing such partnerships with five technical universities.

• **Internet in Schools:** With both public and private support, Poland has taken steps to provide Internet access for all universities and schools. Private donations through institutions such as the Soros Foundation, coupled with substantial government spending, have given Internet access to all high schools in Poland, and intermediate-level schools are expected to have access by the end of this year. One limitation on Internet usage in schools, apart from high access fees, is a shortage of professional information technology training for teachers and others.

• **New Laws and Regulations:** Poland's Parliament, professional groups such as the Polish Bankers Association, and others are considering what new laws and regulations may be required to encourage Internet development and usage in Poland. Their activities include developing legal procedures for digital signature and digital documents. Digital signature is a system whereby users would have a digital identification code that could be verified by a third party in a transaction. Digital documents, properly verified, could have the legal force of signed original documents. Other laws governing electronic fraud and other criminal conduct need to be created or reinforced.

• **e-government:** In addition to continuing to expand the ways the public can be kept informed, the government could consider a variety of other measures to lower its costs and encourage economic growth through greater Internet use, including electronic payment of taxes and government procurement.

While Poland's business people have been quick to embrace the Internet because of its clear ability to increase productivity and facilitate economies of scale, the government has been slow to move on "information society" issues such as fostering economic growth, and on social and political objectives such as improving access to many kinds of information by citizens and groups. With all governments under budget pressures, there is a need for greater public and private sector cooperation in achieving information society goals.

With such cooperation in mind, a ministerial-level meeting on the Information Society of EU candidate countries took place in Warsaw in May. The Polish Agency for Foreign Investment (PAIZ) is planning a conference later this year on information infrastructure as a catalyst for new investment. In addition, legislation for e-commerce might be enacted before the end of the year. That should give e-commerce entrepreneurs the type of support they need to expand their operations and provide a significant boost to the Polish economy. ❑

Note: The opinions expressed in this article do not necessarily reflect the views or policies of the U.S. government

Comments on this article are welcome. Warren Clark can be reached at warclark@erols.com.

❑ CASE STUDY: AMAZON.COM
HELPING E-COMMERCE SITES ACHIEVE INTERNATIONAL SUCCESS

By Diego Piacentini, Senior Vice President and General Manager of Amazon.com

"In its first month of operation after opening its doors in July 1995, Amazon.com sold to customers in 45 countries," writes Diego Piacentini, senior vice president and general manager of Amazon.com, the world's largest online retailer. "Today, we sell in more than 150 countries." Adherence to local laws, establishing strategic in-country presences, and providing impeccable customer service are the keys to Amazon.com's international expansion, says Piacentini. The following article is a case study of one company's efforts to make e-commerce work across borders.

E-commerce in the United States has evolved faster than anyone expected, quickly moving from a questionable "Will it survive?" mode into a powerhouse "Can't do without it" position in the American economy. Now, e-commerce is poised to take on the rest of the world in a similar fashion, and companies with an established online presence — as well as newcomers to the e-commerce arena — are looking for advice on conquering the international frontier.

The key to achieving international e-commerce success lies in understanding one simple fact: customers everywhere want better selection, more convenience, and better service. After recognizing this fact, online retailers will soon understand that the major challenge to international expansion is the ability to bring these universal benefits to customers around the world while honoring local customs.

Amazon.com has followed these principles to actively build our online retailing business in Europe, focusing primarily on our Books, Music, and DVD & Video stores. In 1998, Amazon.com launched a site in Germany, Amazon.de, and a United Kingdom site, Amazon.co.uk. By taking a steady, strategic approach and carefully evaluating our options, we've been able to transform our core competencies in the United States into international success. By examining how we have achieved our goals, we hope to help other e-commerce sites make the move across international borders.

THE UNIVERSAL APPEAL OF E-COMMERCE

The increasing popularity of the Internet around the world has e-commerce poised for phenomenal future growth. According to eMarketer's *eGlobal Report* (March 2000), non-U.S. markets currently account for 31 percent of the e-commerce industry. But this percentage is expected to increase to 40.5 percent by 2003, representing nearly $600,000 million. European e-commerce revenues alone are expected to grow from $16,810 million in 1999 to $425,500 million by 2003.

