

Chapter 1: INTRODUCTION

1.1. Definition of electronic commerce and overview of how it operates

This thesis is concerned with the impact of electronic commerce on international tax laws, specifically source-based taxation. Before looking specifically at the arguments and propositions to be advanced by the thesis, it is both instructive and necessary to begin with a discussion of what is meant by 'electronic commerce'. Discussions relating to the electronic commerce normally begin with a pronouncement that it represents a fundamental and revolutionary development in communications that is likely to dramatically change the way business is conducted.¹ This is usually followed by highly variable, speculative and often mind-numbing estimates of the expected growth of the Internet. In this regard, Doernberg *et al* have noted that providing figures to document the growth of the Internet and electronic commerce is simply stating the obvious – their summation that '[e]lectronic commerce is here; it is growing; and it poses new questions for all aspects of society'² is arguably all that can be usefully said regarding the present state of electronic commerce.

Much of the variance in the estimates of the predicted growth of the Internet and electronic commerce can be attributed to the lack of a universal definition of electronic commerce.³ Some definitions are very broad and seek to cover *any* commercial transaction that is effected via electronic means, including such means as facsimile, telex, electronic data interchange (EDI), the Internet, and the telephone.⁴ The Australian Taxation Office (ATO) on the other hand, has defined electronic commerce more narrowly as "the buying and selling of goods and services on the Internet."⁵ For the purposes of this thesis, a more focused definition will be adopted whereby electronic commerce will be taken to mean

¹ United States Department of Commerce, *The Emerging Digital Economy* (1998), <http://www.ecommerce.gov>, p. 4 (observing that the Internet's pace of adoption has eclipsed technologies that preceded it: "Radio was in existence 38 years before 50 million people tuned in; TV took 13 years to reach that benchmark. Sixteen years after the first PC kit came out, 50 million people were using one. Once it was opened to the general public, the Internet crossed that line in four years"). See also, Doernberg *et al.*, *Electronic Commerce and Multijurisdictional Taxation* (2001), p. 2 (noting that while some suggest that the Internet is just the latest technological advance and may therefore not signal a revolutionary advance, there are differences between the birth of the Internet and technologies that preceded it, as indicated by the rates of adoption referred to earlier in this footnote).

² Doernberg *et al.*, above note 1, pp. 2-3.

³ US Department of Commerce, *The Emerging Digital Economy II* (1999), <http://www.ecommerce.gov>, note 1, p. 2 ("Disparities among private estimates result from differences in definitions, methods, data, model and sampling error, and product coverage. Variations also reflect the research needs of customers. While data used for estimates and forecasts are based on a combination of surveys and interviews, the survey questions and answers are not made public, sample sizes vary considerably across surveys, and little information is available on the respondents").

⁴ Report of the Electronic Commerce Expert Group (ECEG) to the Attorney -General, "Electronic Commerce: Building the Legal Framework" (31 March 1998), <<http://www.law.gov.au/ahome/advisory/eceg/single.htm>> [1.21]; United States, Department of the Treasury, Office of Tax Policy, *Selected Tax Policy Implications of Global Electronic Commerce* (22 November 1996), <<http://www.ustreas.gov/taxpolicy/internet.html>> [3.2.1] ("US Treasury Report") ("Electronic commerce is the ability to perform transactions involving the exchange of goods and services between two or more parties using electronic tools and techniques").

⁵ Australian Taxation Office, Electronic Commerce Project Team, *Tax and the Internet – Volume 1* (1997), p. 12 ("First Australian Report").

commercial transactions involving the production, distribution, sale and delivery of goods and services that are carried out over open networks like the Internet.⁶

Though it is beyond the scope of this thesis to examine the history⁷ and operation⁸ of the Internet in detail, an examination of how electronic commerce may be conducted through the Internet is necessary in order to analyze the arguments that will be presented in relation to how electronic commerce may impact on existing international tax rules. A brief examination of how electronic commerce works will be presently undertaken, though a more detailed analysis of aspects of how electronic commerce operates will be deferred to applicable points of the analysis that will be undertaken in subsequent chapters.

Electronic commerce is conducted mainly through global computer networks. The architecture of the Internet, with its open, distributed network, system of packet switching and universal communications protocol has led to a worldwide network of networks, where the individuals and organizations that comprise it are independent from one another.⁹ There is no central, worldwide technical control point. Yet, by means of this system, a computer situated in one location can communicate with any other computer that is also connected to the network no matter where in the world it might be located, providing the illusion that all users are on the same network. The communication is made possible by the digitization¹⁰ of data, including text, sound and visual images, which are then transmitted around the world via the Internet.

A popular way of conducting business on the Internet is through a web site. Web sites are computer programs that reside on computers, known as servers, which are in turn connected to the Internet. These servers are commonly maintained by Internet Service Providers (ISPs) but this need not be the case as computer servers can sometimes be owned, operated and maintained by businesses directly. They possess Internet Protocol (IP) numbers, which are somewhat like

⁶ This definition includes elements of definitions provided by others, notably: OECD Policy Brief No. 1 (1997), http://www.oecd.org/publications/Pol_brief/9701_pol.htm, p. 1; Howard E Abrams and Richard L Doernberg, "How Electronic Commerce Works" (1997) 14 *Tax Notes International*, p. 1573.

