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International Journal of Information Management 24 (2004) 295–311

International Journal of

**Information
Management**

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Integration of web-based procurement and fulfillment: A comparison of case studies

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Abstract

Information and Communication Technologies (ICT), and in particular the Internet, have played a fundamental role in helping companies reach the goals of “supply chain integration”. The Internet can change the role and type of relationships between the various players, creating new value networks and developing new business models.

This work studies the impact of the Internet on company business, in particular on procurement and fulfilment processes. The analysis is carried out by considering and comparing four case studies regarding four large Italian companies. An evolutionary model for e-business strategy is proposed. This model shows how ICT can evolve from being merely a means of communication to being an instrument which coordinates company processes through five stages: traditional communication tools, internal integration, Web-based communication tools, XML Web-based platform, and integrated enterprise.

Even if the companies studied are geared towards different markets, the strategies they have used are quite similar. In particular, they have adopted the XML Web-based platforms model.

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Keywords: e-business; Procurement; Fulfillment; Supply chain integration

1. Introduction

In recent years, a combination of economic, technological and market forces have forced companies to take a look at and redefine their supply chain strategies. Among these forces are the globalization of business, the proliferation of product variety, the growing complexity of supply chains and the reduction in product life cycle. In order to remain competitive, some companies

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have tried to improve the coordination and collaboration of all the partners involved in the same supply chain. This approach has been called “supply chain integration” (Hewitt, 1994; Cooper, Lambert, & Pagh, 1997; Bechtel & Jayaram, 1997; Christopher, 1998; Knoblock & Minton., 1999).

Information and Communication Technologies (ICT), and in particular the Internet, have played a fundamental role in helping companies reach the goals of “supply chain integration”. In fact, the Internet can redefine the way in which some back-end operations, such as product development, procurement, production, warehouse management, fulfilment, post-sales support and even marketing, are managed. In each process, the Internet can change the role and type of relationships between the various players, creating new value networks and developing new business models.

The word “e-business” can be used to describe the use of the Internet to reach the goals of supply chain integration (Kalakota & Robinson, 1999).

This work studies the impact of the Internet on company business, in particular on procurement and fulfilment processes. The analysis is carried out by considering and comparing four case studies regarding four large Italian companies. Even though, these companies’ core business is completely different, their e-business strategies prove to be quite similar. Following the case studies, an evolutionary model for e-business strategy is proposed. This model shows how ICT can evolve from being merely a means of communication to being an instrument which coordinates company processes.

2. Procurement and fulfilment processes and the Internet

The supply chain encompasses every effort involved in producing and delivering a final product or service, from the supplier of raw materials to the consumer. Due to its wide scope, supply chain management must address complex interdependencies, such as those in an “extended enterprise”. Today, material and service suppliers, channel supply partners (wholesalers/distributors and retailers), and customers themselves, as well as supply chain management consultants, software product suppliers and system developers, are all key players in supply chain management (Handfield & Nichols, 1998).

Internet makes it possible to efficiently and quickly manage many relationships such as those involving wholesalers, taking on new resources, services, and technology, and purchasing semi-finished products, components and equipment (Lucking-Reiley & Spulber, 2001).

Internet is used in Business-to-Business relationships on a wide-scale for two main reasons:

1. the open nature of the Internet network gives it an important advantage over other information networks (VAN, EDI, etc.) since it requires low set-up costs, limited operation costs and significantly reduced switching costs (Roche, 1995);
2. the possibility of creating high-interaction environments which make the Internet useful both as a communication instrument and as a channel for marketing, thus leading to the development of more efficient inter-company relationships as well as opportunities for new cooperative networks (Hoffman, Novak, & Chatterjee, 1997).

Procurement and fulfilment are key processes in the supply chain and with the advent of the Internet those which have had to be redesigned and reorganized. The new forms of procurement

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