



Chapter XI

Information and Communication Technology in Supply Chain Management

Vladimír Modrák

Technical University of Košice, Slovakia

Imrich Kiss

Technical University of Košice, Slovakia

ABSTRACT

One of the important fields of application of the modern information and communication technology (ICT) has been the Supply Chain Management (SCM). Despite the fact that ICT is the determining element in SCM automation and rationalization, practical use of ICT in SCM is in its starting rather than progressive phase. The present philosophy of logistics is characterized as coordinated cooperation between companies in supply chains, through which it is possible to achieve higher productivity than in any other way. These cooperation activities represent a typical content of logistical centers, which provide a wide range of services for their clients. This chapter focuses on designing a multi-integral logistical center and analyzing it from the aspect of its effectiveness. Also, other aspects, such

as the impact of ICT on the development of virtual logistical centers and the development stages of SCM are presented. Moreover, the chapter outlines pitfalls of this development trend in an effort to provide practitioners in SCM with a more complex view of this issue.

INTRODUCTION

The application of new technologies at the turn of the millennium is formulating new challenges for providing service for the customer in market supply, this is, resources, as well as on market demand or consumption. This impulse, which was initiated especially by progressive development of information and communication technologies, has also manifested itself strongly in the development of Supply Chain Management (SCM). The definition of SCM that is closest to our view is that it is “the integration of business process from end users through original suppliers that provides products, services, and information that add value for customers” (Moberg, Speh, & Freese, 2003).

In reality, we are standing at the threshold of the so-called knowledge economy and of expanding e-technologies, which, among other things, allow virtualization of the manufacturing of products. Relative to that, more and more frequently we come across the term “virtual organization,” which is seen by some as a method of running companies in the future, while others see it as an advertising trick of communication network owners. Along their development, various questions are being posed, such as: Will virtual organizations have a major impact on the lifestyle? Do managers and specialists develop themselves as quickly as the trends that surround them? It is apparent that it is necessary to include a certain period of time for people’s adaptation to new approaches. A substantial change that occurs in the so-called “adhocracy” when it replaces bureaucracy is the non-recognition of traditional management approaches, according to which each individual has a specific role in the company. Companies will probably start to copy the developments in the film industry, where the film director has specialists who are appointed for specific roles or functions. This trend is also beginning in the field of logistical services in the form of emerging multi-integral logistical centers. Is it a fashionable wave or a natural development stage in the development of SCM? Real examples from the practice, as well as theoretical studies (Chandrashekar & Schary, 1999; Lefebvre & Lefebvre, 2002; Motwani, Lawson, & Ahuja, 1998), offer indications in favor of the second possibility. Like the production field, in this field it does not mean the elimination of classic business models—in our specific case,

32 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/information-communication-technologies-supply-chain/4638

Related Content

Patterns of Social Intelligence and Leadership Style for Effective Virtual Project Management

Shazia Nauman (2012). *International Journal of Information Technology Project Management* (pp. 49-63).

www.irma-international.org/article/patterns-social-intelligence-leadership-style/62574

Y

(2007). *Dictionary of Information Science and Technology* (pp. 760-760).

www.irma-international.org/chapter//119586

Implementing E-Justice on a National Scale: Coping with Balkanization and Socio-Economical Divergence

Dionysios Politis, George Donos, George Christou, Panagiotis Giannakopoulos and Aggeliki Papapanagiotou-Leza (2008). *Journal of Cases on Information Technology* (pp. 41-59).

www.irma-international.org/article/implementing-justice-national-scale/3222

Generic Framework for Defining Domain-Specific Models

Arnor Solberg, John Oldevik and Audun Jensvoll (2005). *Encyclopedia of Information Science and Technology, First Edition* (pp. 1266-1273).

www.irma-international.org/chapter/generic-framework-defining-domain-specific/14422

Intelligent Agents and Their Applications

Alexa Heucke, Georg Peters and Roger Tagg (2009). *Encyclopedia of Information Science and Technology, Second Edition* (pp. 2132-2136).

www.irma-international.org/chapter/intelligent-agents-their-applications/13873