

Report for Congress

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E-Commerce Statistics: Explanation and Sources

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E-Commerce Statistics: Explanation and Sources

Summary

The value of e-commerce transactions, while still small relative to the size of the U.S. economy, continues to show strong growth despite a recent economic downturn. Congress will play a vital role in many e-commerce policy issues, including Internet taxation, encryption and electronic authentication (i.e., digital signatures), intellectual property protection (i.e., patent or copyright infringement), computer network security, and privacy safeguards for individuals and organizations, as well as consideration of how European Union (EU) and World Trade Organization (WTO) policies may affect U.S. e-commerce activities.

While e-commerce growth is widely discussed, until recently it had remained largely undefined and unrecognized in official economic statistics. Establishing relevant and consistent working definitions is a critical first step in developing useful measures for e-commerce. The Bureau of the Census initiated an aggressive program in 2000 to begin filling the e-commerce data gap. In addition, the Bureau of Economic Analysis (BEA) is involved in measuring the new economy. BEA is studying the impact of the digital economy, to determine whether these changes should be captured in gross domestic product (GDP) and other economic accounts estimates. In February 2002, the Economics and Statistics Administration (ESA) of the U.S. Department of Commerce released *Digital Economy 2002*, its fourth annual report on the impact of information technology on the structure and performance of the U.S. economy. Among other findings, the report concluded that while early observers thought online versions of businesses would replace their real-world “bricks and mortar” counterparts, nothing approaching this degree of transformation has occurred.

The Census Bureau, the BEA, and ESA face a number of obstacles to providing accurate forecasts of electronic commerce. These include categorizing retailers who appear, disappear, or change products with dizzying regularity. There are hurdles in collecting data from e-commerce companies and in projecting data from survey respondents so that it represents the entire universe of e-commerce spending.

Private consulting firms and research and polling firms that provide estimates of the impact of the Internet on consumers and business, such as Nielsen and Gallup have also entered the field, along with new types of companies, such as Forrester Research, Gartner Group, Jupiter Communications, International Data Corporation (IDC), and Nielsen/Net Ratings. There is much debate over which Web measurement company’s methods are more accurate. The research firms disagree among themselves about sampling methods and panel selection, and differing methods of identifying and soliciting the survey participants result in different data interpretations.

This report addresses the complexities of measuring e-commerce growth and provides background information on government and private firms’ methods for estimating it. This report will be updated periodically.

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E-Commerce Statistics: Explanation and Sources

What Is E-Commerce?

Electronic commerce (or e-commerce)—i.e., business processes which shift transactions to the Internet (or some other nonproprietary, Web-based system)—is growing at a rapid rate. The value of e-commerce transactions, while still small relative to the size of the U.S. economy, continues to show strong growth despite a recent economic downturn. More significant than the dollar amount of these transactions, however, are the new business processes e-commerce makes possible and the new business models it is generating. Many new Internet-based companies and traditional producers of goods and services are working to transform their business processes into e-commerce processes in an effort to lower costs, improve customer service, and increase productivity, with varying degrees of success.

Congress will play a vital role in many e-commerce policy issues, including Internet taxation, encryption and electronic authentication (i.e., digital signatures), intellectual property protection (i.e., patent or copyright infringement), computer network security, and privacy safeguards for individuals and organizations, as well as consideration of how European Union (EU) and World Trade Organization (WTO) policies may affect U.S. e-commerce activities.

Complexities of Measuring E-Commerce

Difficult to Define

While e-commerce growth is widely discussed, it remains largely undefined and unrecognized in official economic statistics. Establishing relevant and consistent working definitions is a critical first step in developing useful measures for e-commerce. Policymakers, industry, and the media use a variety of methods to capture digital or electronic economic activity. Moreover, these terms often are used interchangeably and with no common understanding of their scope or relationships.¹

It is difficult to determine if all the dimensions of what is occurring in e-commerce can be identified. For example:

¹ Barbara Fraumeni, Marilyn Manser, and Thomas Mesenbourg, *Government Statistics: E-Commerce and the Electronic Economy*, U.S. Census Bureau, June 15, 2000, at [<http://www.census.gov/econ/www/ecom2.htm>].

