

The Role of IT in Supply Chain Management

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Abstract: The revolution of Information Technology has resulted in many possible alternative solutions for managing the supply chain effectively. The use of Information Technology provides a competitive advantage to an organization over rest of the competitors in market place. IT is beneficial for cooperation and coordination within the supply chain and plays a vital role in decision making process. This paper highlights the overview of IT for effective supply chain management as well as IT tools used in IT enabled supply chain management.

Keywords: Supply Chain Management, IT, Coordination etc.

I. INTRODUCTION

Information System is being used in supply chain to link the suppliers, manufacturers, customers and distributors to achieve optimum productivity, overall satisfaction and joyful relation at cheaper cost. In today's world traditional supply chain is not going to work so every organization in order to survive the competitive marketplace uses Information Technology. The challenge lies in creating economic value through vibrant organizations, innovations and applications of strategic tools.

Supply chain management is how an organization manages its network of interconnected business to provide product and service packages required by end customers. Supply chain management consists of flow of goods, information and funds. Main objective of supply chain is to enhance supply chain profitability and IT helps to achieve the same thing. IT plays a crucial role in supply chain decision phase which can be categorized as design, planning, or operational depending upon the time frame during which decision made apply.

Supply chain execution is managing and coordinating the movement of information, funds and materials across the supply chain. The flow is bidirectional and it consists of information, management of inventory and flow of cash. Recent developing's in technology enable the organization to avail information easily in their premises and is helpful to coordinate the activities to manage the supply chain. The information cost is decreased due to increasing rate of technologies. Supply chain manager's needs to understand that information technology is more than just computers.

Supply chain management (SCM)

Supply chain management (SCM) is the term used to describe the management of the flow of materials, information, and funds across the entire supply chain, from

suppliers to component producers to final assemblers to distribution (warehouses and retailers), and ultimately to the consumer. The supply chain is a worldwide network of suppliers, factories, warehouses, distribution centers, and retailers through which raw materials are acquired, transformed, and delivered to customers. Supply chain management is the strategic, tactical, and operational decision making that optimizes supply chain performance. The strategic level defines the supply chain network; that is, the selection of suppliers, transportation routes, manufacturing facilities, production levels, warehouses, and the like. The tactical level plans and schedules the supply chain to meet actual demand. The operational level executes plans. Tactical and operational level decision-making functions are distributed across the supply chain.

Sharing of Information in SCM

Recently the concepts of supply chain design and management have become a popular operations paradigm. This has intensified with the development of information and communication technologies (ICT) that include electronic data interchange (EDI), the Internet and World Wide Web (WWW) to overcome the ever-increasing complexity of the systems driving buyer-supplier relationships. The complexity of SCM has also forced companies to go for online communication systems.

Companies need to invest large amount of money for redesigning internal organizational and technical processes, changing traditional and fundamental product distribution channels and customer service procedure and training staff to achieve IT-enabled supply chain. The following are some of the problems often cited in the literature both by the researchers and practitioners when developing an IT-integrated SCM: lack of integration between IT and business model, lack of proper strategic planning, poor IT

infrastructure, insufficient application of IT in virtual enterprise, and inadequate implementation knowledge of IT in SCM.

Information Technology is classified into five major broad categories focusing on developing an IT-enabled SCM:

a. Strategic planning for IT in SCM

The strategic planning is a critical task especially for IT-enabled SCM. It has long-term implications on the performance of IT in SCM systems.

b. E-commerce and SCM

With the development of Internet based technologies, integration of e-commerce with SCM systems is becoming a necessity. It can support various activities along the supply chain. B2B ecommerce has tremendous influence on integrating partners in an organization to achieve an effective SCM.

c. Knowledge and IT management in SCM

Since we are operating in information and automation intensive world, there is a need for knowledge workers to contribute to the value adding activities in advanced organization.

Knowledge and IT management requires a systemic approach or framework for educating and training workers in teamwork and be innovative.

Management of technology requires planning, developing and implementation decisions based on the characteristics of business processes and organizational objectives.

d. Virtual enterprise and SCM

Virtual enterprise is based on outsourcing concept to take advantage of the core competencies with the objective of being flexible and responsive to changing market requirements. Companies integrate various links of the supply chain and their supporting information systems that are driven by the need to streamline operations. The relationships of VE and the Internet have brought SCM to the attention of top management.

e. Infrastructure for IT in SCM

Companies suffer without having sufficient knowledge on what type of IT infrastructure or systems required for their business model to achieve an IT-enabled supply chain. The infrastructure includes the hardware and software and the nature and type of systems required for IT system in a supply chain environment.

f. Implementation of IT in SCM

Implementation of IT in SCM requires a project management approach with the right team for the planning and implementation of IT projects. Top management support is essential in order to provide moral support as well as the financial and technical support for the implementation of IT for achieving SCM.

Information Technology Advantage and Benefits on SCM :

The objectives of IT in SCM are:

- Low costs of operational processes (manual work).
- High quality Information and eliminate human errors.
- Quick transfer of information between firms.

IT is key in supporting companies creating strategic advantage by enabling centralized strategic-planning with day-to-day centralized operations. Actually supply chain become more market-oriented because of IT usage. Cisco reported savings of \$500 million by restructuring its internal operations and integrating processes with suppliers and customers with the help of web-based tools. The Wal-Mart & P&G experiences demonstrate how information sharing can be utilized for mutual advantage. Through IT, Wal-Mart shares sale information from its many retail outlet directly with P&G and other major suppliers.

II. CONCLUSION

With the advancement of technology world is shrinking day by day. Customer expectations has also increased and company dependence on IT tools to meet customer demand is also increasing.. An overview and deployment of the present alignments of widely deployed IT tools like EDI, ERP, bar codes, management of inventory, and management of transportation and warehouse management systems is provided. Internet technology, World Wide Web, electronic commerce etc. has changed the way a company is required to do business. These companies now have realized that they must harness the power of technology to collaborate with their business partners. That means using a new breed of SCM application, the Internet and other networking links to observe past performance and historical trends to determine how much product should be made as well as the best and cost effective method for warehousing it or shipping it to retailer.

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