

Chapter 11

The Economic Impact of E-Commerce in Singapore

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ABSTRACT

The economic impact of e-commerce in Singapore is measured via three channels: (1) aggregate demand stimulative effect of capital investment, (2) the productivity effect resulting from capital investment, and (3) of the price and cost reduction effect associated with the productive use of e-commerce transactions. Using input-output technique pioneered by Nobel laureate W. Leontief, and econometric analysis, it finds that e-commerce in Singapore accounts for S\$35.5 billion of output (or sales revenue) and S\$7.9 billion of value-added in 2018. These are respectively equivalent to 2.8% of the nation gross output and 1.7% of the annual GDP. E-commerce has supported more than 68,500 jobs and stimulated the formation of about 758 new company formation in the year. The value-added contribution by e-commerce is projected to grow from S\$7.9 billion in 2018 to S\$10.1 billion in 2020 and further to S\$28.1 billion in 2030. As a percentage of GDP, e-commerce accounts for about 1.7% of GDP in 2018, and this proportion is expected to increase to 1.9% in 2020 and further to 3.5% in 2030.

INTRODUCTION

E-commerce is typically considered as a way of conducting business over the Internet. However, e-commerce is broader than this and it includes any form of electronic business transaction e.g. electronic data interchange (EDI). Though it is a relatively new concept, it has the potential to alter the traditional form of economic activities. Already it affects such large sectors as communications, finance and retail trade and holds promises in areas such as education, health and government. The largest effects may be associated not with many of the impacts that command the most attention (i.e. customized product, elimination of middlemen) but with less visible, but potentially more pervasive, effects on routine business activities (i.e. ordering office supplies, paying bills, estimating demand).

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The main objectives of this article is to evaluate and assess the contribution of e-commerce to the Singapore economy in terms of the output, value-added, employment and company formation (start-ups) in the economy. In addition, the size of the e-commerce contribution to the national output in the next 5 years is projected.

In the next section, with e-commerce defined, the chapter considers some salient feature of the network economies. The advent of e-commerce is noted to have spawned several new topic for research and investigation. The methodological framework used to quantify the impact and contribution of e-commerce is presented. Following that, the quantitative results pertaining to different categories of e-commerce differentiated by direct and indirect effects are tabulated and discussed. Projection of the value-added contribution of e-commerce for the year 2019 to 2030 is made using a logistic model. A final section summarizes the findings

LITERATURE REVIEW

Definition of e-Commerce

E-commerce refers to the trading of goods or services over computer networks such as the internet. In this study, e-commerce is taken to mean doing business electronically. More formally, e-commerce transactions, according to OECD (2011, pg. 172), are defined as ‘the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders...’. It is important to note, under this definition, that ‘the goods or services are ordered by these methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online’ (OECD, 2011, p. 72). This new definition is now used in data collection in most EU member countries. It includes orders placed on web pages, EDI and extranet, and excludes orders made by telephone, facsimile or manually typed e-mails. In addition, the term “computer network” is broadly defined to give the flexibility to accommodate future changes in how e-commerce is conducted.

Other than buying and selling, many people use Internet as a source of information to compare prices or look at the latest products on offer before making a purchase online or at a traditional store. E-business is sometimes used as another term for the same process. More often, though, it is used to define a broader process of how the Internet is changing the way companies do business, of the way they relate to their customers and suppliers, and of the way they think about such functions as marketing and logistics.

Other terms that are often used when talking about e-commerce are B2B and B2C, shorthand for business-to-business, where companies do business with each other, and business-to consumer (B2C), where companies do business with consumers using the Internet. These are considered main forms of e-commerce.

The Online Economy & Economics of Networks

The advent and spectacular growth of the Internet have spawned claims of a ‘new economy’ governed by a ‘new economics’. The Internet is a global network. Use of the Internet for commercial purposes, as in e-commerce is therefore subject to significant ‘network effects’ or demand side scale economies. Network effects are not new but they are endemic in the online economy (Shapiro, 1999b). As Shapiro

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