- How is business-to-business (B2B) and business-to-consumer (B2C) e-commerce impacting the accuracy of labor surveys?
- What are the goods and services choices, characteristics, and prices offered?
- How difficult is it to track international transactions as well as business costs and productivity?²

Other Measurement Challenges

E-commerce businesses pose additional measurement challenges. These businesses can quickly expand their product line, adding new goods and services, even entering into entirely new kinds of activities, much faster than their retail and wholesale brick-and-mortar counterparts.

Additionally, the characteristics and prices of e-commerce products may not be the same as those sold in retail brick-and-mortar outlets or through wholesalers. For example, the Consumer Price Index (CPI) and resulting real personal consumption measures do not capture all aspects of consumer benefits from B2C transactions. E-commerce retail purchases may involve particular amenities for the consumer (such as convenience of shopping from home, added information that is available on the product, or lower prices) or deterrence (such as frustration at lengthy downloads, not being able to examine an item, or service deterioration).

These are the types of factors that are not captured in general in measures of prices and real gross domestic product (GDP). It is not clear that these sorts of problems are greater for e-commerce than for other activities, nor even that they do not in general balance out. In the area of B2B e-commerce, improved speed and convenience may result in lower costs and higher productivity, but may not be reflected in the measured characteristics or effective prices of the goods and services exchanged or in measures of real output.³

Another controversy centers around the ability to measure Web use for e-commerce in the workplace. According to the Current Population Survey conducted by the U.S. Census Bureau in September 2001, 72.3 million individuals used a computer at work, accounting for 53.5% of total employment.⁴ A private market research firm estimated in August 2001 that 66% of U.S. workers have access to the Internet at work;⁵ and, according to a December study by the Nielsen/NetRatings research firm, half of all online purchases in the United States in November 2001

² Ibid., Government Statistics, section IIB.

³ Ibid.

⁴ "Computer and Internet Use at Work in 2001," *Monthly Labor Review*, Feb. 2003, p. 26.

⁵ Xylo Inc., "Internet Usage in the Workplace," press release, Aug. 21, 2001, at [<http://www.xylo.com/press/pr082101.htm>].

were done from the workplace.⁶ Companies are notoriously reluctant to place Web measurement software on their workers' computers.⁷ Privacy and the protection of proprietary business information would most likely have to be resolved before this could become a common measurement tool.

Government Estimates

Bureau of the Census

The Bureau of the Census initiated an aggressive program in 2000 to begin filling the e-commerce data gap. During the summer of 1999, the Census Bureau developed definitions and concepts to describe the digital economy, identifying three components: electronic business, electronic commerce, and e-business infrastructure. In order to begin measuring e-commerce, data were collected in four Census Bureau surveys: the Annual Survey of Manufacturers, the Annual Trade Survey, the Service Annual Survey, and the Annual Retail Trade Survey. In the fall 1999, the Bureau added two questions to its monthly retail trade survey of 8,000 retail firms: whether the firms were selling online, and if they reported affirmatively, what was the dollar volume of their e-commerce sales. The Bureau developed a new Internet site—U.S. Department of Commerce *E-Stats* [<http://www.census.gov/eos/www/ablut.html>], devoted to “measuring the electronic economy” with data reports, information on statistical methodology, related data program links, and e-commerce contacts.

Statistics. In March 2001, *E-Commerce 1999* was posted to the E-Stats site, providing the first official data on e-commerce activity for key sectors of the U.S. economy. In March 2002, an E-Stats analytic report, *Detailed Tabulations of Manufacturing E-Business Process Use in 2000*,⁸ presented tabulations of responses by more than 38,000 manufacturing plants to 39 detailed questions about e-business process use at their plants. In March 2003, an E-Stats analytic report, *E-Commerce 2001*, provided an official snapshot of e-commerce for key sectors of the economy (manufacturing, merchant wholesalers, retail trade, and service industries).⁹

The first official retail e-commerce estimates were released on March 2, 2000, covering the fourth quarter 1999. This retail sales report provides a tally of retail

⁶ Nielsen//Net-Ratings, “Nielsen/Net Ratings Announces Top E-Tailers, Led by Amazon.com,” press release, Dec. 19, 2001, at [http://www.nielsen-netratings.com/2001_Holiday/holiday_release.jsp].

⁷ Mike O’Leary, “Web Measurers Wrestle with Methodologies, Each Other,” *Online*, May/June 1999, p. 106.