While the potential for international growth seems boundless, challenges do exist to altering customers' expectations and behavior. If Amazon.com's experience is any indication, the overwhelming universal appeal of e-commerce will eventually change international shopping behavior. To plan for this change, we must first examine the benefits of shopping online, which are valid for both domestic and international customers.

- **Selection:** In countries where store selection is limited due to economic conditions or local customs, e-commerce can be a revelation, offering products and services that many consumers thought they'd never be able to purchase. In fact, our research shows that customers rank selection as Amazon.com's most important asset.

- **Convenience:** Many business executives have faced the challenge of dealing with different time zones in trying to reach international customers. But online stores never close, letting shoppers place orders 24 hours a day, seven days a week, no matter where they are.

- **Customer Service:** In the United States and around the world, customer service offers e-commerce companies the opportunity to stand out from physical stores. Shoppers must be able to have questions answered, easily return merchandise, and receive adequate communications from the retailer. For European and Japanese customers, who are not accustomed to 24-hour-a-day customer service, the Internet's capabilities provide e-commerce sites with a key differentiating factor over

brick-and-mortar retailers. The challenge for online retailers is to have customer service representatives who adequately understand the needs of shoppers in different countries around the world.

• **Information:** The Internet gives consumers access to a wealth of information, often considerably more than they could find on their own in the physical world, helping them make better-informed purchase decisions than ever before.

• **Security and Safety:** All shoppers want to ensure that their online purchases are safe. The industry has come a long way in offering state-of-the-art encryption systems that virtually guarantee a secure and safe transaction.

FACILITATING INTERNATIONAL SALES

The power of the Internet makes it easy to connect online retailers with customers around the world. When people talk about international e-commerce expansion, they often overlook the fact that a single Web site can sell to international markets without adding physical stores or warehouses overseas, or even making significant investments in researching the potential of non-U.S. markets.

In its first month of operation after opening its virtual doors in July 1995, Amazon.com sold to customers in 45 countries. Today, we sell in more than 150 countries. Currently, 22 percent of Amazon.com's sales come from outside the United States, and 14 percent of sales come from Europe alone.

STRATEGIES FOR EXPANDING INTERNATIONAL SALES

The June 26, 1999, issue of *The Economist* summed up some of the challenges of international e-commerce very succinctly: "In Europe, the Internet will help turn the single currency into the foundation of a genuine single market for consumers. Yet Europeans are less prepared than Americans to buy electronically; they are less likely to have credit cards, have less experience of mail-order shopping, and are generally more conservative in their shopping habits." Because of such challenges, e-commerce sites must aggressively promote their benefits in order to effectively change buyer behavior or adjust their operations to respect local customs. For example, because European and Japanese customers do not regularly use credit cards, the Amazon.co.uk and Amazon.de sites offer additional payment options, such as checks and postal orders, that reflect international customer needs and behavior patterns.

In expanding internationally, Amazon.com has learned several key strategies that have helped us overcome a variety of challenges and barriers.

• **Adhere to Local Laws:** The first priority for all e-tailers looking to expand internationally is following local laws. Before you can focus on providing better selection and service to customers, you have to make sure your company won't get into legal trouble for its efforts. For example, retailers are not allowed to discount the price of books in Germany. Because Amazon.com is highly regarded for our competitive prices, this law forced us to look at our strengths and find other ways to satisfy the German market's diverse needs, such as our comprehensive selection of products and services and the insight provided by local editors.

International agreements also are important. For example, some online privacy issues have been more sensitive in Europe than in the United States. In fact, the EU and the U.S. government recently reached a preliminary agreement on the treatment of personal and confidential data. At Amazon.com, we use personal information to bring added benefits to our customers, such as a more personalized shopping experience. For example, when a customer is considering a book purchase, we will offer other selections in subject areas where the customer has shown a previous interest.

In addition to respecting local customs, e-commerce sites must overcome customs such as limited hours or inadequate supply that can create unmet customer needs and spoken customer resentment.

• **Expand Through Acquisition:** For some e-commerce companies, one way to help expand internationally is to buy existing retailers in the target market. Amazon.com purchased two European e-commerce sites in early 1998 (Telebuch in Germany, and Bookpages in the United Kingdom) then relaunched them as Amazon.com-branded sites. The sites had loyal followings, allowing Amazon.com to immediately gain a solid customer base in these markets.

