

STRATEGIC MANAGEMENT OF SUPPLY CHAIN APPROACHES

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Abstract

The effective coordination and management of the supply chain requires collective know-how including the ability to synchronise processes. This conceptual paper seeks further understanding of the integrated, semi-integrated and independent strategic approaches within international supply chain management (SCM). Constructs of organisational structure, control, relationships and culture that have been developed in prior international marketing, customer relationship marketing and SCM literature will be extended. We identify limitations of existing strategic approaches and tensions that may affect the coordination of the supply chain. This is important as globalisation is driving advanced information technologies, lower trade barriers and economic rationalisation, which are changing business perceptions. We propose a conceptual model that encapsulates these constructs and dimension of the SCM process, which provides greater understanding of the links that make for a streamlined and efficient supply chain at a local level, which has major implications for management of global supply chains.

STRATEGIC MANAGEMENT OF SUPPLY CHAIN APPROACHES

INTRODUCTION

Logistics, SCM and Purchasing have been well researched in recent years (Carter, 2000), distinguishing between operational and strategic studies. Sundaram and Mehta (2002) argue that businesses are operating in a 'border-less' economy. Consequently, business distribution objectives have been continually changing in an attempt to achieve 'best market practices' in managing the cost/service trade-offs to ensure high customer service levels are achieved. Thus, integrated, semi-integrated and independent SCM strategies are being analysed with regard to 'how' they can create a streamlined value chain and help build a sustainable competitive advantage for the firm.

The three broad strategic approaches to SCM (integrated, semi-integrated and independent) aim to utilize all networks and channels to help grow efficient operations (Sundaram et al, 2002). However, McAfee, Glassman and Honeycutt (2002) have identified that there is little emphasis on the influence of corporate culture and its impact on SCM operations. Essentially, what McAfee (2002) is suggesting is an evaluation of organisational parameters, within the context of SCM. This paper will provide theoretical and managerial guidance and prescriptions by linking organisational processes, strategies and culture. Research strongly supports the integration of corporate synergy values (Sundaram, et al, 2002).

A primary objective of SCM is to increase the value of products and services to firms in the supply chain with improved customer service and quality, and lower inventory carrying costs (Wisner & Choon, 2000). SCM approaches thus aim to improve participant performance through the reduction of waste and more efficient methods of internal and external supplier capabilities and technologies (Wisner & Choon, 2000). Consequently, the SCM philosophy expands the traditional internally focused integrating activities of logistics (Sundaram et al, 2002) by bringing trading partners along the supply chain together, with unifying goals of efficiency, speed, and end-customer satisfaction (Chopra & Meindl, 2001). The aim of this paper is to fill the void of corporate synergy in SCM literature by providing a better understanding of how firms can realize actual savings and produce a streamlined and efficient value chain. This will include analysing the aligning of SCM functions, to explore 'how' the common goals of different functions are actually communicated and played out. This is particularly valuable, as extant literature (Harwick, 1997) does not provide detailed knowledge of the functional linkages.

GLOBAL SOURCING, CORPORATE SYNERGY AND CULTURE

Numerous studies (Smith, 1999; Arnold, 1997; Faes & Matthyssens, 1998; Hughes et al, 1998; and Jones, 1997) have introduced frameworks that suggest improved methods for coordinating purchasing coordination globally. This is in line with achieving a 'corporate synergy' through SCM processes. However the majority of these studies have assumed a global sourcing context (Rozemeijer, Weele, & Weggeman, 2003). Few studies have taken a micro approach by analyzing and evaluating the SCM approaches within a specific organizational framework with a specific cultural and geographic position (Rozemeijer et al, 2003).

In examining specific organizational frameworks Rozemeijer et al. (2003) depicts corporate synergy as a method of improving SCM in the context of global sourcing. Corporate synergy is described as the net effect of total benefits minus total costs, leading to corporate advantage. Synergy is derived by companies that place pressure on their supply systems to meet market expectations. This advocates the need for objectives and strategies to be linked. Thus, the supply chain will be structured in a way that will maximize a streamlined and efficient workflow. A distinction is made between the strategic (business) and operational (functional) level, as Rozemeijer et al. (2003) suggests that synergy will only be achieved if the business units at the

operational level are operating at a level of maturity. Thereby, it may be inferred that SCM approaches may in fact exist on two levels (business and functional), which requires further exploration.