⁸ U.S. Census Bureau, *Detailed Tabulations of Manufacturing E-Business Process Use in 2000*, Mar. 1, 2002, [<http://www.census.gov/eos/www/papers/finalv7text.pdf>]. The tabulated responses are compiled in the *Manufacturing 1999 and Mid-2000: Appendix: Comparing Respondents to the Computer Network Use Supplement to the Manufacturing Population*, [<http://www.census.gov/eos/www/papers/appendixfinal.pdf>].

⁹ U.S. Department of Commerce, “E-Commerce 2001 Highlights,” *E-Stats*, Mar. 2003, [<http://www.census.gov/eos/www/papers/2001/2001estatstext.pdf>].

sales of goods and services where an order is placed by the buyer or where price and terms of sale are negotiated over an Internet, extranet, Electronic Data Interchange (EDI) network, electronic mail, or other online system. The data is collected monthly but published in quarterly estimates. (The most recent retail e-commerce sales figures are available at [<http://www.census.gov/mrts/www/current.html>]).¹⁰

In May 2003, the Census Bureau released U.S. retail e-commerce sales figures for the fourth quarter of 2002.¹¹ U.S. retail sales over the Internet grew by 25.9% in the first quarter of 2003 compared with the same quarter a year earlier, rising to \$11.9 billion. The gain was the smallest year-over-year increase since the 23.5% gain in the second quarter of 2002, according to the Commerce Department's quarterly report on sales of goods and services over the Internet or other electronic networks or by e-mail. Payment does not have to be made online for the transaction to be counted. Unlike most economic indicators released by Commerce, the data are not adjusted for seasonal or holiday-related variations, a limitation that sharply restricts their usefulness to analysts. Total e-commerce sales for 2002 were estimated at \$45.6 billion, an increase of 26.9% from 2001. E-commerce sales in 2002 accounted for 1.4% of total sales; e-commerce sales in 2001 accounted for 1.1% of total sales. This retail e-commerce sales report provides a simple tally of retail sales of goods and services where an order is placed by the buyer or where price and terms of sale are negotiated over an Internet, extranet, Electronic Data Interchange (EDI) network, electronic mail, or other online system.

One analyst concludes, "That is a far cry from the monthly retail reports released by the Census Bureau, which break down [conventional] sales totals of traditional retailers by categories like shoes, liquor, and furniture."¹² Census Bureau officials hope to achieve a similar level of detail with e-commerce reports, but they must overcome obstacles which have slowed the effort.

First is the issue of how to categorize retailers who appear, disappear, or change their products with dizzying regularity. For instance, Lee Price, chief economist for the Economics and Statistics Administration, was quoted as saying, "It's not just a question of taxonomy. It's one of evolving taxonomy. Amazon used to just sell books. Now they sell a much more varied selection. You have to figure out how to

¹⁰ Thomas Mesenbourg, *Measuring Electronic Business* (Washington: U.S. Bureau of the Census, 2001), [<http://www.census.gov/eos/www/papers/ebusasa.pdf>].

¹¹ U.S. Bureau of the Census, "Estimated Quarterly U.S. Retail E-commerce Sales: 4th Quarter 1999 - 1st Quarter 2003, Census Bureau Reports," press release, May 23, 2003, [<http://www.census.gov/mrts/www/current.html>].

Note: The retail e-commerce data in this report are based on a new sample of retailers that uses the North American Industry Classification System (NAICS) in place of the Standard Industry Classification (SIC) system. The retail e-commerce sales prior to first quarter 2001 were restated on a NAICS basis beginning with fourth quarter 1999.

¹² Bob Tedeschi, "Government Figures Will Shed Little Light on Holiday Online Sales." *New York Times Cybertimes*, Jan. 10, 2000, [<http://www.nytimes.com/library/tech/00/01/cyber/commerce/10commerce.html>].

capture that.”¹³ Also, businesses are still developing interactions between brick-and-mortar establishments and their e-commerce equivalents (for example, Wal-Mart’s physical stores compete with its Internet presence).