• **Establish a Ground Presence:** Even with the Internet's incredible capabilities, it can be difficult to run an international business without having some sort of

physical presence in foreign countries. This can take the form of sales staff on the ground in key markets, international distribution centers, and customer service centers.

Because of the overwhelming support Amazon.com received from European audiences, we knew that our American warehouses and customer service centers would be unable to support the level of sales we expected in Europe. To meet this growing demand, Amazon.com opened customer service centers in Slough, England, and Regensburg, Germany, and most recently opened a center in The Hague to support requests from Germany, the United Kingdom, and the rest of Europe, employing multilingual representatives to serve Europe's diverse consumers.

• **Select a Receptive Market:** Online retailers should look for markets whose needs are closely aligned with the products and services they offer. For example, many people have asked me, "Why Germany?" The United Kingdom is a common destination for many companies' international expansion, but Amazon.com also saw great potential in the German market. In this market, online retailers can flourish by providing a level of customer service that is impossible to find in brick-and-mortar stores. In addition, Germany is a significant publishing and reading nation, with approximately 2,000 publishing houses, indicating a strong desire for books, Amazon.com's core segment.

• **Never Underestimate the Importance of Customer Service:** After an e-commerce site has established an international presence, it must continually focus on providing exceptional customer service. Because Amazon.com's goal is to build the Earth's most customer-centric company, the ability to offer the best customer service possible — both domestically and internationally — is the highest priority. To that end, we hired local editors in both Germany and the United Kingdom to provide us with the insight that only local residents can offer. We also made the overall look and feel of the Amazon.co.uk and Amazon.de sites consistent with the original Amazon.com site, offering a sense of familiarity among customers who knew our primary site. And we have offered the same innovative services on our international sites as on the U.S. site, such as Auctions and zShops, which allow customers to buy and sell products with other Amazon.com customers, expanding the product selection available through the site.

WHAT IT TAKES

Through our attention to customers and careful research, Amazon.com's efforts have been rewarded with significant customer support. According to Media Metrix, Amazon.co.uk, Amazon.de and Amazon.com are the three most popular e-commerce sites among European audiences. Amazon.co.uk has built a customer base of more than one million in less than 18 months, and Amazon.de also has more than one million customers.

But in order for the e-commerce industry to continue expanding internationally, retailers and consumers must urge government to refrain from enacting regulation or taxes that could stifle its growth. It's difficult to remember that the Internet is still in its infancy, requiring policies that encourage growth and promote Internet access around the world. We cannot know how e-commerce will benefit our lives in the future, so governments should be careful not to limit the type of innovative thinking that has brought the industry to this point. Working together with government, online retailers such as Amazon.com can help realize the Internet's full potential.

Just as Amazon.com has succeeded internationally, other e-commerce sites can achieve results by respecting local laws and customs while serving universal needs and tailoring offerings to not only meet but also exceed local expectations. By providing better selection, convenience, and service than international shoppers traditionally receive from brick-and-mortar stores, e-commerce companies can build a strong foreign presence and pave the way for successful international expansion. ❑

Note: The opinions expressed in this article do not necessarily reflect the views or policies of the U.S. government, nor does the publication of the article suggest an endorsement of Amazon.com.

❑ THE GLOBAL TECHNOLOGY NETWORK

Operated out of Office of Business Development of the U.S. Agency for International Development (USAID), the Global Technology Network (GTN) assists small businesses in developing countries form partnerships with U.S. companies. GTN partners are linked together with an Internet-based communications and trade lead system that facilitates their collaboration. GTN focuses primarily on agriculture, communications and information technology, environment and energy, and health technology.

HOW DOES THE GTN PROGRAM WORK?

GTN matches the needs of a company in a developing country with U.S. firms equipped to provide the appropriate technological solutions. Business opportunities are identified and tracked by a network of in-country partner organizations and individuals. The information is transmitted to GTN in Washington where it is evaluated, matched, and electronically disseminated to U.S. firms registered in GTN's databases.

Here are some of the success stories.

