Electronic Commerce: An Introduction

June 27, 2000

Glenn J. McLoughlin
Specialist in Technology and Communications Resources, Science, and Industry Division
Updated June 27, 2000

Summary

Electronic commercial transactions over the Internet, or . e-commerce,. have grown so fast over the last five years that many experts continue to underestimate its growth and development. Whether retail business-to-customer or business-to-business transactions, e-commerce shows no signs of slowing down. In turn, policymakers both in the United States and abroad are likely to face increasingly complex issues of security, privacy, taxation, infrastructure development and other issues in 2000 and beyond. This report will be updated periodically.

The Internet and E-Commerce *1*

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

In 1995, it was estimated that between 1 and 2 million people in the United States used the Internet for some form of commercial transaction. By the next year, Internet traffic, including e-commerce, was doubling every 100 days. By mid-1997, the U.S. Department of Commerce reported that just over 4 million people were using e-commerce; by the end of 1997, that figure had grown to over 10 million users. The rate of e-commerce growth continues to rapidly that projections often are outdated as fast as they are published. One 1998 industry estimate projected that U.S. retail transactions would reach $7 billion by 2000 . a figure now widely accepted as having been reached in *the year the report came out*. Still, reliable industry sources report huge jumps in e-commerce transactions, particularly during fourth quarter holiday shopping. The Census Bureau of the Department of Commerce, which began tracking national e-commerce sales in 1999, estimates that in the first quarter of 2000, total retail e-commerce sales reached $5.3 billion, an increase of 1.2% from fourth quarter 1999. Some analysts contend that financial transactions-such as electronic banking and online stock trading-are also fueling a large part of retail e-commerce growth. *2*

One of the fastest growing sectors of e-commerce is business-to-business transactions. The Forrester Group, a private sector consulting firm, estimates that by 2003, that sector of the U.S. economy will reach $1.5 trillion, up from $131 billion in 1999. In the United States, business-to-business transactions between small and medium sized businesses and their suppliers is rapidly growing, as many of these firms begin to use Internet connections for supply chain management, after-sales support, and payments.

Internationally, there are issues regarding Internet use and e-commerce growth. While the western industrialized nations dominate Internet development and use, by the year 2003 more than half of the material posted on the Internet will be in a language other than English. This has large ramifications for e-commerce and ease of transactions, security, and privacy issues. Policymakers, industry leaders, academicians, and others are concerned that this development will not correlate with equal access to the Internet for many in developing nations . therefore creating a global . digital divide.. The United States and Canada represent the largest percentage of Internet users, at 56.6%. Europe follows with 23.4%. At the end of 1999, of approximately 180 million Internet users worldwide, only 3.1% are in Latin America, 0.5% are in the Middle East, and 0.6% are in Africa. The Asian Pacific region has 15.8% of all Internet users; but its rate of growth of Internet use is nearly twice as fast as the United States and Canada.

U.S. Perspectives

The Clinton Administration: Policies and Principles. *3* The Clinton Administration's approach to e-commerce was laid out in a 1994 speech by Vice President Gore. In that speech in Buenos Aires, the Vice President announced that the United States would pursue the development of a global network of networks that he called the Global Information Infrastructure, or GII. He stated that the United States would encourage private investment, promote competition, provide open access, create flexible regulatory environments, and ensure universal service so that the Internet would truly become a global network. According to Vice President Gore, the GII could act as a key for economic growth and increase global trade among nations.

In a subsequent series of reports, the Clinton Administration amplified and expanded upon these principles. In June 1997, the Clinton Administration released a report, . A Framework for Global Electronic Commerce.. Building upon the GII, the Administration advocated a wide range of policy prescriptions. These included calling on the World Trade Organization (WTO) to declare the Internet to be a tax-free environment for delivering both goods and services; recommending that no new tax policies should be imposed on Internet commerce; stating that nations develop a . uniform commercial code. for electronic commerce; requesting that intellectual property protection . patents, trademarks, and copyrights . be consistent and enforceable; that nations adhere to international agreements to protect the security and privacy of Internet commercial transactions; that governments and businesses cooperate to more fully develop and expand the Internet infrastructure; and that businesses self-regulate e-commerce content.