Second, participation in the Monthly Retail Trade Survey is voluntary for e-businesses. The Census Bureau derived the initial fourth quarter 1999 e-commerce data from questions asked in its monthly retailing survey, which was sent to approximately 11,000 retail firms. Of that total, 7,500 companies responded—2,000 of which indicated they were involved with Internet retailing. As in all sampling surveys, analysts must weigh the data from those who did not respond, just as they weigh the results of those who responded. In contrast, the Annual Retail Trade (ART) survey *requires* participation by businesses. The 2001 ART data provides the first comparable annual survey and will become the baseline for future quarterly data, according to the Bureau.¹⁴

(It is important to note that the Census Bureau is measuring the overall “electronic economy” with its E-Stats program, not simply retail sales.)

Industry analysts and executives are hopeful that Census Bureau figures will provide more reliable information than is now available. This will be important for seeing long-term trends, but the data will not provide immediate data on Internet sales. Jack Staff, chief economist with Zona Research, has stated “It’ll take at least three years for the government data to be highly usable. But there’s a whole segment of the Internet industry that’s devoted to the numbers, and it’ll be fundamentally changed once better numbers come along. And that’s as it should be.”¹⁵

Bureau of Economic Analysis

The Bureau of Economic Analysis (BEA), within the U.S. Department of Commerce, is also involved with measuring the “new economy,” which it defines as the impact of technological innovation over the last several decades, including electronic commerce. Among the questions BEA is considering are:

- Is e-commerce real, or is it an illusion of measurement?
- Does it represent a fundamental and lasting change in the structure of the economy, or is it the result of a number of temporary phenomena?
- Can it be accurately measured?¹⁶

¹³ Ibid.

¹⁴ U.S. Bureau of the Census, *Annual Benchmark Report for Retail Trade and Food Services: January 1992 Through March 2003*, 2003, at [<http://www.census.gov/mrts/www/data/pdf/annpub02.pdf>].

¹⁵ Ibid.

¹⁶ J. Steven Landefeld and Barbara M. Fraumeni, “Measuring the New Economy,” *Survey of Current Business*, Mar. 2001, pp. 23-40, at

The answers to these questions are important because if e-commerce is real, structural, and likely to last, then there are major implications for tax and spending projections, technology policy, and understanding of long-term growth and productivity. Conversely, if the new economy is not real and is not likely to last, there are major implications for federal budget projections.

The BEA concludes that the Census Bureau's estimates provide important insight into various aspects of the new economy, but a comprehensive examination of the major issues requires further information on the overall volume of e-business, as well as its impact on GDP, across products, industries, and regions, and on incomes and prices.¹⁷ BEA is proposing a comprehensive measure of e-business and high-tech that would measure the new economy in a comprehensive and consistent fashion. However, without such measures, researchers have attempted to measure the impact of the new economy using existing BEA estimates—mainly information from BEA's national income and product account (NIPA) estimates, its wealth accounts, its international transactions accounts, and its input-output data (I-O) and GDP-by-industry accounts.

Economics and Statistics Administration

In February 2002, the Economics and Statistics Administration of the U.S. Department of Commerce released *Digital Economy 2002*, its fourth annual report on the impact of information technology on the structure and performance of the U.S. economy.¹⁸ Among other findings, the report concluded that while early observers thought online versions of businesses would replace their real-world “bricks and mortar” counterparts, nothing approaching this degree of transformation has occurred. “However, despite the large number of dot .com closures that occurred in 2001, this type of business is not in danger of disappearing. [B]usinesses of all types are still increasing their use of IT [Internet technology] and the Internet.”¹⁹

International

Despite widespread use of the term “international electronic commerce,” the phrase has no commonly accepted definition. Different institutions use the term “electronic commerce” to describe different things. For example, some definitions imply use of the Internet, while others define electronic commerce more broadly to include transactions that involve devices such as facsimile (fax) machines, telephones, and computer-based systems. However, for measurement purposes, there

¹⁶ (...continued)

[<http://www.bea.doc.gov/bea/papers/beawide/2001/0301mne.pdf>].

¹⁷ Ibid., p. 26.

¹⁸ U.S. Department of Commerce, Economics and Statistics Administration, *Digital Economy 2002*, Feb. 2002, at [<http://www.esa.doc.gov/DigitalEconomy2002.cfm>].