• A Singaporean ministry purchased $850,000 in odor control equipment from a company in Minnesota.

• A New Jersey information technology firm entered into partnership with a Cameroonian company to supply satellite equipment to 25 cities.

• A Chilean company bought $350,000 in food and dairy processing equipment from a corporation in Ohio for distribution throughout Chile.

• A company in California secured a $280,000 contract to sell pollution monitoring equipment to a Korean firm.

• A Missouri import-export company established a memorandum of understanding with a Ugandan firm to supply water pipes worth more than $1.3 million.

• A Montana company exported $100,000 in compact wastewater treatment equipment to Colombia.

GTN TRAVEL GRANTS

A small travel grant program supports firms pursuing information on possible GTN partnerships. GTN grants are available for both developing country and U.S. entrepreneurs. GTN grants can be used to fund travel, equipment and product demonstrations, and other approved activities up to $5,000.

BUSINESS SUPPORT CENTERS

GTN works with USAID missions to establish in-country business support centers (BSCs) to provide local business services and market linkages. The BSCs assist small and medium-size enterprises in developing countries gain access to U.S. technology, products, and services to compete effectively in local, regional, and global markets. The BSCs typically are located in the offices of the national chambers of commerce in developing countries.

GTN BUSINESS OUTREACH

Follow-up on potential business deals, as well as information on general USAID procurement, is provided through USAID outreach offices in California, Florida, Illinois, and Washington. Additional outreach is provided through the U.S. Export Assistance Centers and 30 state trade partner organizations located in Alaska, Arkansas, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nevada, New Jersey, New York, North Carolina, Pennsylvania, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, and Washington, D.C.

GTN REGIONAL TRADE INITIATIVES

GTN provides electronic commerce linkages that facilitate domestic and regional trade in USAID-assisted regions worldwide. With USAID regional bureau or mission funding, GTN will install an electronic trade opportunity matching system and a communications network in selected host-country organizations and will train local

staff on their use. The GTN regional initiative complements USAID strategic objectives by creating a permanent link to domestic, regional, and U.S. markets.

GTN TRADE MISSION SERVICES

GTN trade mission services, which include sector briefings and networking support to USAID field missions and domestic partners, is provided in cooperation with other U.S. and multilateral agencies. Trade missions are held at USAID offices in the International Trade Center in Washington, D.C. Similar services are available for incoming GTN trade delegations sponsored by USAID missions and U.S. embassies abroad, foreign embassies, or other GTN partner organizations.

In 2000, GTN is participating in trade missions in, Argentina, Mauritius, Nigeria, Tunisia, and Egypt, among other places. GTN says Nigeria's new leadership under President Olusegun Obasanjo is committed to privatizing many state-owned companies. "With more than 110 million people, Nigeria is a huge market that remains largely untapped by American companies," a GTN statement said.

GTN REGIONS OF OPERATION

Asia and the Near East: Egypt, Hong Kong, India, Indonesia, Jordan, Korea, Malaysia, Mongolia, Morocco, Philippines, Singapore, Sri Lanka, Taiwan.

Africa: Burkina Faso, Cameroon, Ghana, Kenya, Mauritius, Senegal, Tanzania, Uganda, Zimbabwe.

Latin America: Argentina, Brazil, Chile, Colombia, Mexico, Panama, Peru, Uruguay.

Eastern Europe and NIS: Armenia, Bulgaria, Croatia, Czech Republic, Hungary, Kazakhstan, Macedonia, Poland, Romania, Russia. ❑

For more information, please contact GTN at:
Global Technology Network
1629 K Street, N.W., Suite 1000
Washington, D.C. 20006
Tel. 800-872-4348
Fax: 202-466-4597
Internet: http://www.usgtn.org/

❑ E-COMMERCE: AN INTERNATIONAL EFFORT

The development of electronic commerce clearly has a head start in the United States. However, leading international organizations are actively engaged is such e-commerce issues as international property, Internet security, and taxation to help ensure that business conducted over the Internet is free from trade restrictions and that electronic business opportunities are available to developing and industrial countries alike. Following are some of the e-commerce efforts undertaken by these organizations.

ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD)

The OECD has promulgated a number of guidelines and policy reports aimed at examining the implications of electronic commerce for governments, business, and the general public and at providing recommendations for further actions. The following reports and guidelines may be accessed from the Internet at http://www.oecd.org/dsti/sti/it/ec/index.htm.

• ***Guidelines for Consumer Protection in the Context of Electronic Commerce*** (December 1999): Assists governments, businesses, and consumer representatives in developing and implementing online consumer protection mechanisms.

• ***Global Information Infrastructure-Global Information Society: Policy Recommendations for Action*** (May 1997): Encourages the development of policies that fully exploit the contributions of advances in information technology.

• ***Guidelines for Cryptography Policy*** (March 1997): Guides countries in formulating their own policies and legislation relating to the use of cryptography.

• ***Guidelines for the Security of Information Systems*** (November 1992): Addresses the safety of cross-border electronic commerce, including electronic money transactions and Internet payments.

• ***The Declaration on Transborder Data Flows*** (April 1985): Promotes access to and protection of information affecting transborder data flows.

• ***Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data*** (September 1980): Seeks harmonization of national privacy legislation and provides a framework for facilitating international flows of data, while upholding human rights.

WORLD TRADE ORGANIZATION (WTO)

On September 30, 1998, the WTO General Council established a formal work program to address a number of e-commerce issues of relevance to the WTO, such as intellectual property, government procurement, import duties on information technology products, and services. An agreement also was brokered not to impose customs duties on electronic transmissions. The moratorium on taxation is still in effect. Different WTO committees are conducting the current work program, and initial reports were submitted in July 1999. The committees and the Web addresses for the initial reports are as follows:

• **The Council for Trade in Services:** Examines e-commerce issues related to most-favored-nation treatment, transparency, competition, privacy, national treatment, access to public telecommunications transport networks, and customs duties.
http://www.wto.org/wto/ecom/e_cts.htm

• **The Council for Trade in Goods:** Examines market access for products related to electronic commerce, valuation issues, standards, and rules of origin.
http://www.wto.org/wto/ecom/e_ctg.htm

• **The Council for Trade-Related Intellectual Property:** Examines protection and enforcement of copyrights and trademarks.
http://www.wto.org/wto/ecom/e_trips.htm

• **The Committee for Trade and Development:** Examines the effects of electronic commerce on the trade and economic prospects of developing countries, and how to enhance developing country participation in electronic commerce.
http://www.wto.org/wto/ecom/e_ctd.htm

UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE LAW (UNCITRAL)

UNCITRAL, the central legal body of the United Nations system in the field of international trade law, has formulated a model electronic commerce law, endorsed by the UN General Assembly, that supports the commercial use of international contracts in electronic commerce. This model law establishes rules and norms that validate and recognize contracts formed through electronic means, sets default rules for contract formation and governance of electronic contract commerce, defines the characteristics of a valid electronic writing and an original document, provides for the acceptability of electronic signatures for legal and commercial purposes, and supports the admission of computer evidence in courts and arbitration proceedings. The Model Law is being implemented in many countries and is generally regarded as a useful reference by legislators throughout the world. UNCITRAL also was responsible for a Model Law on International Credit Transfers in 1992, and it published a legal guide on electronic funds transfers in 1987. http://www.uncitral.org/en-index.htm

ASIA-PACIFIC ECONOMIC COOPERATION FORUM (APEC)

Ministers to the 11th APEC ministerial meeting in New Zealand, September 9-10, 1999, issued a statement noting the potential for electronic commerce to provide "extraordinary stimulus to regional growth and trade." The statement provides the following guidelines and measures for further work, with the aim of achieving paperless trading by 2005 for developed economies and by 2010 for developing economies.

• The private sector has the key role in driving change and innovation, while the public sector must ensure a favorable regulatory environment for e-commerce to flourish.

• APEC economies are encouraged to consider the UNCITRAL Model Law in developing their regulatory framework.

• Member countries are to initiate work on consumer protection.

• Officials are to develop an APEC-wide plan to support use of e-commerce by small and medium-sized enterprises.

WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO)

In September 1999, WIPO member states approved the Digital Agenda, the key goals of which are to:

• Broaden the participation of developing countries in electronic commerce through the use of WIPOnet.

