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**Building competitive enterprises
through supply chain management**

Guest Editor: Elkafi Hassini



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Building competitive enterprises through supply chain management

Guest Editor
Elkafi Hassini

Access this journal online _____	339
Editorial review board _____	340
GUEST EDITORIAL	
Building competitive enterprises through supply chain management	
<i>Elkafi Hassini</i> _____	341
A conceptual framework for analysing risk in supply networks	
<i>Seu Keow Cheng and Booi Hon Kam</i> _____	345
Organizational culture and supply chain strategy: a framework for effective information flows	
<i>James Jungbae Roh, Paul Hong and Youngsoo Park</i> _____	361
Accreditation program design: a survey of supply chain professionals	
<i>Paul D. Larson</i> _____	377
An objective evaluation of the Ivey Purchasing Managers Index	
<i>Danny I. Cho and Tomson Ogwang</i> _____	393

CONTENTS

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CONTENTS

continued

A “genomic” classification scheme for supply chain management information systems	
<i>Tim S. McLaren and David C.H. Vuong</i> _____	409
Flexibility and revenue management in the automotive industry	
<i>Kai-Ingo Voigt, Michael Saatmann and Sascha Schorr</i> _____	424

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GUEST EDITORIAL

Guest editorial

Building competitive enterprises through supply chain management

341

Elkafi Hassini

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Abstract

Purpose – The purpose of this paper is to introduce a special issue that looks at how enterprises could build competitive advantage through supply chain management.

Design/methodology/approach – The paper provides an overview of competitiveness within a supply chain framework, introduces the issue papers and summarizes their major features.

Findings – Nowadays competition is increasingly between supply chains rather than individual companies. Thus, one would expect supply chain management to be a key in maintaining enterprises competitiveness. Through conceptual models and empirical studies this special issue's papers demonstrate how designing and operating efficient supply chains, through the effective use of information technology, can provide enterprises with a competitive advantage.

Research limitations/implications – The paper implies that enterprises can associate with a supply chain and develop a mechanism to fairly share surpluses. The papers in the special issue offer insight in to how an enterprise can position itself within a supply chain and how risks and profits can be shared equitably.

Practical implications – The paper introduces articles that report on practical implementation issues of supply chain principles.

Originality/value – The paper suggests a unified framework for the special issue papers.

Keywords Supply chain management, Competitive strategy, Competitive advantage

Paper type Viewpoint

Introduction

By definition, supply chain management strives for the efficient management of supply chain assets, products, information and cash flows in order to maximize the surplus that results from the difference of the price paid by a consumer and all the operational costs that accrue throughout the supply chain (e.g., Sunil Chopra and Meindl, 2007, p. 6). Thus, the competition for market shares is no longer between single forms, but increasingly between supply chains (Taylor, 2003, p. xv). With this understanding, it is clear that, for a firm to gain a competitive advantage in its market, it is necessary for it to be part of an efficiently run supply chain. It thus the purpose of this special issue to offer some perspective on how an enterprise can position itself within a supply chain

The guest editor would like to thank the authors for their contributions. Without the expert advice and diligent reviews by the symposium organizing committee and other reviewers this special issue would not have been possible. Finally, the editor-in-chief, Professor Irani, must be acknowledged for his continuous support and encouragement in arranging for this special issue in the *JEIM*.



and use supply chain management principles to gain competitive advantage. We will first introduce the symposium at which these papers were presented and then describe and summarize the findings of the six papers.

The Fourth Annual International Symposium on Supply Chain Management

The Annual International Symposium on Supply Chain Management is held each fall to bring together researchers and practitioners from around the world. The highlights of the symposium include: a collection of high quality academic papers, practitioner white papers or presentations, keynotes by renowned practitioners and academics, and panel discussions on current topics. This special issue is drawn from the academic papers that were presented during the fourth symposium held from October 4-6, 2006. The First Annual Supply Chain Management Doctoral Colloquium was held on October 4, 2006, in conjunction with the symposium. It is noteworthy to mention that the last four symposia have generated eight special issues in international journals. Further information about the symposium, past and future events, can be accessed on www.scmsymposium.org

The papers

This special issue includes six papers. Table I provides a summary of the key features of the papers along four dimensions: methodology, supply chain management issues, competitive aspects and contributions. Two studies provide conceptual frameworks for the design of competitive supply chains. They address the impact of supply chain network configurations and organizational culture on the performance of supply chains. The remaining four papers provide different professional and functional perspectives on practical aspects of supply chain operational implementations with the goal of achieving a competitive advantage.

