

IC-ININFO

The impact of Information Technology on the development of Supply Chain Competitive Advantage

Catherine Marinagi^{a*}, Panagiotis Trivellas^b, Damianos P. Sakas^c

^{a,b} Department of Logistics, Technological Educational Institute of Central Greece, GR32200, Thiva, GREECE

^c Department of Informatics and Telecommunications, University of Peloponnese, GR22100, Tripoli, GREECE

Abstract

This paper explores the impact of Information Technology (IT) practices on building competitive advantage throughout the supply chain. A competitive advantage is based on capabilities that provide the necessary grounds of an organization to differentiate itself from its competitors. The majority of the relevant empirical literature identified price/cost, quality, delivery dependability, product innovation, and time to market as the most decisive sources of competitive advantage. As far as the standards in the economic environment are changing and global competition is fiercer, organizations realize that they have to re-evaluate their enterprise business model in order to gain supply chain efficiencies. To meet these challenges and improve their competitive advantage, companies need to both support their internal functions and exchange information with supply chain partners in an effective way. Therefore, companies must exploit IT including enterprise applications such as ERP and CRM, as well as e-procurement and e-commerce. The empirical findings from a survey of 76 manufacturing firms in Greece confirmed the crucial role of IT practices and techniques on the establishment of a sustainable competitive advantage based on Supply Chain Management. Managerial implications are discussed.

© 2014 Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Selection and peer-review under responsibility of the 3rd International Conference on Integrated Information.

Keywords: information technology; supply chain; competitive advantage

1. Introduction

New technologies, global competition, and increased customer demands are forcing organizations to reconsider how they can take advantage of Information Technology (IT) capabilities to better manage their supply chains. Traditionally, Supply Chain Management (SCM) is mainly considered a process for obtaining and moving goods

* Corresponding author. Tel.: +30-2262022569; fax: +30-2262089605

E-mail address: marinagi@teihal.gr

and services. Modern aspects focus on strategic SCM, where supply chains are used as a means to create competitive advantages and enhance firm performance (Ketchen et al., 2008). IT practices and techniques are used to enable information sharing across supply chain partners, by integrating both internal and external business functions. In addition, the alignment of IT goals and objectives with strategic SCM can increase efficiency, productivity, and profitability.

In this paper, we explore the impact of information technology (IT) on the development of competitive advantage throughout the supply chain. We present the methodology and findings of a field research that was conducted in 2013, in 76 manufacturing firms at the region of Central Greece. The aim of this survey is the investigation of the impact of several IT techniques and methods on SCM competitive advantage. A structured questionnaire was built by adapting existing scales in the IT & Supply Chain Management literature measuring IT techniques and methods, as well as Supply Chain competitive advantage. The results confirm the crucial role of IT techniques and methods on the establishment of a sustainable competitive advantage based on Supply Chain Management.

The rest of the paper is organized as follows: Section 2 discusses issues concerning the application of IT for SCM. Section 3 presents the methodology of the field research that was conducted. Section 4 describes the data analysis and the results that were revealed. Finally, Section 5 concludes the paper.

2. Information Technologies for Supply Chain Management

A supply chain is a network that consists of suppliers, manufacturers, warehouses, distributors and retailers who coordinate their plans and activities in order to convert raw materials to finished goods (Chandra and Grabis, 2007). The required materials and products must be provided to customers in the right quantities and best quality, at the right location, at the right time and at the lowest cost. The most important supply chain processes include product development, procurement, manufacturing, physical distribution, customer relationship management and performance measurement (Olson, 2012). SCM aims to support the organization providing the means to link technology and people and trying to align the technology with the capabilities of the organization and among its trading partners (Shaik and Abdul-Kader, 2013). SCM enables trading partners to coordinate their processes through information sharing to facilitate supplier-customer interactions and minimize transaction cost.

Competitive advantage is the extent to which an organization has the competency to create a defensible position over its competitors as a result of critical management decisions, which differentiates itself from its rivals. Although empirical research has indicated cost, quality, delivery, and flexibility as important competitive capabilities (Ketchen et al., 2008), recently time and innovation have been identified as the next sources of competitive advantage. Nelson (2001) stresses the importance of gaining sustainable competitive advantage from Information Technology. Moreover, Ketchen et al. (2008) determine supply chain information systems as one of the key areas where best value supply chain differ from traditional supply chains. Therefore, the development of IT systems for SCM that support and speed up all business activities, improving decision making and productivity, can build competitive advantage throughout the supply chain. This is accomplished through the exploitation of IT for internal and external integration of business processes.

First, companies need IT techniques and methods to enable the integration of their internal business functions. This can help companies to become efficient, improve their productivity, and respond rapidly to customer needs. SCM systems are information systems for logistics management, transportation management, strategic planning, warehousing, inventory, manufacturing, supplier management, and customer management (Turek, 2013). Enterprise Resource Planning (ERP) systems are included as part of the broader SCM software. ERP systems are employed to integrate business processes, by organizing, codifying and standardizing business processes and data (Norris et al., 2000). They enable employees to access the common database and manage data in a uniform way, preventing the expense on transportation of data from one department to another. Data integration ensures the accuracy of data and prevents data redundancy and repetitions of data. Moreover, ERP reports can be used to forecast production and make decisions. Another key supply chain process is Customer Relationship Management (CRM), which is the management of relationships between the organization and its customers. A critical issue for internal integration of business processes is the integration of ERP with CRM. Recently, many ERP vendors provide an ERP-CRM integration package, since many enterprises have expressed an interest in integrating a new CRM system with their legacy ERP system. Moreover, the establishment of ERP and CRM systems should be a primary concern of an enterprise that is interested in embarking on e-business (Yanjing, 2009).

Download English Version:

<https://daneshyari.com/en/article/1114797>

Download Persian Version:

<https://daneshyari.com/article/1114797>

[Daneshyari.com](https://daneshyari.com)