

Applying Information Technology within Supply Chain Alliances

Jenkins Chen

Department of Information and Communication,
Kun Shan University
mmcc.uk@gmail.com

Ya Ling Tsai

Department of Marketing,
University of Stirling
Yaling23@hotmail.com

Abstract

In 21st century, it has been a growing awareness of the strategic importance of integrating suppliers, manufacturers, and customers in maintaining a competitive edge in business. Businesses have to consider their global reach as it is important, especially for reaching the global market as it will be more profitable and help them grow faster. In a global economy, with a rapid product cycle, capital constraints and advances in technology, no one firm has the full ability to maintain and grow its market share. In addition, alliances have been the frequently focus of research studies because they offer an attractive choice for the traditional arrangements of running a good business from the perspective of customer satisfaction.

Sharing information between supply chain partners and customers can be fully leveraged through process integration. The co-operation in the supply chain is becoming more common for focusing on managing competencies and contracting out all other actions. Finally, a greater faith on suppliers and alliance partners has become critical.

The effective IT is relatively important in cooperative relationships. Besides the information, it is vital for communication to take place within the alliance, as it is necessary that both the supplier's and customer's firms could support the relationship to the best of their ability. The design of supply chain as an association of

partners linked together as a network provides the fourth part of agility. It also extends the review to incorporate network literature. This paper described the network link strategic alliances and customers.

Keywords

Information technology, Supply chain alliance, Knowledge management

INTRODUCTION

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THE ROLE OF INFORMATION TECHNOLOGY AMONG SUPPLIER ALLIANCES AND THE CUSTOMERS

Information in an alliance should be open and the flow of private information should have been clearly identified, with frequent meetings between the partner's top management to determine the correct functioning and

to further mutual understanding (Gulati et al., 1994). Broadbent et al., (1999) argued that information technology (IT) consists of a compilation of IT resources that are shared and used by firms. It consists of both technical and organisational capabilities that provide the opportunities to share IT resources within and across the firm.

In addition, the progress of web technologies, the innovation of SCM mainly focuses on helping decision makers to develop and manage customer relationships by professionally integrating applications and allowing for collaboration in real-time with trading partners. The change in corporate strategies has increased their trust for their suppliers. Under such circumstance, the collaborative relationship between partners in the supply chain becomes dangerous, so the effective SCM must rise to meet the challenge. However, the Internet offers the supply chain huge possibilities and completely new methods for the reorganisation and coordination among business partners and customers.

At a point in the latter part of the 20th Century, organisations had to broaden their supply chain re-engineering, JIT manufacturing and distribution, Efficient Consumer Response (ECR) and agile paradigms, to new levels of supply chain efficiency and integrate them with the leading-edge technology.

THE ROLE OF INFORMATION TECHNOLOGY

Sampson (2000) found that the role of information technology is a delicate communication requirement for integrated supply chains. In addition, Zsidis and Ellram (2001) believed that IT has helped bridge communication gaps among many organisations. Tyler (1999) supposed the need to stay abreast with modern technology, as it is vital for EDI, the Internet and ERP applications. Besides, Marcussen (1996) stated that the involvement in technology can be a requirement for alliance activities. Concurrently, the involvement of purchasing professionals in supplier alliances may encourage greater

investments in IT, or at least require that the purchasing firm and supplier linkages specifically take IT investments in consideration.

An approach must also be derived that facilitates supplier alliance development. One of the characteristics of supplier alliances is the continual flow of communication between the two organisations. Technologies are a communication bridge that flows among organisations and are essential for establishing and maintaining strong partnerships.

EDI is the electronic arrangement of structured documents between business partners. XML was created that richly structured documents could be used over the web (Milutinovic and Particelli, 2002). Graham (2002) said that EDI played an important role in the development of SCM, as SCM applications used networks aimed at controlling costs, reducing paperwork, lowering inventory levels, and shortening product cycles. According to Chou et al., (2004) the growth in high-technology programs such as enterprise resource planning for ERP and CRM shows that SCM is an important factor for general enterprise applications. Kumar and Van Hilleberg (2000) described ERP system as an integrated set of application software modules, including accounting, distribution, sales and marketing, material management, human resources, logistics and more. ERP systems are an effect of Materials Requirement Planning (MRP) systems that were well-developed in the 1970s, largely out of manufacturing concerns. As these systems evolved (e.g. MRPII in the early 1980s), they began to fit in with the new financial controls and measures, master production scheduling and capacity planning.

Different companies in a supply chain have different objectives (Tjader, et al., 2004). Chaffey (2002, pp 216-254) argued that internet technologies can reduce production times and costs by increasing the flow of information, as a way to integrate different supply chain activities. The Internet's strengthening the influence of

convergence can be depicted. Kehoe and Boughton (2001) are in agreement that low-cost connectivity makes it possible for small and mid-size companies to take advantage of SCM techniques. Sivakumar and Roy (2001) believed that global supply chains are involved not only in the supply of products but also in the supply of high technology services such as outsourced software and call centres which create special research opportunities and challenges.

This is a challenge faced by many high technology companies, owing to product life cycles growing shorter and shorter (Chapman, et al., 2003). According to Shah (2001), the engineering changes involved in many operations require both new suppliers, new bills of materials, and new requirements for existing parts. Like Dell Computers for example, who started in 1984 in Austin, Texas; Dell Computers was ranked the number one PC maker in the US market in 1999. Dell's PCs are made by electronic orders and are delivered directly to its customers. Dell's direct-sales model is well known in the business community. Dell has eliminated the middleman within their supply chain and has also exemplified an innovative business model through their effective SCM. Dell computers continue to improve and widen their competitive advantage by integrating the Internet into its entire business process, including online sales, procurement, customer support and relationship management.