In the article "A conceptual framework for analysing risk in supply networks" Cheng and Kam use agency theory to investigate the relationship between a supply chain's network structure and its risk profile. The authors highlight the fact that while there is a unanimous agreement in the research community as to the value of supply chain coordination, it nevertheless can add to the risk complexities that each supply chain partner has to deal with. Thus, the authors work is valuable in shedding some light as to how this risk complexities changes with the supply chain network structure and the task that each supply chain link plays in collaboration.

Roh *et al.* look at how organizational cultures relate to supply chain strategies in the study entitled "Organizational culture and supply chain strategy: a framework for effective information flows". They identify four different organization cultures: hierarchical, group, rational and developmental and link them with four corresponding supply chain strategies: efficient, risk-hedging, responsive, agile, respectively. In addition, for each organizational culture they identify an information flow system: caretakers, defenders, analyzers and prospectors, respectively. They suggest that their integrative framework could be used by management for strategic decision making when designing a supply chain network and its related information technology infrastructure.

The study by Larson on an "Accreditation program design: a survey of supply chain professionals" reports on a survey that was conducted to support a re-design of a

Authors	Methodology	SCM context	Competitive aspect	Contribution
Cheng and Kam	Conceptual framework based on agency theory	Network configurations Risk dynamics	While collaboration can enhance the inter-enterprise competitive advantage, by its nature it adds to the complexity of supply chain risk profile	Provides insights into the dynamics of risk and risk levels change according to the supply chain network structure
Roh, Hong and Park	Conceptual framework based on literature review	Organizational culture Supply chain strategy Information flows	Competing supply chains tend to have a rational culture that is aligned with a responsive supply chain strategy	Identifies four types of organizational cultures and links them to an appropriate supply chain strategy
Larson	Survey of survey of SCM professionals	Professional accreditation programs	Competence requirement for supply chain managers	SCM professionals find that development of general managerial skills to be more important than functional or analytical tools
Cho and Ogwang	Statistical test using principal component analysis	Purchasing Managers Index	Development of indices for the purposes of benchmarking against competition	A new purchasing managers index needs to be developed to accurately reflect the dynamics of the economy
McLaren and Vuong	Qualitative analysis of major SCM software packages literature	Supply chain management information systems	Aids in selecting SCM software packages, a critical component for running competitive supply chains	Software packages taxonomy based on five major functional attributes that are similar to those used by the SCOR model
Voigt, Saatmann and Schorr	Survey analysis of German automotive buyers	Revenue management, demand management, flexibility, build-to-order, automotive supply chain	Understanding customers can help in planning a competitive supply chain	Automotive buyers can be classified into different groups depending on delivery time and alteration requirements to increase revenue and improve supply chain planning

Table I.
Summary of key paper features

professional accreditation program, the Certified Professional Purchaser (CPP) that is delivered by the Purchasing Management Association of Canada (PMAC). The study found that while SCM professionals do not share a common view about the profession, they agree that success in their profession requires the focus on the development of general management skills more than on specific functional and analytical tools.

In the paper “An objective evaluation of the Ivey Purchasing Managers Index” Cho and Ogwang use principal component analysis to study the appropriateness of the Ivey Purchasing Managers Index (PMI) for businesses that are functioning within the Canadian economy. Their statistical tests suggest that a new PMI should be developed to better reflect the dynamics of the Canadian economy. They argue that such an improved index will equip supply chain management professionals with more accurate tools for better-informed forecasting and policy making.

McLaren and Vuong work on “A ‘genomic’ classification scheme for supply chain management information systems” develops a taxonomy of supply chain management information systems. Starting from a qualitative analysis of the literature from seven prominent software packages, they found 82 attributes that could be classified into five categories that match those used by the Supply Chain Operations Reference (SCOR) model: primary supply chain processes, data management, decision support, relationship management, and performance improvement. In addition to providing a hierarchical view of supply chain information systems, the authors’ work can be used to aid firms in the selection of the appropriate supply chain management software package.

In the paper titled “Flexibility and revenue management in the automotive industry” by Voigt *et al.* the authors survey German automotive buyers to gain some insights into customers purchasing behavior. They find that manufacturers tend to over-emphasize customer valuations for delivery and configuration flexibility. The authors argue that by studying their customers, auto manufacturers could segment their buyers according to their delivery time and configuration flexibility and employ revenue management techniques to streamline their supply chain operations.

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A conceptual framework for analysing risk in supply networks

Analysing risk in
supply networks

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345

Abstract

Purpose – Sharing of risk benefits supplies network collaborations. The complex mix of heterogeneous collaborators in supply networks, however, also increases the complexity of the risk profiles of inter-related components within these networks. For a given network collaboration, several structures of network relationship are possible, with each carrying distinctive risk implications. This paper seeks to develop a conceptual framework for analysing the differential risks in alternative network structures.

