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Electronic Commerce

Andrew D. Mitchell

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Electronic Commerce

'Electronic commerce' or 'e-commerce' has no settled definition. At its broadest, electronic commerce involves conducting business using most modern communication instruments: telephone, fax, television, electronic payment and money transfer systems, Electronic Data Interchange and the Internet. The WTO General Council on 25 September 1998 adopted a broad view of electronic commerce in its work program on the subject: 'the production, distribution, marketing, sale or delivery of goods and services by electronic means.' In more recent times, the term e-commerce has become strongly associated with commercial activities on the Internet. For instance, the Organization for Economic Cooperation and Development's discussions of e-commerce concentrate almost exclusively on Internet-based transactions.

In this article, electronic commerce is conceived of as conducting or facilitating business via electronic communications networks and computer systems. This includes buying and selling online, electronic funds transfer, business communications (including by telephone, facsimile and internal data networks), and using computers to access business information resources. The WTO has recognized that commercial transactions can be broken into three stages: (1) advertising and searching, (2) ordering and payment, and (3) delivery. Common conceptions of electronic commerce involve business-to-consumer or business-to-business interaction at one or more of these three stages. Generally speaking, however, electronic commerce also encompasses activities that do not fit neatly into any one of these categories, such as electronic logistics tracking and business process outsourcing.

The Internet is of such critical importance to the world economy today that it necessarily dominates any discussion of electronic commerce. It offers greater possibilities for commercial interaction than do telephones or faxes, and has dramatically changed the way that information is exchanged and business conducted. The definition of electronic commerce adopted here deliberately extends beyond the Internet, however, not only to capture its predecessors, but also in anticipation of future technologies. If we have learned anything from the rapid development of computer and telecommunications technology over the last few decades, it is that what seems like an established technology today can quickly be replaced by another technology. The safest prediction about the future direction of technology is that it will be unexpected. Thus, as ubiquitous and permanent a feature of modern life as the Internet seems now, it may be replaced, and it is therefore appropriate to use a definition that is technologically neutral and forward-looking.

The Economic Significance of Electronic Commerce

Three factors contribute to the significance of electronic commerce to the world economy today: the rapid growth of the Internet, its ability to facilitate cross-border trade, and its ability to reduce transaction costs.

Although it became publicly accessible only with the inception of the World Wide Web in 1990, the Internet now has more than 1 billion users. In the early years of the World Wide Web, usage almost doubled from year to year, and it continues to grow. The benefit of conducting business online increases exponentially with the number of connections.

The Internet facilitates production and distribution across borders so that, for example, consumers in one country can respond to an advertisement published in another country

for a product that was developed using a design team collaborating (using the Internet) in five other countries. Electronic commerce increases the range of services that can be traded internationally (e.g., medical, legal, educational and gambling services) and can assist in opening markets that were previously closed. The dramatic increases in both online retail sales and advertising revenues are the most visible evidence of a much broader growth in electronic commerce in the global economy.

Electronic commerce has the potential to generate benefits beyond those of trade liberalization on its own. Benefits for suppliers and vendors include reduced transaction costs, reduced barriers to market entry, more rapid product innovations, and economies of scale. One source of reduced transaction costs is the possibility to dispense with traditional intermediaries (for example in relation to the travel industry). In many cases, electronic commerce dispenses with the need for physical presence at the point of sale or for the provision of services, which can drastically reduce expenses relating to premises or personnel. Benefits for consumers include increased market transparency and reduced search costs, even if they make the final purchase in person. These benefits are particularly noticeable for consumers in smaller markets, who may not have enjoyed the same level of price and quality competition as consumers in larger markets. Challenges to increased consumer use of electronic commerce include concerns about information privacy and fraud, which have not been completely resolved. Governments also benefit from electronic commerce because it reduces the cost of providing services to their citizens, while offering greater transparency and accountability.

These three factors have certainly altered the conditions in many preexisting markets for goods and services, but two markets are particularly useful in demonstrating these factors.

First, consumer-to-consumer commercial transactions, facilitated by accessible online financial services, community and auction sites, now have the potential to operate on a global, cross-border level. It is difficult to draw a bright line between consumer-to-consumer and business-to-consumer transactions, as the removal of many barriers to entry have allowed some consumers to play a role that was once available only to established global players. This reveals one reason for the exponential benefit of growth in the Internet's user base: unlike previous communications technologies, which facilitated one-to-one or one-to-many marketing and sales, Internet-based e-commerce allows a many-to-many business paradigm to become practicable.