Rozemeijer et al. (2003) concluded that the foundations underpinning corporate synergy are weak. Rozemeijer et al. (2003) noted that most respondents highlighted that synergetic cooperation outweighed the cost of the measures. This suggests that it may prove valuable to better understand current work-flows that are not being integrated into the organizational mechanisms. This relates in a strategic sense to the organizational control, which is highly influenced by communication infrastructure (personal/informal/formal) and management initiatives. Hence, it is proposed that the literature is depicting an underdeveloped understanding of the links and processes that need to exist between the operational and strategic levels of the supply chain (Rozemeijer et al. 2003; Senge, 1990).

SCM

SCM has the potential to build virtual organizations of independent entities, linked by systems providing global visibility of real-time information from any part of a company or its supply chain partners. This visibility is a powerful tool in setting a foundation for effective forecasting, production, and inventory decisions (Chopra and Meindl, 2001). Fully integrated SCM realizes the strength of integration of supply and business functions, including purchasing, demand management, distribution planning, transportation, quality management, production planning, and materials management (Wisner & Choon, 2000). This requires that, in addition to stating what functions require symmetry, the way the functions are to sit together within the supply chain must also be identified. If visibility is limited to the function and not the paths between the functions, loss of value within the value chain is likely (Wisner & Choon, 2000).

Numerous researchers have argued that SCM is not feasible in situations where the parent organization lacks span of control over its network of suppliers (Cox, 1999). Other researchers have brought attention to the lack of success in many SCM initiatives (Alvesson, 1996). Despite such studies, there has been limited attention paid to identifying organisational control, culture and key relationships as major influences on SCM, and determining what effects they have under integrated, semi-integrated and independent SCM approaches.

SCM research is unclear as to a common meaning for the concept. Ganesham (1999) defines SCM as a network of facilities and distribution operations to perform the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers. Essentially, SCM underpins a set of 'functional' approaches. Logistics can be defined as the process of planning, implementing, and controlling the efficient, effective flow and storage of materials, finished goods, services, and related information from origin to the location where they are used or consumed (Fawcett and Clinton, 1997). Thus, the real value gained through logistics is through the focus on core activities that provide tangible value to the customer, whilst subordinating other supporting activities to embed value creation (Simatupang and Wright, 2002). Logistics presents a more fragmented discipline towards the value chain than that of SCM. In doing so, the definition used can directly result in incorrect meaning. However, extant literature reveals three broad SCM approaches.

SCM APPROACHES

This section succinctly describes and analyses three broad SCM approaches. The three approaches all encompass decision processes that exist at all levels of SCM. Each approach brings together important components (functions) of the supply chain.

INTEGRATION IN THE SUPPLY CHAIN

The integrated approach to SCM involves total collaboration among the functions of the supply chain. The SCM concept depends on the premise that the potential to improve customer service, reduce costs and achieve sustainable competitive advantage can occur only if those parties involved within a chain adopt shared goals and coordinate their functions. Vollmann and Cordon (1998) suggest “supply chain management is about optimising the overall activities of companies working together; ... to manage and coordinate the whole chain” (p.2). Vollmann and Cordon (1998) stress that the supply chain needs to be viewed as a single entity, and should involve more than one organisation (Ellram 1991) and is required to reduce the sub-optimisation that results from independent functions working in ‘silos’).

Additionally, the integrated approach requires the understanding and management of relationships between independent parties (Ellram, 1991) and understanding and acceptance of relationships to provide mutual benefits across the functions. Thus, the alignment and coordination of SCM approach is critical to incorporate both the operational and strategic organisational levels (Sundaram et al, 2002) in home and international operations. Hamel and Prahalad (1989) argue that there are two types of strategies within an organisation, the ‘corporate’ strategy, which relates to those strategic activities which impact on the operations of the whole and ‘business’ strategy, which relates to how an organisation operates or competes within each of its broad areas of activity. A third can also be included at the ‘functional’ level, where the strategy is implemented (Yip, 1998).