¹⁹ Ibid., chap. 2, The Evolving Online Environment, at [http://www.esa.doc.gov/pdf/DE2002_CH2.pdf].

is general agreement that the online commitment to sell a good or service is necessary for any transaction to be categorized as electronic commerce.²⁰

International e-commerce, as a subset of total e-commerce, generally involves an online commitment to import or export goods and services. The U.S. government does not produce an official statistic for the value of international e-commerce. Current government statistics for e-commerce, drawn only from selected business sectors (manufacturing, merchant wholesale trade, selected services, and retail trade), do not distinguish between domestic and international electronic commerce. Similarly, although statistics on international trade in goods and services cover many major types of international electronic commerce transactions, these statistics do not distinguish between electronic and traditional types of transactions.

Different interests in the United States, including consumer groups, businesses, and various FTC commissioners, have debated the need for more comprehensive legislation to facilitate consumer use of international electronic commerce. These efforts involve such issues as coordinating consumer protection measures internationally, protecting data privacy, ensuring the security of financial information, and settling concerns about existing payment mechanisms.

To coordinate consumer protection policies, the Federal Trade Commission and the Department of Commerce collaborate with the other 30 member countries of the OECD in the Committee for Consumer Policy. In 1999, the OECD adopted international guidelines for consumer protection. According to the guidelines, online shoppers should be afforded protection that is not less than the protection afforded offline. Although not legally binding, the guidelines provide a blueprint for governments, the private sector, and consumers about fair business practices online. The United States also has addressed coordination of international consumer protection through the Asia-Pacific Economic Cooperation forum. This group of 21 economies from the Pacific Rim area, including Australia, China, Japan, and the United States, provides a forum for sharing information on government policies and is also currently developing a set of voluntary consumer protection principles.²¹

Finally, while the Internet facilitates e-commerce across national boundaries, some steps in an electronic transaction still face physical or legal barriers at the frontier. Ongoing trade negotiations are addressing barriers to the efficiency of conducting business and consumer transactions in Internet services, information technology products, express shipments, and other components of international electronic commerce.²²

²⁰ U.S. General Accounting Office, *International Electronic Commerce: Definitions and Policy Implications*, Mar. 2002, at [<http://www.gao.gov/new.items/d02404.pdf>].

²¹ *Ibid.*, pp. 28, 29.

²² *Ibid.*, pp. 2, 3.

Electronic commerce accounts for an even smaller percentage of retail sales in Europe than in the United States.²³ This low level of penetration reflects the fact that a limited number of consumers are using the Internet for commercial purposes. OECD research shows that e-commerce is unevenly developed in the OECD countries. Especially notable is the difference between North America and northern Europe on the one hand, and the rest of the OECD countries on the other.

Consulting and Research Firm Estimates

More and more businesses have decided that the Internet is the key to success and are aware of their acute need for e-commerce guidance. With increasing frequency, e-commerce research firms declare that they have all the answers for e-commerce strategies. As a 1999 *Fortune* article states, “No one knows how much real insight online consulting firms provide, but what would-be Internet player can afford not to subscribe? Planning for the future is hard in a mature industry; it’s nearly impossible in one still teething.”²⁴

Web traffic measurement may seem tedious, but with the number of dollars at stake, it is essential to businesses. For instance, advertisers, with large budgets, are very interested in knowing how many eyes, and whose, are viewing their ads. More bricks-and-mortar companies are advertising online than ever before.²⁵ During the first quarter of 2000, only 48 of the top 100 online advertisers were businesses operating on the traditional model. Those 100 advertisers made up 62% of all online spending, meaning that a large bulk of online ad dollars was coming solely from dot-com companies. During the fourth quarter of 2002, 71 of the top 100 online advertisers were traditional business model companies, and those 100 made up 67% of online advertising. Broken out by industry, the rate of traditional advertising is still high in all industries except entertainment and Web media.²⁶

New business activity has emerged to fill the need to gather e-commerce statistics: gathering and selling strategic and statistical information about the Internet. Internet organizations, such as the Internet Society and the International Telecommunications Union, have begun to compile information on the size and growth of the Internet. Ideally, e-commerce growth and demographics can be calculated from these organizations’ estimates of the total Internet “universe.” Private consulting firms and research and polling firms such as Nielsen and Gallup have also entered the field, along with firms such as Forrester Research, Gartner Group, ComScore Media Metrix, eMarketer, International Data Corporation (IDC),

²³ Ibid., pp. 84, 85

²⁴ Daniel Roth, “My, What Big Internet Numbers You Have!” *Fortune*, Mar. 15, 1999, pp. 114-120.