Second, the market for digital products and services, (those that can be supplied to the purchaser electronically), is arguably the most substantially affected by the growth of electronic commerce. Once they are provided in a digital format, goods such as music, movies, and software have negligible production costs for additional units and equally negligible delivery costs. Over the Internet, their delivery time is limited primarily by bandwidth and connection speed rather than distance or the speed of physical transport. Services that can now be provided digitally across borders are increasingly being outsourced to take advantage of cheaper labor markets. This phenomenon, called business process outsourcing, began in its modern incarnation with the outsourcing of software development to India. India remains the market leader in business process outsourcing exports today and has moved into many other areas such as sales and customer service call centers as well as intra-business services, for example information technology support and human resources. Other developing countries, such as Brazil and China, have also experienced strong growth in this area. As the uptake and speed of Internet connections increase, the sale of digital

products and services is likely to have a substantial impact on the world economy, not only in its own right, but also due to its disruptive effects on related 'offline' industries.

Conversely, many factors militate against electronic commerce completely replacing traditional non-electronic business models. Thus, despite its growth, the uptake of electronic commerce was slower than many expected. As mentioned earlier, the security of online payment and information transfer remains a primary concern. The market for digital products is especially affected by the lack of cost-effective micropayment methods (i.e., for low value transactions). Additionally, due in part to the threat of fraud, or possibly more for sociological than economic reasons, many consumers and businesses prefer physical presence over electronic transactions, especially to conduct a physical inspection of goods before purchase. This has led to the perception that online retailers 'freeload' off retailers with physical stock and showrooms, as customers can investigate the product in person in a retail store and then purchase it from an online store at a reduced price. Some manufacturers and suppliers refuse to sell to online retailers in order to protect their existing showroom-based retail outlets. Furthermore, although the growth of the Internet has been substantial, many use the Internet for recreational and communication purposes rather than commercial ones, and a majority of the world's population is still without regular Internet access.

Nevertheless, as electronic commerce matures and develops, it will undoubtedly play an increasingly important role in the world economy. Many of the impediments that it is presently facing are technological in nature and, given the speed at which new developments occur in information technology, it is only a matter of time before many of them are overcome.

The Role of the WTO

Although electronic commerce involves new technology, at its heart, it is simply another means of conducting international commercial transactions. Most countries have previously decided that such transactions should be dealt with in the WTO. The advantage of locating electronic commerce within the WTO framework is that it provides a system of transparent, predictable and enforceable rules. These rules are based on principles of non-discrimination (most-favored-nation treatment (MFN) and national treatment) and transparency, which are as relevant to electronic commerce as they are to other forms of international trade. The WTO also has an established record of trade liberalization and takes an economic and commercial focus. This means that it is not particularly concerned with technology matters; rather it is intent on creating a system of trade agreements that apply to transactions regardless of the form of technology used to produce or deliver the product. Many WTO Members share this belief in the principle of technological neutrality. It is important to scrutinize deviations from neutrality, for example those resulting from the goods and services distinction created by the General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS). Technological neutrality should not be used as an excuse for protectionism, however. The primary purpose of the WTO remains trade liberalization. Thus, for example, practices that liberalize trade in a good only where it has been created using a certain technology (i.e. technologically discriminatory liberalism) should be preferred to practices that create or maintain barriers to trade in that good however created (i.e. technologically neutral protectionism).

On May 20, 1998, during its second Ministerial Conference in Geneva, the WTO adopted a Declaration on Global Electronic Commerce, recognizing the growth of electronic commerce

and its potential to increase international trade. The declaration directed the General Council to establish a comprehensive work program to examine all trade-related issues of global electronic commerce and to produce a report on the progress of the work program and any recommendations for action at the third Ministerial Conference of the WTO. The Council for Trade in Goods, the Council for the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), the Committee on Trade and Development, and the Council for Trade in Services each produced a report for the General Council in July 1999. The general view of Members emerging from these and subsequent reports is that the electronic delivery of services falls within the scope of GATS, and that all the provisions of GATS apply to trade in services through electronic means. Members have not reached a consensus on issues such as the treatment of certain digitizable products, however, and work continues on resolving these issues. The General Council has held a number of dedicated discussions on 'cross-cutting' e-commerce issues, in recognition of the fact that many e-commerce problems cut across a number of WTO agreements such as the GATS, GATT and TRIPS. These discussions have covered topics such as the classification of digital products and the fiscal implications of e-commerce. The Councils for Trade in Goods, Trade in Services and TRIPS as well as the Committee on Trade and Development have also held discussions on e-commerce issues relating to their respective mandates.

The general view of WTO Members that GATS applies to electronic delivery of services and trade in services through electronic means is consistent with the prevailing academic view that electronic commerce, for the most part, falls under the purview of GATS. Many WTO Members have expressed the view that all digital products should be classified as services so as to fall under GATS. GATS extends the scope of international trade obligations to cover

services, which represent a significant and growing proportion of global trade. It imposes general principles of MFN treatment and transparency to services (subject to some exceptions), and it also provides for individual commitments by Members to liberalization of trade in services, including commitments to provide market access and national treatment in specified service sectors.