Design/methodology/approach – To capture the structural significance of inter-organisational dependency in networks, alternative typology of network relationships is formulated using agency theory. Basic constructs were developed for analysing risks in supply networks, with configurations ranging from the single-principal, single-agent to the complex multi-principal, multi-agent scenarios.

Findings – The study finds that dynamics of risk in network systems depend not only on the typology of networks, but also on the functional role of each collaborator inherent in the network through agreements on supply and incentives, and supply performance.

Originality/value – The proposed framework provides a structured approach for identifying and assessing risk dynamics and their differential impacts on different levels of supply networks. It provides insights into the dynamics of risk events and identifies network configurations that are vulnerable to different levels of risk.

Keywords Networking, Supply chain management, Risk assessment, Risk management

Paper type Research paper

Introduction

Increasing competition in meeting complex service delivery has transformed most strategic business practices from a simple single-firm approach to dynamic multi-firm network collaborations. The significance of inter-firm dependency has been widely investigated (see for example Barrat, 2004; Bowersox *et al.*, 2003; Golicic *et al.*, 2003; Holweg *et al.*, 2005; Horvath, 2001; Min *et al.*, 2005; Pathak *et al.*, 2003; Sanders and Premus, 2005; Theodore *et al.*, 2001). While collaboration has the potential to enhance inter-firm competitive advantage, the complex mix of heterogeneous collaborators also adds to the complexity of the risk profiles of inter-related components within business networks. For a given network collaboration, several structures of network relationship are possible, each of which carries distinctive risk implications. Consequently, the single-firm risk analytical approach (Ellram and Edis, 1996;



Horvath, 2001; Lambert *et al.*, 2004; Min *et al.*, 2005; Smeltzer and Siferd, 1998; Surana *et al.*, 2005; Svensson, 2000) is considered inadequate in explaining the risk dynamics embedded in network systems.

Drawing on the tenets of agency theory (Jensen and Meckling, 1976), this paper outlines a conceptual framework for analysing supply chain risks based on the precepts of inter-organisational transactional relationships in a network environment. By exploring plausible relationship structures in network collaborations, the proposed framework delves into the differential risks embedded in alternative network structures. It explores the differential dynamic of risk (i.e., risk precondition, risk event, risk footprint, and risk propagation) amongst the collaborators, depending on their functional roles and their relationships with other collaborators within a network system and with other network systems.

Supply chain operations typically involve a number of stakeholders, who not only provide resources, but also “appropriate value” from participating in different stages of the supply chain (Cox *et al.*, 2001). A network-based framework, which encompasses a variety of inter-organisational relationships (Nassimbeni, 1998), therefore provides a robust basis for a rich description and analysis of a multi-actor supply chain operation. It also assists in understanding important inter-organisational relationship factors, such as trust, commitment, and adaptation, which affect supply chain outcomes.

The next section will commence by outlining the basic construct and key assumptions adopted in developing the framework. This will be followed by a review of selected supply-related risk factors arising from the configuration of alternative relationship structures as the basis for developing the analytic framework. The key components in the proposed risk analysis framework will then be presented. This will be succeeded by an illustrative application of the proposed framework in analysing risk in four alternative network models. After a discussion of the key features of the proposed framework, the paper will conclude with a qualitative assessment of risk and resilience in alternate networks.

Basic construct and assumptions

From an operational perspective, the building blocks of supply chain management are embedded within the relationships between its partners. Complex supply network structures emerge with the aid of principal-agent (P-A) concept, where a principal (P) refers to the entity who delegates specific tasks to an agent (A), who performs the tasks (Elsenhart, 1989). To develop the analytic framework, this paper places the P-A supply relationship in the context of a business network, which has been defined by Sandhu and Helo (2006, p. 601) as “two or more organizations engaged in long-term relationships that position them as a ‘mechanism’ in markets and hierarchies”. Firms taking part in one end-product (such as sporting goods of a particular brand) supply network are assumed to be competing against alternative comparable end-product networks (i.e., sporting goods of other brands). Further, an agent of an end-product network may also be participating in other non-comparable, end-product networks (i.e., merchandise other than sporting goods), which will be referred to as latent networks.

In view of the complexity in network configuration, a structured approach to developing a risk analysis framework is considered appropriate, particularly to capture the key properties of multi-firm collaboration, such as delegated decision making, interdependency, and interactions. Within the context of an end-product supply network, risk is perceived to be distributed differentially amongst the entities