²⁵ Nielsen//Net Ratings, *The State of Online Advertising: Data Covering the Fourth Quarter, 2002*, Feb. 3, 2003, at [\[http://www.adrelevance.com/intelligence/intel_report_030210.pdf\]](http://www.adrelevance.com/intelligence/intel_report_030210.pdf).

²⁶ Ibid., pp. 5, 6.

and Nielsen/Net Ratings, which provide estimates of the impact of the Internet on consumers and business.

There is much debate over which Web measurement company's methods are more accurate. The research firms disagree among themselves about sampling methods and panel selection, since differing methods of identifying and soliciting the survey participants result in different data interpretations.

Forrester Research in Cambridge, MA, and Jupiter Research in New York City are two of the largest Internet research firms. They are so-called syndicated research firms, which means that they publish a wide range of reports with high subscription fees to a small, targeted audience of corporate executives. For example, for approximately \$20,000, a company can buy a subscription for one of eight industry sector guides from Jupiter Communications. Then every month for a year, it receives a 32-page report filled with analysis and advice, survey data, and industry forecasts, all on the impact of e-commerce in a particular field.

To compile their information, these firms' analysts interview advertisers and executives at top Web sites, review annual reports, adjust overly-optimistic figures, assemble historical research comparing ad spending with consumer research, and estimate spending for online advertising. As Forrester's chief Internet advertising analyst says, "The interesting thing about projections is that they come out looking very exact. But really, it's just your opinion expressed numerically."²⁷ Although research firms such as Forrester and Jupiter attempt to make methodical projections, the results are often imprecise.

One observer says the models used by Forrester or Jupiter "have little resemblance to statistical techniques, like regression analysis or time-series analysis, used by traditional market researchers or industrial forecasters to determine next year's worldwide consumption of, say, gasoline or Coca-Cola. That, of course, is because enterprises that forecast the consumption of resources or consumer items can draw on decades of historical data."²⁸ Only recently has the federal government become involved in measuring the "new economy." Frequently issued statistical reports based on data from the Department of Commerce and Census Bureau surveys are enabling businesses to measure e-commerce's value on a national and international scale.²⁹

²⁷ Roth, "... Internet Numbers ...," p. 120.

²⁸ Jim Frederick, "\$6 Billion on Online Holiday Sales by the End of This Month! \$24 billion in Internet Ads by 2003! 2.3 Trillion E-biz Predictions by 2010!" *New York Times Magazine*, Dec. 19, 1999, pp. 70-73.

²⁹ The Bureau of the Census *E-Stats* site provides official federal data and estimates to measure the electronic economy, see [<http://www.census.gov/eos/www/ebusiness614.htm>].

Recent E-Commerce Statistics

With all the caveats discussed above, following is a sampling of estimates of the size and growth of e-commerce. (For a list of Web sites for e-commerce statistics, see Selected Web Addresses for Internet and E-Commerce Statistics, below.)

- Online retailers broke even in 2002, according to new data from Shop.org, the Internet merchant trade association. The association says that e-tailers generated \$76 billion in sales for 2002, and for the first time as an industry avoided losing money. As a group, Web merchants with pre-existing catalog operations had the biggest operating margins—22% last year, up from 6% in 2001. Traditional retailers' online units were profitable for the first time in 2002, with average operating margins of 7%. Online-only retailers, though, are still operating in the red, according to Shop.org. Only half reported positive operating margins, and overall losses averaged 16%, up 3% from 2001.³⁰
- The Internet Fraud Complaint Center (IFCC) reports that Internet fraud complaints that included some form of monetary loss totaled \$54 million in 2002—more than tripling from the \$17 million reported in 2001. The organization found that 46.1% of Internet fraud complaints related to auctions, while 31.3% related to the nondelivery of merchandise or payment issues.³¹
- The number of Americans buying online will surpass 100 million this year, according to a report by the research firm eMarketer. In its new *North America E-Commerce: B2B & B2C*, eMarketer forecasts that total business-to-consumer (B2C) e-commerce spending will top \$90.1 billion in 2002 and will surpass \$133 billion in 2005. Key findings from the report include: the average annual amount spent online among U.S. Internet users ages 14 and above will be \$717 in 2003; and 58.3% of Internet users ages 14 and above will purchase goods and services online in 2003, totaling 81.2 million users.³²
- According to the United Nations Conference on Trade and Development report, *E-Commerce and Development Report 2002*, developing countries accounted for almost one-third of new Internet users worldwide in 2001. Worldwide e-commerce estimates range from \$1.5 billion to \$3.8 billion in 2003. In one of the most

