Exploring the e-Supply Chain of Information Products

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ABSTRACT

Digital information product producers have not taken advantage of the e-supply chain paradigm of today. However, in this information-based sector, a different set of supply chain management challenges exist. Very little research has been done in the supply chain of information products. This study focuses on the process analysis of the supply chain paradigm for digital information products. A framework for digital information products production in e-learning is proposed followed by an example of its implementation. Benefits, barriers, and challenges faced by different stakeholders are discussed.

Keywords: E-Learning, E-Supply Chain, Information Products, Intangible Products, Technology Integration

INTRODUCTION

A supply chain refers to a connected series of organizations such as suppliers, original equipment manufacturers, distributors and transporters, resources and activities involved in the creation and delivery of value, in the form of both finished products and services to end customers (Somendra et al., 2003).

The global change caused by the impact of information technology on supply change and business is similar to that of the telegraph. Similarly today, e-business and all of its various forms such as e-commerce, e-government, e-learning and e-supply chain has impacted the world in the same way.

Chopra and Meindel (2001) identified that supply chain consists of all stages, direct and indirect, involved in fulfilling customer requests, such that the primary goal is to deliver the correct product to the correct place at the correct time while maintaining cost efficiencies (Keskinocak & Tayur, 2001; Srinivas, 2008).

Information technology (IT), e-networks and associated information flows are driving these stages and goals of supply chain into an e-business phenomenon to accomplish all business processes. The resulting strategic implications of this e-network integration for synchronizing supply chains are significant (Jun et al., 2008). As a result, a shift from inventory to information; from competition to collaboration; and from cost to value (Boone & Ganesan, 2007; Kamarkar & Apte, 2007) has taken place. Information technology can be used to overcome the uncertainties of the modern business environment (Boyson et al., 2003). Mitigating uncertainty such as higher inventory levels, inaccurate forecasts and un-
fulfilled orders is of great importance to supply chain implementation.

Supply chains are becoming increasingly dependent on information flows to reduce errors and increase efficiency of work processes. As a result, great emphasis is placed on the dynamic creation of information, leading to an “information production” paradigm. The accurate, efficient and effective information production becomes primordial. However, it is necessary first to provide proper definition, classification and categorization of information products as they are acquired, transformed and delivered via their supply chain.

The information product (IP) industry is intense regarding the growth and pace at which it is using existing, and introducing new IPs. Broadly defined, information products are products created from the manipulation of data, information, and knowledge. Information products in knowledge-based industries, on the other hand, are further aggregated in as much as them being considered the intangible equivalent to tangible products. Examining recent research work we find the emergence of two information production and flow trends: The study of management of information to enhance e-business processes; and the study of ‘information products’ which entails operations management concepts as they apply to the creation and consumption of information, mostly in the service industry.

Few studies have examined the information products domain where they loosely have referred to it as digital information products or information products. Hui and Chau (2002) classified digital information products into three categories: tools and utilities, content-based, and online services. The distinction between digital products and digital information products is still not evident today in the literature. The use of the term ‘information content’ was used solely for the content-based digital products such as music, and documents. The category of tools and utilities is in general commercial, freeware, or shareware, which helps with specific functions such as anti-virus scans, and real media player. The category of online services includes online utilities serving specific tasks; the distinction between online utilities and tools and utilities is that for online utilities customers cannot purchase the product, they only pay for its usage.

Oberweis and Pankratius (2007) used the term digital information products, to reflect the combination of software and content (i.e., information). They state that exact distinction between contained content, and software is blurred as in the case of Microsoft Word and its thesaurus, and help functions. He used a continuum to illustrate this concept; on one end software prevails, and on the other, content prevails. Hill (1999) recognized intangible products to be any product that can be captured and stored, such as a concert, a chemical formula, and a building design, and emphasized on the importance of such domains, and the importance of distinguishing between intangible products and the service domain.

Making sense of the information paradigm as it relates to its supply chain management is crucial because it necessitates the re-visiting of information products definitions, categorization and associated processes. It is important to realize that the definition of information can be elusive and, in practice, the exchange of information between companies is not as easy as it may seem. This is due to the following challenges:

- Large number of information management systems (IMS),
- Many different standards used by the IMSs,
- Large number of incompatible peer-to-peer relationships in the supply chain network,
- Most systems are not open for easy exchange of information with other systems,
- Companies are reluctant to share information with other companies, and
- Open systems are vulnerable for hacking and other illegal and unethical practices.
An Optimal Inventory Policy for Items Having Constant Demand and Constant Deterioration Rate with Trade Credit
www.igi-global.com/article/optimal-inventory-policy-items-having/65548?camid=4v1a