Chapter 18

Intelligent Transport Systems for Electronic Commerce - A Preliminary Discussion in the Australian Context

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Intelligent Transport Systems (ITS) refers to transportation systems which apply emerging hard and soft information systems technologies to enhance the overall performance of transport system, presenting a paradigm shift in transportation. Electronic commerce (e-commerce) with its ability to conduct business transactions through open networks and deliver products and services in a global market in which geographical boundaries and location lose their meaning, is creating a paradigm shift in commerce. Information and Communication Technologies (ICTs) is the unifying element in ITS and e-commerce. This chapter analyses the significance of ITS as an enabler to effective e-commerce by supporting logistics and improving supply chain management.

INTRODUCTION

Several studies have been done on different aspects of e-commerce. But an important component of e-commerce, ‘transport logistics’ has not received the attention it deserves. Transportation of goods and the associated logistics play a key role in effective completion of e-commerce transactions. Again, despite the fact that there has been several studies on Intelligent Transport Systems, the relationship between e-commerce and ITS has not been explored. This paper analyses the significance of ITS as an enabler to effective e-commerce in the Australian context.

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The chapter is organised into three sections. In the first section, the relationship between commerce and transportation has been discussed. The next section deals with ITS and provides a brief sketch of the economic benefits of ITS. The potential for integrating ITS and e-commerce is explored in the third section. The paper concludes by raising further research questions.

COMMERCE AND TRANSPORT INDUSTRY

Transport industry in Australia

Efficient transport system is important for any economy. More so for Australia since Australia is different in three distinct and interrelated factors from every developed nation with which it has trade and commerce links. The low density of population, geographic isolation from its international markets and the distances between domestic population centres make transport sector critical for Australia’s international and domestic trade.

Transport Composite Index illustrates the significance of transport industry in Australia. It is an indicator of the overall transport activity levels using 12 components which cover transport and storage sector. The index shows progressive growth of transport sector in Australia (Figure 1).

Australia spends a significant part of its Gross National Product on transportation. If our transport system is underperforming in comparison with that of our major competitors, it clearly puts our enterprises and consequently our economies at a competitive disadvantage and puts jobs at risk. A one percent improvement in the efficiency of Australian transportation system would save the economy more than $1.4 billion over the next decade.

World Bank (1999) has identified the following issues in the transport sector.

- Globalization of trade: advances in international logistics (multi-modal transport technology, electronic documentation, and streamlined customs procedures) have greatly expanded the scope for international trade in goods and services.

Figure 1: Source: Bureau of Transport Economics, March 1999.
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