

# Chapter 54

## Adding Value to Logistics Services using ICT: A Case Study Analysis of Small Logistics Companies in Italy

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### ABSTRACT

*The adoption of information and communication technology (ICT) is one of the most critical areas of innovation for third-party logistics service providers (3PLs). ICT is seen as tool for achieve service differentiation and improving connectivity with other supply chain partner. Nevertheless, many logistics service companies had failed to use ICT to gain competitive advantage as the implementation of technology innovation is a challenging and risky process involving huge resources. In the context of small 3PLs, technology adoption is particularly critical and ICT investments need to be carefully planned. The objective of this chapter is to investigate ICT adoption in small 3PLs through a case study analysis conducted in the Italian logistics service market. The role of technology in supporting service customization together with inhibitors and enabling factors influencing technology innovation are explored. Implications are derived from the research and supply chain innovation perspectives.*

### INTRODUCTION

It is widely recognized that innovation is a key ingredient in the business success as it provides a number of benefits including the enhancement of process quality and revenues that may be able

improving the competitive position of companies. The ability to be innovative has become one of most important issues for companies in the 21<sup>st</sup> century forcing them to re-think their products, their services and their processes (Tidd et al., 2001).

Both academics and practitioners have traditionally viewed innovation as key to productivity in manufacturing firms and studies on the innovative

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process have been dominated by manufacturing-based paradigms (Gallouj and Weinstein, 1997). The role and the impact of innovation in services companies have been neglected as innovation has been perceived to play a limited role in the performance of these firms (Miles, 1993). In more recent years, innovation in service attracted the attention of an increasing number of scholars of technological change (Barras, 1986; Gallouj and Weinstein, 1997; Metcalfe and Miles, 2000) and two interesting trends have been identified. Firstly services are becoming more R&D intensive (Pilat, 2000; Cainelli *et al.*, 2004; European Commission, 2007). Secondly, services are increasingly innovative than in the past and are generating more innovations over time (Tether, *et al.*, 2001).

Many studies indicate that the identification of the types of innovation is extremely important to understand how an innovation is adopted and the factors affecting its adoption process (see for example Damanpour, 1991; Sinha and Chandrashekar, 1992; Wolfe, 1994). A large number of classifications and typologies of innovation have been proposed in the relevant literature (see for example Schumpeter, 1939; Knight, 1967; Henderson and Clark, 1990; Christensen, 1997; Garcia, Calantone, 2002). However, the distinction among technological and non-technological innovations is one of the most commonly used. According to Knight (1967) and Damanpour and Evan (1984), technological innovation relates to products, services and production process technology and it may concern either product or process. It differs from administrative (non-technological) innovations that mainly involve organizational structures and administrative processes. Howells (2000) also distinguishes innovations between technological and non-technological innovation. The first type of innovation often consists of a new product or service, while non-technological innovation focuses on process and organizational elements that can improve service customization, network capabilities of the company, procurement and distribution and management practices.

The focus of this chapter is on the adoption of a specific type of technological innovation (ICT related innovation) by specific service companies (small transport and logistics service providers).

In today's turbulent supply chain environment characterised by ever-increasing level of competition and customer demands for higher service level at lower costs, 3PLs are required to offer new and innovative ways to improve logistics effectiveness. As result, ICT is considered increasingly important in the management of the 3PL business as technology may contribute to add value to logistics services through improving cost-efficiency and customer service simultaneously. This is contrasted by the findings of a number of studies that suggest that 3PLs are not very innovative (e.g. Wilding, Jurado, 2004; Wagner, 2008; Wallenburg, 2009). However, when specifically focusing on ICT adoption and implementation in logistics companies, the literature is incomplete. This is particularly true when the size of logistics companies is considered. ICT application in large logistics service companies has been widely investigated (van Hoek, 2002; Larson and Gammelgaard, 2001; van Hoek, 2000; Berglund *et al.*, 1999; Peters *et al.*, 1998), but ICT adoption in small 3PLs has attracted little attention. This is reflected in a shortage of research with little empirical surveys. In fact, the existing studies have seldom focused on small logistics service providers in general (Gunasekaran and Ngai, 2003) and ICT usage in particular (Pokharel, 2005).

Large logistics firms have heavily invested in ICT and have actively developed information systems to support their operations for a long time. Small and medium-size transport and logistics companies, on the other hand, have more difficulties in setting up ICT applications. Moreover, competition among small providers is generally cost-based and service quality is still considered less important compared to other factors. Such behaviour reduces the innovative potential associated to the use of ICT complicating the competitive positions of these companies.

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