The Clinton Administration followed this report with the first annual report of the U.S. Government Working Group on Electronic Commerce in December 1998. This report highlighted the domestic and international e-commerce policies and achievements of the Clinton Administration, including summaries of President Clinton. s Electronic Commerce Strategy and the major international agreements flowing from this strategy. Among the achievements listed were U.S. agreements with the Netherlands, Japan, France, Ireland, and Korea to remove barriers to e-commerce; and U.S. participation in agreements under the WTO, the European Union (EU), the Asian-Pacific Economic Council, and the Trans-Atlantic Business Dialogue, all of which provide broad policy guidelines to encourage continued e-commerce growth.

The Clinton Administration's . The Emerging Digital Economy. (April 1998) and . The Emerging Digital Economy II. (June 1999) provide overarching views on domestic and global e-commerce. These reports provide data on the explosive growth of e-commerce, its role in global trade and national Gross Domestic Product (GDP), and contributions that computer and telecommunications technology convergence is making to productivity gains in the United States and worldwide. On June 5, 2000 the third report, . Digital Economy 2000,. was released. Among the report highlights are the effects that information technologies have had on raising national productivity, lowering inflation, and creating high wage jobs.

Role of Congress. Since the mid-1990s, Congress also has taken an active interest in the e-commerce issue. Among many issues, Congress has considered legislation to establish federal encryption and electronic signature policies, and in 1998, Congress enacted legislation creating a 3-year moratorium on e-commerce taxation.

Encryption. Encryption is the encoding of electronic messages to transfer important information and data, in which . keys. are needed to unlock and decode the message. Encryption is an important element of e-commerce security, with the issue of who holds the keys at the core of the debate. The 105th Congress considered seven bills addressing national encryption/computer security policy; none was enacted. In the 106th congress, two bills are being considered, with several congressional committees having significant differences regarding over the legislation. Also, the Clinton Administration has had differences with both congressional policymakers and representatives of U.S. industry over its encryption policy. Initially, the Administration favored a policy in which the federal government would hold keys for all major commercial transactions. However, industry and congressional critics contended that citizens. privacy rights could easily be violated. Currently, the Administration favors a policy in which a . spare key. would be held by a third party . key recovery agent,. and not directly held by the federal government. Still, many critics are uncomfortable with the federal role in having direct access to the . spare key.. (See CRS Issue Brief IB96039, *Encryption Technology: Congressional Issues*, by Richard M. Nunno, for more on this issue).

Export Control. In addition, U.S. export control policy makes it easy to export products with key recovery, and difficult to export those products without key recovery. The Clinton Administration's position is that export control is a way in which the federal government can ensure that unfriendly forces do not have encrypted communications or data transmission that the United States cannot recover. Some in U.S. industry contend that this policy is only restricting U.S. trade in electronic goods and services while foreign firms are freer to engage in this trade. In part due to this industry opposition, and because the 106th Congress has not fully supported the Clinton Administration's position on this issue, the Administration announced on January 14, 2000 new export regulations. The proposed rule changes would allow retail encryption commodities and software of any key length to be exported to most countries without a license, with certain qualifications. (See CRS Report RL30273, *Encryption Export Control*s, by Jeanne Grimmett, for more on U.S. encryption export control policy).

Electronic Signatures. Electronic signatures are a means of verifying the identity of a user of a computer system to control access to, or to authorize, a transaction. The main congressional interests in electronic signatures focus on enabling electronic signatures to carry legal weight in place of written signatures, removing the inconsistencies among state policies that some fear may retard the growth of e-commerce, and establishing federal government requirements for use of electronic signatures when filing information electronically. Neither federal law enforcement nor national security agencies oppose these objectives, and most U.S, businesses would like a national electronic signatures standard to further enhance e-commerce. In June 2000 the conference report for S.761, the Electronic Signatures in Global and National Commerce Act, was approved by both the House and Senate. S.761, among its many provisions, establishes principles for U.S. negotiators to follow in setting global electronic signatures policies. It now awaits the President's signature (For more, see CRS Report RS20344, *Electronic Signatures: Technology Development and Legislative Issues*, by Richard M. Nunno).

