Chapter 127
Innovative ICT Applications in Transport and Logistics: Some Evidence from Asia

Mark Goh
University of South Australia, Australia & National University of Singapore, Singapore

Kym Fraser
University of South Australia, Australia

ABSTRACT

This chapter examines the applications of innovative information and communication technology (ICT) applications in transport and logistics in Asia. Specifically, the authors examine two case studies of how a Logistics Service Provider (LSP), and a public sector agency based in Asia who acts as a regulator of ports and maritime services and facilities have effectively used ICT tools and applications to their advantage and how this has shaped the innovation landscape of the supply chain in Asia.

INTRODUCTION

To thrive in today's competitive global markets, managers need to keep an eye on a multitude of activities within the firm and across the supply chain. These activities include the critical functions of procurement, production operations, employee productivity, load utilization, and ultimately profitability and cash flow. Many companies, including medium sized firms, have adopted modern, integrated Enterprise Resource Planning (ERP) systems to help provide a holistic view of a company's activities. Such an ICT application mounted on an SAP platform has helped to give managers and decision makers the requisite information needed to do the job effectively, and to stay ahead of the competition. However, such applications do not come cheap.

As the world becomes increasingly globalised, there is in reality a renewed call for greater innovation especially in the areas of services, technology and practices so that the delivery of goods and services are up to speed vis-à-vis competition. Already, we note that two dimensions of business, namely, speed to market and product life cycles, are getting shorter with each passing business

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cycle, and with knowledge (both tacit and explicit) aging rapidly. In the context of the supply chain, it has been well recognised and accepted that ICT engenders the integration of supply chain activities which enables the seamless globalisation of services and can afford greater specialisation for the service provider as operations become more sophisticated. Indeed, the innovative use of ICT in the supply chain context can be referred to as the use of ICT applications that support the supply chain's objectives of improved efficiency and responsiveness, based on the needs of the current stakeholders in the supply network. Today, in Asia, we see ICT innovations continually driving down costs, with the quality of logistics service standards being simultaneously raised. Indeed, in many industries today, most services are characteristic of continuous innovation with limited shelf and user life. Based on the Clark-Fisher hypothesis, the redeployment of people from the less productive to the more productive sectors stimulates innovation, competition and growth (Botten and McManus, 1999). This in turn fuels the trade in services.

This paper seeks to describe the state of progress of innovative ICT applications in the LSP sector in Asia where there is now a greater need to drive for better innovation solutions and delivery so as to maintain the rate of business evolution mentioned earlier. We will focus on two cases, one of a global LSP competing in an increasingly competitive marketplace in Asia and the other of a public sector agency acting as a ports and maritime regulator where innovation has played a big part in driving the continued relevance for the organisation and the relevant community as a whole, respectively.

The rest of this chapter is organised as follows. In the interest of space and time, a short literature review on ICT applications and supply chain innovation is provided in the next section. Thereafter, we discuss ICT diffusion in supply chain management in Asia. This is then followed by a presentation of two case studies, one a public sector agency involved directly in maritime logistics, and the other a global LSP with a significant footprint in Asia. Next, we provide a discussion highlighting the managerial implications, followed by some managerial recommendations.

LITERATURE REVIEW

Over the past two decades, the nature of international trade operations and international logistics practices has changed by leaps and bounds. Innovations in transport, information and communications technologies as well as the liberalisation of trade tariffs and finance have brought to life a global production structure (e.g. Dicken, 2003) that is highly dependent on reliable and robust ICT applications and their delivery. As mentioned by Grainger (2007), with global supply chain and networks at work, there is now an imperative for a robust ICT system to bring the supply chain system to fruition, as in any cross border operations interfacing with the regulatory authorities at the national borders, without pre-emptive technologies in place would mean excessive documentation requirements and a lack of transparency in the goods inspection requirements and objectives. Hence, there is a need to bring about greater and quicker modernisation to the flow of cross border trade and hence the case for greater innovation in ICT applications in logistics as this type or family of applications brings business to the heart of the supply chain, namely, speed, efficiency, and transparency in cross border flows. On another note, innovation in ICT applications if appropriately applied can also bring to bear a real reduction in trade compliance costs. Grainger (2007) rightly identifies the following uses for ICT applications, which are still unevenly applied and enforced throughout Asia, namely,

1. Standardisation of documents and electronic data requirements
2. Automation of business processes