

Chapter 22

Electronic Logistics Marketplaces

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INTRODUCTION

As B2B e-business shifted to the Internet, Electronic Marketplaces (EMs) have grown rapidly in usage (Rask & Kragh, 2004). Definitions of an EM are diverse. One of the earliest and broadest definitions is offered by Bakos (1991), who referred to an EM as “an inter-organizational system that allows the participating buyers and sellers to exchange information about price and product offerings”. In the context of logistics, EMs can be termed Electronic Logistics Marketplaces (ELMs), referring to an electronic hub using web-based systems that link shippers and carriers together for the purpose of collaboration and/or trading (Wang, Potter, & Naim, 2007a).

ELM is a context specific type of EM, which facilitates the provision of logistics services. Tradi-

tional forms of communication between a shipper and a carrier are rather fragmented when a shipper has a number of carriers to manage. Such one-to-one exchanges can be costly and sometimes very time-consuming. Communicating through an ELM allows the connection of a number of shippers and carriers using a single interface, normally a Web-based system. This has brought advantages to organizations in terms of low cost inter-organization information connectivity, (near) real time visibility, and flexible partnership configurations.

This article defines and describes ELMs in terms of their;

1. architectures, features and functionalities
2. impact on logistics practice and benefits to stakeholders
3. future requirements

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ARCHITECTURES, FEATURES AND FUNCTIONALITIES

Type of ELM

A basic ELM is normally composed of three key parties: shipper, carrier and technology provider with the primary objective of efficient and effective delivery. In some circumstances customers (the recipients of the products) get involved as well. Emerged since the late 1990s, two main types of ELM came into practice: open and closed. The former is mainly for trading purposes and the latter is used to facilitate long-term collaboration between shipper and carrier. It should be noted that there is not a binary distinction between open and closed ELM, there is possibly a spectrum with differing degrees of openness and closure.

Early ELMs were open systems, such as www.teleroute.com, and are mainly price driven. They tend to be a neutral marketplace and focus on matching the supply and demand of transport and logistics services between shippers and carriers. A typical example is an online freight exchange for the spot trading of transport services.

Despite the benefits of lower search and coordination costs from using open ELMs, there is an increasing need for companies, and particularly shippers, to retain their linkages with preferred business partners (Dai & Kauffman, 2002). Carriers, in particular hauliers, are often reluctant to join an open ELM, as they fear being judged purely on carriage rates and not on total service delivery. A trend was observed that “early days of freight exchanges must now put less emphasis on open-market exchanges and more on their ability to work with closed communities of users who trade with each other” (Lewis, 2002; Rowlands, 2003). This has resulted in the recent development of closed ELMs.

A closed system is developed towards the needs of particular shippers and/or carriers. Membership is only available to those who are invited to collaborate. Contracts often already exist between

the shipper and carrier. Customers are usually long-term and actively involved in the logistics process. To date, most of the closed ELMs are initiated and led by the users of logistics service providers, i.e. shipper(s) or logistics brokers like a 4PL company.

While open ELMs are already well established, closed ELMs have emerged recently and hence are still at their infancy stage. But this novel form is seen to bring greater benefits to the organizations than the open ones. Hence the closed ELM is the focus of this article.

Functions of a Closed ELM

The operational scope provided by closed systems goes beyond basic load posting and matching services, and shifts to complex offerings that might encompass complete order fulfillment services. The use of closed ELMs is expected to lead to improved pipeline visibility and to the more efficient planning, execution and responsiveness of all supply chain players (Crujssen, Dullaert, & Fleuren, 2007). Larger carriers or shippers can leverage such ELMs by collaborating on a single platform and eliminating the complex and costly integration of different inter-organizational systems. Small carriers may be able to use them to reach wider sources of logistics demand, or to collaborate with other similar companies. Rather than focusing on the identification and selection of trading participants as per open ELMs, the closed ELM focuses more on execution and long-term value-added activities between shippers and carriers.

As the functions offered by ELMs are different, there may be other parties involved such as freight forwarders and financial service providers. Figure 1 provides an overview of typical ELM operations.

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