• Facilitate e-commerce by extending the principles of the World Performances and Phonograms Treaty to audiovisual performances, adapting broadcasters' rights to the digital era, and making progress on an international agreement on the protection of databases.

• Aim to curb the abuse of trademarks on the Internet by determining the appropriate balancing of rights between holders of domain names and intellectual property rights owners.

• Seek rules for determining the intellectual property liability of online service providers.

• Promote the online licensing of the digital expression of cultural heritage and the online administration of intellectual property disputes.

• Develop online procedures for the filing and administration of international applications for the Patent Cooperation Treaty, the Madrid System, and the Hague Agreement at the earliest possible date.
http://www.wipo.org/eng/pressrel/1999/p185r.htm

FREE TRADE AREA OF THE AMERICAS (FTAA)

A joint government-private sector committee of experts, meeting under FTAA auspices, issued recommendations to ministers in September 1999 calling for enhanced telecommunications infrastructure development, lower telecommunication costs, increased skills training related to digital technologies, and effective intellectual property protection. Specifically, the report urged:

• Greater private sector competition in telecommunication services to facilitate lower costs.

• Access by governments to public telecommunications networks on a non-discriminatory basis.

• Expansion of Internet services open to the public, such as in schools, libraries, community centers, and public phone centers.

• Support for standards setting within international, voluntary, and consensus-based bodies.

• Identification and removal of legal barriers to the recognition of electronic records and transactions.

• Adoption of an effective electronic payment system readily available to the business community and consumers. ❑

The report may be accessed online at http://www.ecommerce.gov/PressRelease/ecom-01.html.

❑ THE INTERNET AND CUSTOMS DUTIES

By Demetrios Marantis, Associate General Counsel, Office of the U.S. Trade Representative (USTR), and Jonathan McHale, Director of USTR's Office of Industry

One of the primary goals of the United States with respect to electronic commerce is to ensure that trade over the Internet can develop unimpeded. In this regard, the United States has sought to keep cyberspace "duty free" — that is, free from tariffs or customs duties on electronic transmissions (the data streams that constitute products and services in cyberspace). Currently, no member of the World Trade Organization (WTO) considers electronic transmissions as imports subject to duties for customs purposes. Indeed, member governments of the WTO agreed in May 1998 to continue to refrain from imposing customs duties on electronic transmissions.

A cyberspace free of customs duties does not mean that physical goods ordered over the Internet are free from customs duties. Nor does it mean that items ordered electronically are exempt from internal taxes. Duty-free cyberspace merely means that electronic transmissions coming from abroad are not subject to customs duties at the border.

U.S. trading partners recognize the obvious benefits of continuing this moratorium. It encourages vigorous competition, innovation, and entrepreneurship on the Internet and avoids the trade-distorting effects of customs duties. As a result, consumers benefit from cheaper goods, businesses benefit from the discipline of the marketplace, and the overall economy benefits from enhanced growth. The moratorium also avoids the costs associated with imposing customs duties on electronic transmissions. For a delivery mechanism based on an open network, where borders are meaningless, imposing customs duties "at the border" would be a burden that would slow the growth of electronic commerce. Many companies would shun doing business with countries that impose such requirements.

While no country currently imposes duties on electronic transmissions, the United States is the only WTO member that has formalized this commitment by specifying it in its tariff schedule. The United States is encouraging all WTO members to join in making a similar, internationally binding commitment.

The United States also has urged WTO members to formally adopt the understanding that e-commerce falls within the scope of existing WTO rules and commitments. This is important, as WTO obligations help to avert trade-restrictive regulations affecting e-commerce and act as a strong and powerful defense against unreasonable regulation that creates trade barriers. Conducting e-commerce in conformity with WTO rules and commitments will thereby ensure a predictable, trade-liberalizing environment, promote the growth of e-commerce, and create opportunities for trade for WTO members at all stages of development. ❑

KEY CONTACTS AND INTERNET SITES RELATED TO ELECTRONIC COMMERCE

UNITED STATES GOVERNMENT

International Development Cooperation Agency
1300 Pennsylvania Avenue, N.W.
Washington, D.C. 20523 U.S.A.