It may be inferred from extant studies that the ‘integrated approach’ provides the links across the supply chain. However, Gattorna, Chorn and Day (1992), suggests that it is possible to create and maintain a shared vision and strategy for all members of the supply chain. However, this poses considerable challenges for suppliers and customers of that organization (Gattorna et al, 1992). They argue that an organization should accept the differing objectives of other functions and consequently restructure itself to ensure work-flows are supported that operate efficiently within the market environment. They suggest future research should focus on understanding the underpinnings of function work-flows and not the functions themselves. Work-flows are likely to be more complex in an international context.

THE STRATEGIC ALIGNMENT MODEL

The alignment theory argues that the performance of organizations is dictated by the level of functional alignment (Chorn, 1991) and that the level of alignment is non-prescriptive, i.e. valid only in specific competitive conditions. The alignment theory presents a causal relationship in that specific organisational cultures and/or leadership styles are only appropriate in given strategic conditions (Chorn, 1991; Gattorna and Walters, 1996). Additionally, the human element is the common factor in each of the competitive situations, affecting both culture and leadership and strategy is seen as an outcome. In contrast to Sundaram et al (2002), Chorn (1991) and Gattorna and Walters (1996) argue that alignment is not necessarily linear, as it can be reactive or pro-active. This may be seen by managers reacting to changes in the external environment, or pro-actively developing or modifying the marketplace through the manipulation of internal dimensions of strategy, culture and leadership style.

When examining the integration approach to SCM the strategic alignment model allows the linkages to have a human element through the behavioural characteristics of the various elements functions of the supply chain. Furthermore, the model flows across the value chain of production, administration, development and integration (Chorn, 1991), and it is these functions that provide the basis of consistency throughout the four functional levels (production, administration, development and integration) of the model (Gattorna and Walters, 1996). Linkages, although differentiated, are aligned and target the different demands of various customer segments. This is important as SCM approaches are designed to meet customer service levels.

According to Gattorna et al. (1992), Gattorna and Walters (1996) and Gattorna (1998) organisations should have different pathways through a supply chain to match the different target markets and their associated customer service levels. This supports the view of different combinations of functions within the one strategy. Thereby, if integration is discovered to be the key, then strategic business units (SBUs) may be the answer to providing the multi-alignment necessary to counter the argument that integration is not linear in nature.

INDEPENDENT SUPPLY CHAIN

According to Sundaram et al. (2002) an independent supply chain means links of the supply chain act independently and are not inhibited by other functions; the decision-making occurs within each function along the supply chain. Essentially, each function has a local focus and is driven by cost optimization. A supply chain operating under this structure represents a segregated association of businesses where decisions are derived in the form of 'silos' (Sundaram et al, 2002).

ORGANIZATIONAL VARIABLES, SUPPLY CHAIN ORIENTATION AND CULTURE

The concept of 'organizational culture' links directly to SCM as it refers to the 'personality' of the firm (McAfee et al, 2002). The organizational culture is largely a perception of different stakeholders. Consequently, it is vital that the organization's culture is examined, as is argued that this construct can directly influence the supply chain orientation and thus the SCM approach (McAfee et al, 2002).

They depict culture as encompassing 'internal culture' that surrounds role expectations and 'external culture' that relates to channel member expectations. In understanding 'corporate synergy', that is the coordinating of supply chain activities of the organization Rozemeijer et al. (2003) and McAfee et al. (2002) highlight that through regular interactions within an organization, shared understandings are developed which brings to the fore a common awareness. Greater understanding of the principles that underpin the linkages among the corporate, strategic and operational levels of the organizational supply chain is needed for more effective performance.

CONTINGENCY THEORY, CULTURE AND CONTEXT

In order to build a streamlined value chain and help achieve a sustainable competitive advantage companies are being driven to build greater knowledge of the SCM process. Chandler (1962) identified the necessity for assigning functional responsibilities in any organizational design. Chandler (1962) initially introduced this view in his contingency theory that "proposes that firms perform better when their organizational structures are properly aligned with their strategies and environmental conditions" (p.28). This suggests that firms may need to continually re-evaluate their strategic positions as they change in size over time, as the functional characteristics being organized will essentially evolve too (Chandler, 1962; Johnson, 2003). This suggests a need for greater understanding of SCM strategies within a specific organisation and of the extent to which culture impacts upon the SCM strategies. This challenges studies that have tended to argue for a global sourcing approach which has been a dominant feature of this area of study in the past (Rozemeijer et al, 2003).