⁷ The following sources of information provide an excellent analysis of the history of the Internet and the World Wide Web (WWW): Pierre J Bourgeois and Luc Blanchette, "The Internet, Electronic Commerce and Taxes – Some Reflections: Part 1" (1997) 45(5) *Canadian Tax Journal*, p. 1129; Michael A Geist, "The Reality of Bytes: Regulating Economic Activity in the Age of the Internet" (1998), p. 73 *Washington Law Review*, p. 526; Edward A Morse, "State Taxation of Internet Commerce: Something New Under the Sun?" (1997), 30 *Creighton Law Review*, p. 1118; Deloitte & Touche LLP and Information Technology Association of America ('ITAA'), *Taxation of Cyberspace* (2nd ed, 1998), p. 297.

⁸ A comprehensive description of how the Internet works may be found in Abrams and Doernberg, above note 6, p. 1573; Doernberg *et al*, above note 1, pp. 9-66.

⁹ Patrick Gallagher, "Case Study: A Practical Analysis of Electronic Commerce Revenue Flows" (paper presented at an International Tax Symposium organized by the Australian Taxation Studies Program (ATAX) of the University of New South Wales, Sydney, 17-18 March 1998), p. 58 (observing that the Internet is essentially a network of computer networks interconnected by means of telecommunication facilities using common protocols and standards that allow for the exchange of information between each connected computer).

¹⁰ Digitization is the process of converting information (including music, text, and speech) into a sequence of numbers. Once converted, the information can be sent at the speed of light throughout the world where a recipient can convert the information. Back into its original format or otherwise manipulate it: Richard Doernberg and Luc Hinnekens, *Electronic Commerce and International Taxation* (1999), p. 48.

telephone numbers, identifying devices attached to the Internet. Every device connected to the Internet has an IP number that allows communications to occur with other devices connected to the Internet. This is achieved by one computer dialling the IP number of the device or computer sought to be contacted. Specialized protocols are available enabling secure communications to occur between clients and servers when, for example, on-line payments involving the transmission of credit card details are made by a customer.

Electronic commerce activity can be classified as either business-to-business or business-to-consumer electronic commerce. In business-to-business electronic commerce, businesses commonly use the Internet to integrate the value-added chain that can extend from the supplier of raw materials to the final consumer.¹¹ Business-to-business electronic commerce dominates the total value of electronic commerce activity, accounting for about 80% at present,¹² though more recent estimates place this figure at closer to 75%.¹³ The predominance of business-to-business electronic commerce partly reflects the fact that electronic links between businesses are not new¹⁴ and the advantages of businesses adopting electronic commerce are relatively obvious.¹⁵

Although business-to-business electronic commerce represents the bulk of all electronic commerce, most attention has been directed on the business-to-consumer segment – that is, the retailing or ‘e-tailing’ segment as it has come to be known. And while much media attention has focused on on-line merchants selling books, wine and computers, an increasing majority of products that are marketed electronically to consumers are intangibles such as travel and ticketing services, software, entertainment (on-line games, music, gambling), banking, insurance and brokerage services, information services, legal services, real-estate services, and increasingly health-care, education and government services.¹⁶

Generally, electronic commerce conducted through the Internet consists of three parties, namely the ISP, the trader and the customer.¹⁷ The ISP will normally maintain a server located either in or outside the relevant country although bandwidth (capacity) restrictions may mean that local servers are necessary. A server fulfils the function of being a computer that physically hosts a Web site and which has access to the Internet. The Web site for a trader is in many ways similar to a mail-order catalogue, providing details about the trader, his or her

¹¹ OECD, *The Economic and Social Impact of Electronic Commerce: Preliminary Findings and Research Agenda* (1999) (“OECD Economic and Social Report”), p. 34.

¹² *Ibid.*, p. 36.

¹³ See e.g. *The eCommerce: B2C Report and The eCommerce: B2B Report*, <<http://www.emarketer.com/ereports/ecommerce>>, as cited in Doernberg *et al.*, above note 1, p. 6 (note 17).

¹⁴ Such electronic links have existed for decades, in the form of electronic data interchange (EDI) supplied by value-added networks (VANs) operated over leased telephone lines.

¹⁵ Including a reduction in transaction costs and improvement of product quality / customer service.

¹⁶ OECD Policy Brief No 1, above note 6, p. 2.

¹⁷ What follows is adapted from ‘Taxation of Internet Trading: A Survey of Tax Treatment in the United Kingdom, Ireland, Italy, Germany, Spain, The Netherlands and Sweden’ (1998) 25(2) *Tax Planning International Review*, p. 3.

products, and their prices. The ISP typically charges the trader a fee for hosting the Web site, usually at a flat rate or on a time basis.

A customer, after logging on to the Internet through their ISP, selects the Internet address of the trader, thereby accessing the trader's Web site. The customer acquires a product or service listed on this site generally by entering his or her credit card information on-line. A transaction can be completed wholly on the Internet (called "on-line" or "direct electronic commerce") with intangible products – for example, digital products such as music or software can both be purchased and delivered completely on-line through the Internet. However, with the purchase of tangible products, physical delivery is still necessary once the site registers the order on the merchant's sales system (this is referred to as "off-line" or "indirect electronic commerce"). Currently, advertising on Web sites (called banner advertisements) and the off-line sale of goods and services constitute the two major sources of Internet generated revenue in business-to-consumer transactions.¹⁸

Having defined electronic commerce and briefly examined how it operates, the next part of the chapter is directed at presenting the central arguments and propositions of the thesis, along with how the thesis is organized.

¹⁸ David L. Frost, "The Continuing Vitality of Source-Based Taxation in the Electronic Age" (1997), 15 *Tax Notes International*, p. 1455.