U.S. Agency for International Development
Global Technology Network
http://www.usgtn.org

U.S. Department of Commerce
14th Street and Constitution Avenue, N.W.
Washington, D.C. 20230 U.S.A.

International Trade Administration
Electronic Commerce Task Force
http://www.ita.doc.gov/td/ecom

Secretariat for Electronic Commerce
U.S. Government Policy
http://ecommerce.gov

National Institute of Standards and Technology
Computer Security Resource Clearinghouse
http://csrc.nist.gov

U.S. Department of State
2201 C Street, N.W.
Washington, D.C. 20520 U.S.A.

Bureau of Economic and Business Affairs
Communications and Information Policy
Presidential Internet for Economic Development Initiative
http://www.state.gov/www/issues/economic/cip/internet.html

U.S. Federal Trade Commission
600 Pennsylvania Avenue, N.W.
Washington, D.C. 20580 U.S.A.

Bureau of Consumer Protection
E-Commerce and the Internet
http://www.ftc.gov/bcp/menu-internet.htm

U.S. General Services Administration
1800 F Street, N.W.
Washington, D.C. 20405

Federal Electronic Commerce Program Office
http://ec.fed.gov

ADDITIONAL U.S. GOVERNMENT WEB SITES

Advisory Commission on Electronic Commerce
http://www.ecommercecommission.org

National Conference of Commissioners on Uniform State Laws
Business Laws — Electronic Transactions
http://www.nccusl.org/uniformacts-subjectmatter.htm

INTERNATIONAL ORGANIZATION WEB SITES

Asia-Pacific Economic Cooperation (APEC)
http://www.ecommerce.gov/apec

European Union (EU)
http://www.ispo.cec.be/ecommerce/

Free Trade Area of the Americas (FTAA)
http://www.ftaa-alca.org/spcomm/commec_e.asp

Organization for Economic Cooperation and Development (OECD)
http://www.oecd.org/dsti/sti/it/ec

UN Commission on International Trade Law
http://www.uncitral.org

UN Conference on Trade and Development (UNCTAD)
http://www.unctad.org/ecommerce

World Intellectual Property Organization (WIPO)
http://ecommerce.wipo.int/index-eng.html

World Trade Organization (WTO)
http://www.wto.org/wto/ecom/ecom.htm

BUSINESS, LEGAL, THINK TANK, AND ACADEMIC WEB SITES

American Bar Association
Committee on Cyberspace Law
http://www.abanet.org/buslaw/cyber

Carnegie Mellon Software Engineering Institute
CERT Coordination Center
http://www.cert.org

Center for Research in Electronic Commerce
University of Texas at Austin
http://crec.bus.utexas.edu

Electronic Commerce Resources at Berkeley
The University of California at Berkeley
http://www.sims.berkeley.edu/resources/ecommerce

Global Business Dialog on Electronic Commerce
http://www.gbd.org

Global Information Infrastructure Commission
A Project of the Center for Strategic and International Studies
http://www.giic.org/focus/ecommerce/

Lex Mercatoria –- Electronic Commerce
Commercial Law and E-Commerce Infrastructure Monitor
http://lexmercatoria.org

2000 Global Internet Summit
The Tech Center, George Mason University
http://www.internetsummit.org/default.htm

United States Council for International Business
http://www.uscib.org/trade/eleccomm.htm

INTERNET SUBJECT DIRECTORIES FOR ACCESSING ADDITIONAL, CURRENT E-COMMERCE RESOURCES

Britannica.com, "The Web's Best Sites"
Business: Electronic Commerce
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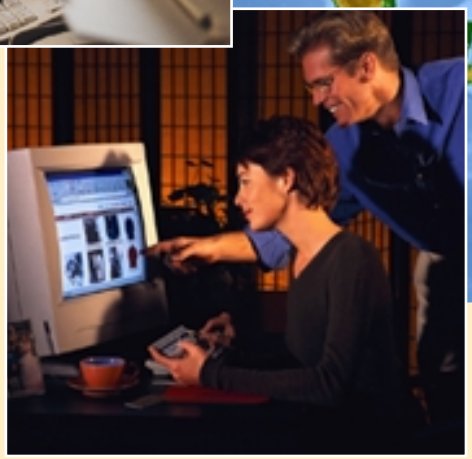

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