ORGANIZATIONAL STRUCTURE, CONTROL AND CULTURE

Extant studies surrounding SCM (McAfee et al, 2002; Fawcett and Clinton, 1997; Bowersox et al, 1999) have linked organizational structure and control. They argue that the level of integration or lack of integration directly affects control and is important, as this dimension will directly influence business processes and business unit relationships. It is argued that more meaningful

understanding of 'how' culture influences control within the organizational structure is needed. However, culture is likely to be affected differently by all three SCM strategies. To identify how the organizational cultural is affected by, or influences, all three environments is logical step. In doing so, it may be possible to identify which environmental type requires which strategy, hybrid or overlap of previously identified SCM strategy approaches to achieve optimum performance along the supply chain.

Theoretical constructs within SCM processes have not extended research into the area of the procurement team and their relationship with the entire organization. Essentially, when examining an organization's value chain, questions must also be raised about the procurement team's responsibilities. Corporate structure is embedded in cultural accountability and thus the responsibility for the SCM process. From this understanding it may be derived that cultural undertones directly impact perceptions of functional accountability and responsibility roles. Thus, developing greater understanding of how the three SCM approaches fit strategically into the organizations supply chain would assist with the development of more efficient SCM by different organizational types.

COORDINATION MODES

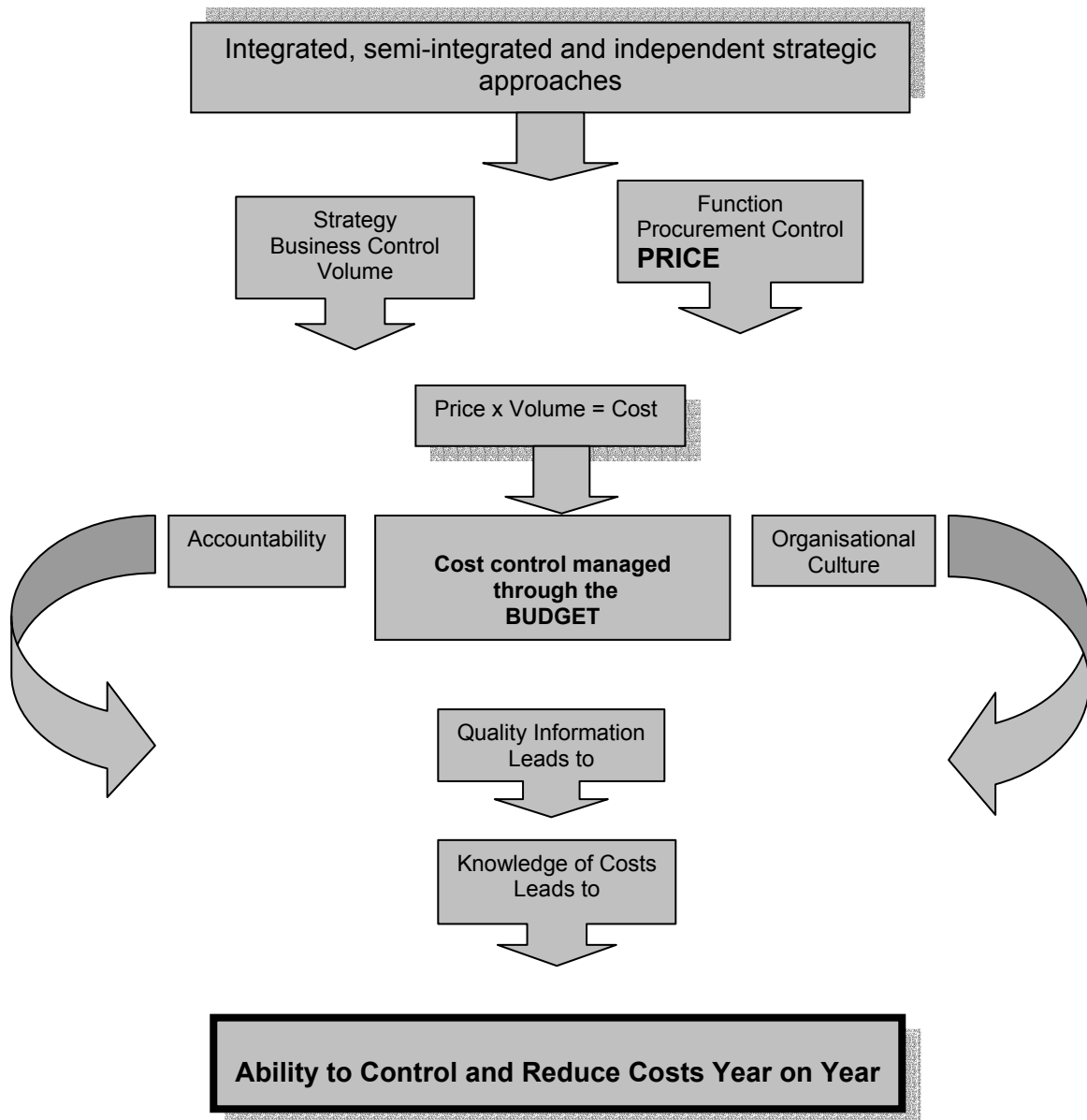
Given the critical importance of coordination, surprisingly few researchers have actually tested this in relation to SCM (Senge, 1990; Simatupang & Wright, 2002). Konijnendijk (1994) examined coordination at the operational level. However the focus was on independent functions within the value chain and not the direct links that SCM theorist advocate. Lee (1997) did take coordination at the operational level further by including information sharing. It still remains true that little attention has been given to exposing different coordination modes and their interactions (Simatupang & Wright, 2002). A need to examine SCM approaches and types of mutuality along the supply chain is required, to build a more transparent value chain.