Taxation. *4* Congress passed the Internet Tax Freedom Act of October 21, 1998, as Titles XI and XII of the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999 (P.L. 105-277, 112 Stat 2681). Among its provisions, the Act imposes a 3-year moratorium on the ability of state and local governments to levy certain taxes on the Internet; it prohibits taxes on Internet access, unless such a tax was generally imposed and actually enforced prior to October 1, 1998; it creates an Advisory Commission on Electronic Commerce (ACED), which may make recommendations to Congress on e-commerce taxation in the United States and abroad; and it opposes regulatory, tariff, and tax barriers to international e-commerce and asks the President to pursue international agreements to ban them. (See CRS Report RL30412, *Internet Taxation: Bills in the 106th Congress*, by Nonna A. Noto, for more on this issue).

The ACEC made its policy recommendations, after such debate and some divisiveness, to Congress on April 3, 2000. The ACEC called for, among its recommendations, extending the domestic Internet tax moratorium for five more years, through 2006; prohibiting the taxation of digitized goods over the Internet, regardless of national source; and a continued moratorium on any international tariffs on electronic transmissions over the Internet. On May 18, 2000 the House of Representatives passed H.R. 3709, the Internet Nondiscrimination Act, which extends the domestic tax moratorium for five additional years beyond October 1, 20001. This legislation has been referred to the Senate.

Beyond U.S Policies: the WTO and the EU

While much of the debate on the government's role in e-commerce has focused on domestic issues in the United States, two important players . the WTO and the EU- will likely have an important impact on global e-commerce policy development.

The WTO. The success of the General Agreement on Tariffs and Trade (GATT) in reducing and eliminating many trade barriers led to an increased focus on other issues, such as reducing trade barriers in global service industries and high technology goods, by the WTO (its successor since January 1, 1995). (For more on the WTO, see CRS Report 98-928, T*he World Trade Organization: Background and Issues*, by Lenore Sek).

The first WTO Ministerial conference was held in Singapore on December 9-13, 1996. Among the issues considered by the WTO participants was an agreement to reduce trade barriers for information technology goods and services. This issue was considered vital to the development of telecommunications infrastructure-including the Internet-among developing countries. A majority of participants signed an agreement to reduce these barriers. At the second WTO Ministerial conference, held in Geneva on May 18 and 20, 1998, an agreement was reached by the participating trade ministers to direct the WTO General Council to develop a work program on electronic commerce and to report on the progress of the work program, with recommendations, at the next conference. The ministers also agreed that countries continue the practice of not imposing tariffs on electronic transmissions. The third WTO Ministerial meeting in Seattle, December 7-10, 1999, was marked both by strife in the streets of Seattle and disruption of the conference proceedings. While the General Council reported favorably on maintaining the international e-commerce tax moratorium, no final decision was reached at the conclusion of the Seattle Ministerial. (See CRS Report RS20319, *Telecommunications Services: Trade and the WTO Agreement*, by Bernard A. Gelb, and CRS Report RS20387, *The World Trade Organization (WTO) Seattle Ministerial Conference*, by Lenore Sek).

The EU. The EU is very active in e-commerce issues. In some areas there is agreement with U.S. policies, and in some areas there are still tensions. While the EU as an entity represents a sizable portion of global Internet connections, users are concentrated in countries like the United Kingdom and Germany. In France, Italy, and Spain, the rate of Internet connection is reported at less than five percent of the total population. Thus, while EU policies can provide a broad regional context for e-commerce, across national boundaries, Internet use and e-commerce potential varies widely. The United Kingdom, Ireland, and France have advocated a common set of standards that, they contend, would provide a baseline of government regulation for e-commerce. These countries have opposed a more specific and perhaps restrictive approach across the EU. Germany, Austria, and the Netherlands have advocated extending domestic commercial legislation to e-commerce. Critics contend that this latter approach would ensnare e-commerce in a knot of differing national laws and regulations; supporters state that e-commerce policy should not be set by EU bureaucrats in Brussels.