However, one of the frequently raised questions during the beginnings of e-commerce was whether the functions of the traditional supply channels will remain. Janta, et al., (2003) doubted that suppliers will retain their locations as the channel of promoting their products to users. Mackay et al., (2003) pointed out where the contributions to the B2B area are in e-commerce; mostly from improved efficiencies through reduced costs and prices and improved business practices that will lead to better international competitiveness. It is widely adopted that companies are increasingly facing the challenge of

e-business (Cagliano, et al., 2003). The evolution of information and communication technologies has fostered the development of powerful tools that are expected to dramatically improve the supply chain performance, through higher levels of process efficiency and integration.

Incentives for the high-tech industries to join forces has compelled electronics field. Meanwhile, the range of necessary technology is more than a single firm can hope to develop alone (Niren et al., 1995). For example, the NCR Corporation (USA) has formed an alliance with the Winbond Electronic Corporation, Taiwan's third largest semiconductor maker. NCR sells its chip products in the Taiwanese market and Winbond's integrated circuits are to be sold in the US market (Whenmouth, 1993). In 2001, Ericsson (Sweden) used a strategic alliance strategy with Sony (Japan) to keep its market share and create bigger market opportunities. Zineldin and Bredenlow (2003) said that these alliances certified competitor manufacturers to become partners.

Thus, shared ventures have a higher representation in industries, as contractual alliances are more common in hi-tech industries.

OPERATION SCM PROCESS IMPROVEMENT ACTIONS (NETWORK)

Christopher (1992) said that the supply chain is a network of organisations which are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customers. Some researchers pointed out that integration can improve the supply network (see Lee et al., 1997; Hines et al., 1998; Narasimhan and Jayaram, 1998 ; Xu et al., 2002).

In addition, global supply chain networks do their best to support their strategic objectives in different countries by playing different roles (Chopra et al., 2004, pp101). SCM should consist of the analysis of the

strategic positioning of new firms and the supply networks made it possible by the trends of increasing product standardisation, rapid communication and globalisation. These trends have enabled firms to achieve greater success. However, Porter (1994) argued that if companies fail to recognise the relationship between the functional strategy and external pressures, they will eventually end up with non-competitive production systems, as the essence of strategy formulation is coping with competition. Thus, the linkage among activities should be extended outside the firm to encompass the activities of suppliers, channels, and buyers. In light of this, Harland et al., (1999) proposed the term “*supply strategy*” in addition to “*supply chain management*.” The reason was to broaden the concept of the supply network from operations management to strategy planning, and extending the scope of the study beyond the material and information flows, to include the operational process strategy.

KNOWLEDGE MANAGEMENT WITHIN SUPPLY CHAIN'S ALLIANCES

Paris and Sasson (2002) said that an alliance is usually a long-term effort which consists of multi-projects mutually dependent and beneficial, and integrates people, processes, technologies or products. Unlike short-term partnerships or arrangements between companies that are highly contractual, the strategic alliance provides the companies involved with the opportunity to learn and increase their know-how.

Knowledge management also can be considered with supply chains alliances, customer value, and for the members of the supply chain. Professional networks, such as a “*vertical-net*” network, allow the members of an industry to share information with each other and maintain industry practices. Moreover, industry networks succeed in contexts which are industry specific, such as trade expositions and skill-based groupings that promote particular skills. While supply chain alliances members

sharing information increases in practice, they benefit from improving knowledge management

Janta et al., (2003) pointed that those functions less likely to be replaced, might result in suppliers continuing to strengthen their competitive edge and add further value to customers. Knowledge learning activities in alliance management have been described as an event to learn (Alvarez and Barney, 2000; Lyles and Steensma, 2000). In addition, Inkpen (2000) suggested that in alliances, partners must learn to work together and work to learn together. Knowledge in alliances is usually transferred through haphazard exchanges (Dyer and Nobeoka, 2000; Rich, 2003).

A network can often be superior for a stand-alone firm due to it having a greater diversity of knowledge and talent within it (Dyer and Nobeoka, 2000). There is a growing identification that individual businesses no longer compete as stand-alone entity but rather as supply chains. Christopher and Towill (2000) pointed that “*network competition*” prizes, where companies have a better structure and manage their partners in a network committed to closer and more agile relationships with their final customers. It can be argued that in today's challenging global market, the advantage of being able to influence the strengths and competencies of network partners is to achieve greater responsiveness to market needs.

CONCLUSION

The current research on the supply chain management area synthesised both management learning and development. The literature is multifaceted and because of these different contributions to the body of information, there is a lack of the application of management learning to management practice.

Recent research has explored the gap between suppliers and customers for customer satisfaction evaluations of the supplier's extent of market orientation (Krepapa et al., 2003; Steinman et al., 2000; Webb et al.,

2000). To address this gap, recent research has begun to consider the impact of the broader social, deterministic communication of the character of change. On the point of review, it has deduced that the literature on the topic of alliances has focused mainly on how to form alliances and the resultant benefits from customer satisfaction. Essential for this issue and largely unmentioned is the understanding of how alliance relationships to develop over the time.

However, in today's competitive and high-technological age, the market has become more agile, so it can not only focus on the gap among suppliers and customers. In addition, the suppliers are more important for businesses and they can also support or design new products and services for customers. Likewise, it can improve customer responses, and elevate capabilities much better than ever. Besides, they can share knowledge with each other.

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