Once WTO Members agree on how to handle electronic commerce, WTO agreements and dispute settlement have the potential to profoundly aid or curtail the growth and impact of e-commerce, especially as regards cross-border trade. Other international bodies will also have an effect on the future development of e-commerce, for instance the United Nations Working Group on Internet Governance. The proven effectiveness of the WTO in securing a degree of multilateral compliance with its international trade standards, however, makes it a key player in the regulation of electronic commerce.

Trends in electronic commerce

A number of trends are evident in relation to electronic commerce that will affect the world economy. First, the value and number of digital products (e.g. music, books and videos delivered electronically rather than physically) is likely to continue to increase. Second, communications technologies are gradually converging. If this trend continues, previously separate technologies such as the telephone, television and the Internet may eventually be considered part of a single communications network. This would result in traditional media companies (such as television broadcasters) being compelled to shift to a more interactive, Internet-based model, and online vendors would benefit from greater reach to mobile and entertainment devices. Third, the Internet is continuing to affect consumer behavior. For example, consumers are spending more time and money online, and the value of their

online purchases is increasing as they gain experience with online shopping and move to higher speed Internet. Fourth, transactions using notes and coins will continue to decline in favor of transactions using digital money. (Notes and coins make up only a small fraction of the total value of economic transactions, but they still comprise a significant proportion of the number of transactions.) Fifth, the growth in the business process outsourcing market has the potential to alter materially the structures and costs associated with many conventional businesses. Outsourcing specialized tasks to low-cost providers is becoming increasingly feasible, if not necessary to compete on a global scale. This service, provided mainly by developing countries with cheaper labor, also has the potential to aid in integrating such countries into the global trading system.

The Role of Electronic Commerce in the Modern World Economy

Electronic commerce will continue to play a significant role in the modern world economy in the coming years. Its potential will be limited, however, in the absence of a comprehensive understanding within the WTO or some other multilateral framework regarding how to treat international trade conducted using electronic commerce. So, too, may technological and regulatory limitations regarding issues such as privacy, financial security and fraud hinder the development of electronic commerce beyond the level it has reached today. Experience with previous technologies and negotiations suggested that these hurdles will be overcome, however, particularly to the benefit of developing countries.

See also: Digital Divide, General Agreement on Tariffs and Trade, General Agreement on Trade in Services, Information and Communication Technology, Trade in Services, World Trade Organization.

Further Reading

Borenstein, Severin, and Garth Saloner. 2001. "Economics and Electronic Commerce" *Journal of Economic Perspectives* 15(1): 3–12. An effective introduction to many of the economic issues surrounding electronic commerce and to a symposium on economics and electronic commerce.

Mann, Catherine, and Sue Eckert and Sarah Knight. 2000. *Global Electronic Commerce: A Policy Primer*. Washington, DC: Institute for International Economics. Aimed at assisting policy makers, particularly those in developing countries, with formulating an appropriate response to e-commerce and to use it to facilitate development.

Wunsch-Vincent, Sacha. 2006. *The WTO, The Internet and Trade in Digital Products: EC-US Perspectives*. Oxford: Hart Publishing. A neutral and thorough reference work examining European Community and U.S. perspectives on digital products (that is, digitally-delivered movies, music and software), and the response of international trade rules, in particular those of the WTO.

UN Information and Communication Task Force. 2005. *WTO, E-Commerce, and Information Technologies: From the Uruguay Round through the Doha Development Agenda* (Series 7). Prepared by Sacha Wunsch-Vincent for the United Nations Information and Communication Task Force, this paper provides a comprehensive analysis of the WTO's engagement with e-commerce as well as some useful research into key areas of electronic commerce.

Working Party on the Information Economy, Organisation for Economic Co-operation and Development, *Online Payment Systems for E-Commerce*, OECD Doc

DSTI/ICCP/IE(2004)18/FINAL (18 April 2006). Analyses the recent development of online payment systems for e-commerce, covering different payment mechanisms, the extent to which these different systems are used and the implications of industry characteristics and network effects. It discusses drivers and impediments to the uptake of payment systems and identifies some policy issues for further examination.

World Trade Organization Secretariat, *Electronic Commerce and the Role of the WTO* (1998).

Lays out the relevant policy issues for electronic commerce and the WTO, including the legal and regulatory framework for Internet transactions, security and privacy questions, taxation, access to the Internet, market access for suppliers over the Internet, trade facilitation, public procurement, intellectual property questions, and regulation of content.

Dr Andrew D Mitchell
Melbourne Law School, The University of Melbourne