To address this issue, the EU has approached e-commerce with what one observer has called a . light regulatory touch.. On December 7, 1999, the European Commission announced an EU Directive that includes language that governs electronic contracts, the information an e-commerce trader must give to a customer, what advertising e-mails must say about the sender, and limits on the liabilities of intermediaries for unlawful content. The EU also has supported the temporary moratorium on new e-commerce taxes, and supports making the moratorium permanent. But the EU has taken a different approach than U.S. policy for treating electronic transactions under international tariff regimes. The EU favors treating electronic transmissions (including those that deliver electronic goods such as software) as services. This position would allow EU countries more flexibility in imposing trade restrictions, and would allow treating electronic transmissions . including e-commerce . as services, making them subject to EU value-added duties.

The EU also has taken a different approach to data protection and privacy, key components for strengthening e-commerce security and maintaining consumer confidence. The EU. s Data Protection Directive went into effect in October 1998. This Directive prohibits the transfer of data in and out of the EU, unless the outside country provides sufficient privacy safeguards. The U.S. position has been to permit industry self-regulation of data protection and privacy safeguards. On May 31, 2000 U.S, and EU negotiators agreed to a . safe harbor. policy, in which U.S. organizations would voluntarily agree to adhere to EU principles of privacy protection. This issue may be revisited; many critics find this to be an unacceptable long-term solution, with ramifications that may possibly compromise U.S. corporate and citizens. privacy rights.

In the area of security, the EU has opposed restrictions on trade in encryption technology, contending that restrictions limit the security of the Internet and erodes European consumer and retailer confidence. As states above, the Administration's January 2000 rule changes would allow retail encryption commodities and software of any key length to be exported to most countries without a license, but with certain qualifications. Some contend that these policy changes have adversely affected U.S. e-commerce interest globally, while others welcome the changes. U.S.-EU negotiations on encryption policy likely will focus on ways to find common ground on this issue.

Issues

The 106th Congress may address a series of complex questions on e-commerce. They include: how viable is the continuation of the Internet tax moratorium, and can a consensus be reached on an e-commerce tax policy? What are the appropriate roles of government and industry in U.S. policies on encryption, digital signatures, and data storage and protection for e-commerce? What is the best mechanism for achieving standard and consistent e-commerce policies between the United States and other nations? Will the United States, by virtue of its large proportion of Internet use and e-commerce development, try to dominate global e-commerce policy? Internet use erases national boundaries, and the growth of e-commerce on the Internet and the complexity of these issues may mean that domestic and global e-commerce policies become increasingly intertwined.

FOOTNOTES:

1. For statistics and other date on e-commerce, sources include: [http://www.idc.com]; [http://www.abcnews.gov.com]; [http://www.forrester.com], and [http://www.cs.cmu.edu]. It is important to note that some measurements of e-commerce, particularly that data reported in the media, have not been verified.

2. Many e-commerce services firms have yet to turn a profit.

3. For more on the Clinton Administration policies, programs, and related reports, see:[http://www.whitehouse.gov].

4. The proposed domestic e-commerce tax is different from trade tariffs or duties to related e-commerce transactions.

END

- Key Policy Fact Sheets
- Reports and Publications
- International Media Engagement
- Photo Gallery
- Translations
- Foreign Press Center
- Video Products
- Email Subscriptions
- RSS News Feeds
- More...

- Foreign Per Diem Rates
- More...

Careers

- Foreign Service Officer
- Civil Service Officer
- Foreign Service Specialist
- Civilian Response Corps
- International Organizations
- Student Programs
- USAJobs: Working for America
- More...

- Trade Policy and Programs
- Country Commercial Guides
- Defense Trade Controls
- Small and Disadvantaged Business Utilization
- Recovery and Reinvestment Act
- FY2010 Service Contract Inventory Summary and Detail Report
- More...

Youth and Education

- Discover Diplomacy
- Global Youth Issues
- Student Website
- Diplomatic History
- Office of Overseas Schools
- Exchange Visitor Program
- Fulbright Program
- Student Career Programs
- Youth Exchange Programs
- U.S. Diplomacy Center
- Intercountry Adoption
- Parental Child Abduction
- More...

- Secretary of State John Kerry
- Senior Officials
- Alphabetical List of Bureaus and Offices
- Advisory Groups
- Biographies
- Plans, Performance, Budgets
- Open Government Initiative
- No FEAR Act.
- Inspector General Hotline
- U.S. Embassies and Other Posts
- U.S. Mission to the United Nations
- More...