

E-Tools and Supply Chain Integration – A Study of Trends and Opportunities in India

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ABSTRACT

Till the beginning of 1980s, the information flow between functional areas within an organization and with supply chain partners was paper based which resulted in delaying the transaction and communication process. During this period, information was often overlooked as a critical competitive resource because its value to supply chain members was not clearly understood. With globalisation and opening up of the Indian economy to the rest of the world the information technology (IT) infrastructure capabilities got highlighted and it was realised that IT provides a competitive positioning of business initiatives like cycle time reduction, implementation and supports in implementing redesigned cross-functional processes. In the 21 century, the growth and development in the Information Technology (IT) and supply chain management (SCM) have gained a significant role in the organisational performance across the industry. The advancement of internet-based exchange of information between organisations, their suppliers, customers and various service providers has improved the information flow in the supply chain of across industries. The prime focus of this paper is to highlight the dominance of transactions, coordination and collaboration as e-business tools in supporting supply chain integration. The researcher has made an attempt to focus on the changing trends and rising opportunities that have emerged in the SCM system with the use of E tools and techniques.

Keywords: supply chain management, e-business, E-commerce, supply chain integration

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INTRODUCTION

In this 21 century, the industry practitioners and experts have realised that doing business today is invariably different from couple of decades ago. With the continuous development of e-commerce, enterprise supply chain has undergone enormous changes, which increasingly reflected in the supply chain management (SCM) based on the e-commerce [1]. The competition between firms is tough and aggressive and survival depends on identification and implementation of competitive advantages [2].

It has been observed that SCM has immense implication on the company's

bottom line and a lot of researchers have examined the ways to optimize it and subsequently company's performance with utmost attention on supply chain integration. With the dawn of web-based integration the task of realizing supply chain integration has improved considerably.

According to ref. [3], a wide range of tools and techniques used to conduct business in a paperless environment is defined as electronic commerce. Electronic commerce includes electronic data interchange, e-mail, electronic fund transfers, electronic publishing, image processing, electronic bulletin boards, and

shared databases (Raju, Anbudayashankar). Through this system the present day companies are able to automate the process of moving documents electronically between suppliers and customers across the globe and thus eliminating geographical limitations. It has outperformed the older generation of communication platforms of electronic data interchange (EDI) by lowering the cost of implementation, better communication and coordination functionalities and flexible configuration of the systems.

LITERATURE REVIEW

SCM represents a new organizational belief that integrates a variety of business processes. Lambert et al. [4] have defined SCM as the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers.

The global supply chain forum defines SCM as “the integration of key business processes from end users through original suppliers that provide products, services,

information and value-adding for customers and other stakeholders [5].

Integrative SCM directs supply chain members toward the development of innovative solutions to create unique, individualized sources of service value [6].

Supply Chain Integration

As indicated by ref. [7] store network incorporation is characterized as “how much a maker deliberately works together with its inventory network accomplices and cooperatively oversees intra-and between hierarchical procedures keeping in mind the end goal to accomplish powerful and proficient streams of item and administrations, data, cash and choices to give most extreme incentive to the client”. Production network joining has remained a subject of talk among scientists till date; there is no widespread definition for it. Some conceptualize inventory network coordination regarding purchaser provider connections. The notional establishment of Supply Chain Integration lies in ref. [8] value chain model (Figure 1). The linkages of production network incorporation stretch out crosswise over entomb to intra firm condition.

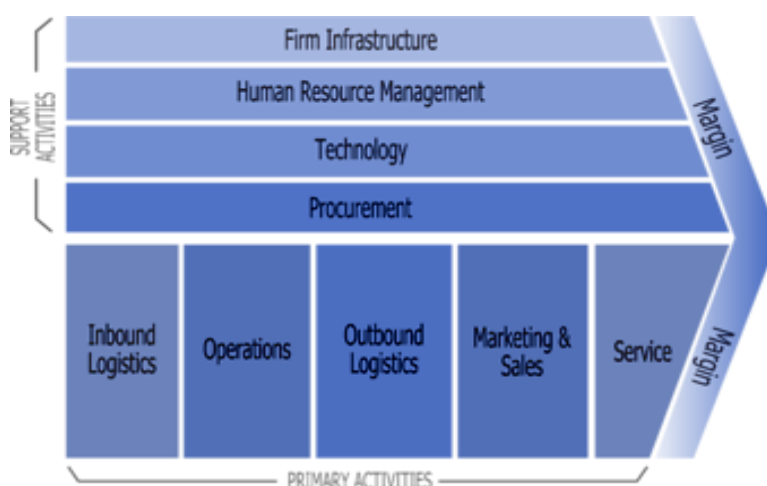


Fig. 1. Adapted from ref. [8] value chain model.

Davenport and Beers [9] have likewise recommended SCM joining as “selection and utilization of communitarian and organizing structures procedures, advances and practices among production network

accomplices for building and keeping up a consistent channel for the exact and opportune stream of data materials and completed merchandise.” Following these definitions, it turns out to be evident that

production network mix requires joint effort and coordination inside the organization between various divisions or capacities or and with store network accomplices.