Ultimately coordination is the act of managing interdependencies between activities performed to achieve a goal (Simatupang & Wright, 2002; Malone and Crowston, 1994). SCM strategies are acts of combining or aligning functions to achieve the firm's stated goal. What Simatupang and Wright (2002) and Malone and Crowston, (1994) are suggesting is a two-tiered approach within SCM whereby an operational and a strategic framework, work hand in hand. This suggests that, regardless of which SCM approach is advocated, the interdependencies and aligning frameworks are such that future studies of SCM should not overlook work-flows within the supply chain and should not focus on primary functions alone.

Thus, several key issues regarding coordination remain open to research. Simatupang and Wright (2002) clearly suggest that further empirical work on coordination modes and their influence on the supply chain are needed. By exploring the informal work flows created by organizations' actions, perceptions, norms and supply chain performance, opportunity exists to identify drivers that are currently deeply embedded within the supply chain. Future research is required to unravel critical links and environmental factors that underpin particular SCM approaches. Extant studies suggest that simply implementing a SCM approach that does not fit the organizational culture (values) and existing process and structures (coordination modes), is unlikely to lead to greater integration and efficiency along the supply chain.

The intangible construct of 'culture' must be examined within the context of SCM. It is proposed that culture embedded in the organization is a direct driver of value chain strategy. Thus, for SCM approaches to be examined effectively, the relationship between coordination of processes, strategy and culture are required. In doing so the context (internal and external factors) of the organization in which the culture lies will also require attention. We propose a conceptual model (Figure 1) that encapsulates these constructs and dimension of the SCM process.

Figure 1: Proposed Accountability Linkage Model for Integrated SCM



METHODOLOGY

SCM is theoretically driven by boundary-spanning activities (Bowersox et al, 1999). To gain a detailed understanding of the linkages along the supply chain a multi-method empirical approach involving both surveys and case study interviews is recommended (Fawcett et al, 2002). This multi-method maximizes the potential opportunity to develop a detailed understanding of how managers view SCM implementation in reality.