³⁰ Bob Tedeschi, "E-tailers Broke Even Last Year," *New York Times*, May 19, 2003, at [<http://www.nytimes.com/2003/05/19/technology/19ECOM.html>].

³¹ Internet Fraud Complaint Center, "Internet Fraud Complaint Center Referred More Than 48,000 Fraud Complaints to Law Enforcement in 2002," press release, Apr. 9, 2003, at [<http://www1.ifccfbi.gov/strategy/wn030409.asp>].

³² eMarketer, "U.S. B2C E-Commerce Tops \$90B This Year," press release, May 1, 2002, at [<http://www.emarketer.com/news/article.php?1002209>].

optimistic forecasts, e-commerce would represent about 18% of worldwide business-to-business and retail transactions in 2006.³³

- The Economist Intelligence Unit (EIU), a division of *The Economist*, together with its specialist communications and Internet division, Pyramid Research, compiled international “e-readiness rankings.” The EIU scored the 60 largest economies on “e-readiness,” which it defines as “the extent to which a country’s business environment is conducive to Internet-based commercial opportunities. It is a concept that spans a wide range of factors, from the sophistication of the telecommunications infrastructure to the security of credit-card transactions and the literacy of the population.”³⁴

Selected Web Addresses for E-Commerce Statistics

U.S. Government

U.S. Department of Commerce. Quarterly Retail E-Commerce Sales. [<http://www.census.gov/mrts/www/current.html>] has the most recent press releases.

U.S. Department of Commerce . “E-Commerce 2001 Highlights.” *E-Stats*, March 2003 (official snapshot of e-commerce for key sectors of the economy). [<http://www.census.gov/eos/www/papers/2001/2001estatstext.pdf>]

U.S. Department of Commerce. *Digital Economy 2002*. February 2002. [<http://www.esa.doc.gov/DigitalEconomy2002.cfm>]

International

United Nations Conference on Trade and Development. *E-Commerce and Development Report 2002*. [<http://www.unctad.org/Templates/webflyer.asp?docid=2923&intItemID=1397&lang=1&mode=highlights>]

Academic

Center for E-Commerce (Stanford Program in Law, Science, and Technology) [<http://lawtech.stanford.edu/ecommerce/>]

Center for Research in Electronic Commerce (University of Texas, Austin) [<http://cism.bus.utexas.edu/>]

³³ United Nations Conference on Trade and Development, *E-Commerce and Development Report 2002*, 272 p. For highlights see [<http://www.unctad.org/Templates/webflyer.asp?docid=2923&intItemID=1397&lang=1&mode=highlights>].

³⁴ “The Economist Intelligence Unit / Pyramid Research E-Readiness Rankings,” *The Economist*, May 8, 2001, [http://www.ebusinessforum.com/index.asp?layout=printer_friendly&doc_id=367].

Guide to E-Commerce (School of Industrial and Labor Relations, Cornell University)
[<http://www.ilr.cornell.edu/library/reference/guides/ecommerce/>]

Measuring the Internet Economy, January 2001 (University of Texas and Cisco Systems)
[<http://www.internetindicators.com/>]

University of California E-economy Project
[<http://e-economy.berkeley.edu/>]

Private Research Firms

ComScore Media Metrix (formerly Media Metrix)
[<http://www.comscore.com/>]

eMarketer
[<http://www.emarketer.com/estatnews/>]

Forrester Research
[<http://www.forrester.com/home/0,6092,1-0,FF.html>]

Gartner Group (press releases)
[http://www4.gartner.com/5_about/press_releases/pr2003.jsp]

International Data Corporation (IDC)
[<http://www.idc.com/>]

Internet Economy Indicators
[<http://www.internetindicators.com/facts.html>]

Nielsen/Net Ratings
[<http://www.nielsen-netratings.com/>]