The coming of web and data advancements shows a colossal extent of chances to oversee and upgrade store network connections, bringing about generous cost and time investment funds. “A business procedure can be characterized as organized and measured arrangement of exercises with determined business results for clients [10].” Expanding on the procedure idea, we can comprehend the linkages between production network administration and store network coordination. As indicated in ref. [11] SCM is “the coordination of key business forms from end clients to unique providers that gives items, administrations and data that include an incentive for clients and different partners.”

E-Commerce

Author has characterized E-commerce as web empowered instruments that encourage store network reconciliation with key providers and clients by helping them execute exchanges, facilitate and work together to achieve better inventory network execution. He has accentuated in the examination paper that a fundamental part for the achievement of inventory network reconciliation is played by the data advances. These principally constitute of phone, fax, email, EDI, undertaking asset arranging frameworks, heritage frameworks and Internet [12, 13]. Characterize e-business as the marriage among web and production network coordination.

In view of the fact that e-commerce is relatively a broad term, there is a need for a more specific segregation of the different internet-enabled tools that complies with the supply chain operations reference

(SCOR) model. A few frameworks for segregation of e-business tools have been proposed by different authors. One of the most frequently cited model [14]. They have distinguished between tools for e-commerce, e-procurement and e-collaboration. According to ref. [14], e-commerce supports variable transactions between manufacturers and customers from beginning till end of the supply chain and e-procurement has similar functionalities, with the difference that its application realizes in the back-end of the supply chain between suppliers and manufacturers. E-collaboration means tools for strengthening partners’ relationships by fostering exchange of data and joint decision making.

Purchaser – Supplier Relationship

Cullen and Taylor [15] form purchaser and provider relationship on four characteristics – trust, data sharing, basic leadership and objective harmoniousness to advance four inventory network setups, to be specific informative, composed, community oriented and agreeable.

As per ref. [16] data framework quality, data quality, administration and utilize, World Wide Web – confirmation and compassion, and trust are five composite components saw by clients to impact effective web based business use choices. While every one of these researchers think of various terms to portray the different purchaser provider connections, they can be sorted into three classifications: exchanges – where in there is here and now connections, and measure of trust, data sharing and objective harmoniousness is either low or missing; coordination – suggests more grounded associations with more noteworthy data sharing, with low measure of trust and objective compatibility among production network accomplices; cooperation – the nearest kind of banding together described by joint-basic leadership, elevated amounts of

trust and objective coinciding among the store network accomplices (upstream and downstream).

Electronic Market Places

Garcia-Dastugue and Lambert [17] are among the group of researchers that investigate electronic marketplaces and define electronic marketplace as an “open electronic platforms for facilitating inter-company transaction activities and interactions between multiple participating companies.” The main purpose of e-marketplaces is to encourage the execution of online transactions. However, some electronic markets also open-up opportunities for maintaining closer collaborative relationships between the buyers and suppliers. Paquette and Moffat [18] have highlighted in their research work that the Internet also supports the use of market mechanisms, such as auctions, that foster price competition.

Electronic Portals

Jhadhav [19] had defined e-portals as “user interface applications, residing on an intranet or extranet infrastructure and providing a path via a web interface to a wide range of content, directory and services through one electronic access point”. In present day market scenario, E-portals are also intensively integrated in electronic marketplaces as a gateway for buyers and suppliers.

Electronic Data Interchange (EDI)

Presented in the 1970s and advanced in the 1980s, electronic data interchange (EDI) innovation has been generally utilized by firms in supply chains to encourage exchanges and data trades [20]. EDI has been characterized as PC to PC trade of organized information for programmed handling. EDI is utilized by inventory network accomplices for the trading of fundamental data required for the compelling running of their organizations. EDI framework is normally set up between

store network accomplices that have a long haul exchanging relationship.

Enterprise Resource Planning (ERP) Tools

Enterprise resource planning (ERP) systems like Baan, SAP, People soft, etc. have become the core of present day organisations’ IT infrastructure. These systems have become enterprise wide transaction processing tools to reduce the manual activities and task associated with processing intra and inter-organisational functions like finance, inventory management and customer order information. Thus, ERP system help in achieving a high level of integration by utilizing a single data model, developing a common understanding of what the shared data represents and establishing a set of rules for accessing data within the supply chain.

CONCLUSION

The fast development of internet technologies has contributed towards the innovation of vast array of e-tools that could be utilized by practitioners to bring improvements in supply chain practices. The world is shrinking with advancement of technology and customers’ expectations are increasing and companies are facing more and more environmental uncertainties. The strategic and technological innovations in supply chain will have an impact on how organizations buy and sell in the future. Also, it becomes necessary for the companies to maximise their internet strength for better SCM and competitive advantage. The paper highlights the role of IT as an enabler in SCM. It elaborates and provides an overview of the IT tools like EDI and ERP. The need of the hour is to utilize the latest SCM applications, to observe past performance and perform a trend analysis 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. This study did not take into consideration industry applications of the tools, but a future one can more extensively investigate this issue.

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