Since the purpose of this proposed study is to explain the causal links within the supply chain, the survey method may not be most suited in this initial, exploratory study (Yin, 1994; 1981). Case study exploratory methodology derives greater outcomes when the focus is on a contemporary phenomenon within a real-life environment. Exploratory methods are best suited to situations where the researcher has minimal control over the environment. Since, the supply chain is

continually changing and adapting to a real life context it is valuable to pose 'how' questions, that help identify operational links that fit in a context and thus need evaluation over time.

Sohal, Power and Terziovski (2002) and Petrovic-Lazarevic et al (2004) undertook a qualitative case study investigation within the Australian context to identify the extent to which companies selected had implemented new technologies for the management of supply chain activities. Implementation of new technologies was seen as a necessary though unwanted cost. Ultimately it was discovered that, although the company was actively pursuing value-added technology, actual improvements were implemented very slowly. Consequently, what is being expressed is a disparity within Australian companies between strategic sourcing activities and actual outcomes. Thus, this is an appreciable void in SCM studies. This may be interpreted as a failing of corporate synergy to flow through both the strategic and operational levels of the supply chain efficiently. Thus, calling for further exploratory research into SCM approaches within the Australian business context.

Naslund (2002) suggests the best way "to gain extreme relevance is to understand what is going on within organizations. Therefore some logistics research should include "that the researcher spend time in organizations and research logistics in action" (p.328). This proposed study, as an initial phase, will take these exact steps by researching a small sample of organizations (6-12) in one industry (representative) and its supply chain in action. We will examine the perceptions of senior managers, middle managers and subordinates (three levels of the organization, i.e. corporate, business and functional) and the relevance it has to their function within the value chain. Thus, a three level analysis will be conducted at the corporate, business and functional strategy levels within each case.

Naslund (2002) reaffirms this in saying, "only by being out in the real world can we gather first-hand information to develop knowledge and extreme relevance" (p328).

Alvesson (1996) takes a different view of the strength of qualitative research suggesting that researcher bias and perception may impede 'real' descriptions. Denzin and Lincoln (1994) extend this idiographic methodological view, arguing that meanings are not rigorously examined by known measures and therefore there is greater likelihood of finding empirically-supported theories. Ultimately, it is not the purpose of this proposal to dictate and decide the relevance of one methodological approach or another. However, this proposal is suggesting that it is critical to any proposed research to look at both the strengths and weaknesses of all research methodologies and then use the most appropriate method given the research problem. Silverman (1993), a proponent of the positivist quantitative approach does concede that good research should not differ between the two. Thus, it is proposed that, due to the nature of the context, an exploratory multi-case study methodology will be employed, as an initial phase, followed by a multiple industry survey.

CONCLUSION

This paper raises several key issues that remain underdeveloped and unclear within the context of current SCM theory. Further research, which examines integrated, semi-integrated and independent SCM strategies within the value chain process is proposed. The proposed study will identify how constructs including culture, coordination modes, organization structure and control, interrelate to help build a sustainable competitive advantage through more effective SCM. This study will provide a contrast to that of the global sourcing studies that have dominated this area in the past. Extant research on supply chains in the global context has evaluated functions and their foreign and local operational activities to ascertain alignment of organisational goals. The proposed study will assist SCM theory development in the global sense by building an understanding of culture within a supply chain at the local level. This will create opportunities for further studies to assess the interchangeability and adaptation of supply chains globally.

By applying all three SCM strategies to a selected sample of cases from Australian organizations it will be possible to identify how the cultural construct is understood under different SCM approaches. In doing so, it may be possible to identify a clearer link between the environment and SCM strategy. The applicability of the three broad SCM approaches, or a hybrid or even a new SCM strategy will be an outcome of this research process.

Extant literature is depicting an underdeveloped understanding of the links and processes that need to exist between the operational and strategic levels of the supply chain. By undertaking this study of the three SCM approaches and their applicability to Australian companies, 'corporate synergy' will be examined at both the strategic and operational levels of the supply chain. By examining current business processes at both levels within the supply chain and by looking at coordination modes and how they are affected by 'soft' issues including culture, the proposed study will facilitate greater understanding of the links that make for a streamlined and efficient supply chain at a local level, which has major implications for management of global supply chains.

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