Security Solutions of Supply Chain Management

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Abstract: International trade is an essential driver for economic prosperity. The global trading system is vulnerable to terrorist attacks that could severely damage the entire global economy. Articles on supply chain teach us the basics of visibility, variability, velocity, and value (the 4 Vs conception). At the same time there is no word about vulnerability! The supply chain is clearly vulnerable; therefore Supply Chain Security (SCS) doubtlessly comes to the fore as an issue of high priority. In today's global market, a terrorist incident or attack involving a critical segment of the supply chain infrastructure will impact you anywhere your business is located. If a company chooses to invest in new security protocols and its competitor does not, the company may have to raise its rates, which could in its turn drive business towards the competitor's. Let us take the question of increased security and apply it to the hotel industry. Four of five hotels in one city, for example, have great security procedures, but the fifth hotel has none. It is fair to assume that this hotel's guests are more at risk for robbery, assault, or even a terrorist attack. Should the unsecured hotel fall victim to a terrorist attack, all hotels in the area will lose substantial revenue and business – not just the hotel that didn't invest in security procedures. The same principle can be applied to companies operating within every aspect of the global logistics industry. A successful attack on this vital conveyor of the global economy will impact business around the world. While the interconnected nature of the global market is great for business, it is exactly what makes securing the supply chain so challenging. SCS refers to efforts of enhancing the security of the supply chain: the transport and logistics system for the world's cargo. It combines traditional practices of supply chain management with the security requirements of the system, which are driven by threats such as terrorism, piracy, and theft. The appropriate platform for this initiative is readily apparent.

Keywords: Supply Chain Management; Supply Chain Security Management; Strategic business planning;Total Quality Management.

1. Introduction

Supply chain managers are increasingly becoming aware of the new operating environment after the terrorist attacks on the World Trade Center and the Pentagon on September 11, 2001. These events exposed the pre-existent and latent risk of disruption to supply networks from terrorist attacks. The risk was there all along but these attacks made it real and foremost in our minds. Furthermore, these events began to expose the more significant interdependence that exists between all firms in the supply network. The interdependence also includes reliance on the governmental agencies involved with inbound material flows and transportation infrastructure. Given these interdependencies, if one firm fails in the supply network, the entire network performance is put at risk. Understandably, this constitutes a new operating environment where firms need to think in terms of their supply network and not just their individual performance.

Novelty of the research of Supply Chain Security Management is to analyze, compare, and adapt various types of research, analysis and case studies surrounding the broad field of supply chain security management programs, standards, measures, trade-offs, and costs. Generally the research is targeted to the following two audiences:

1. It is intended to assist companies in international trade and logistics to better plan and prepare for the implementation of new supply chain security standards; and
2. It is intended to help governmental administrations, mainly customs and transportation agencies, to better understand the realities and constraints of international supply chains, while developing new security standards.

The best way to secure a company against disasters and attacks is to break down those preconceptions and make security everyone's obligation. The costs of implementing necessary security measures are insignificant compared to the potential expenditures due to damage to the worldwide supply chain infrastructure and the global economy. As to government organizations that control and administer the international movement of goods, Customs administrations are in a unique position to provide increased security to the global supply chain and to contribute to socio-economic development through revenue collection and trade facilitation. There is a need for an endorsed strategy to secure the movement of global trade in a way that does not impede but, on the contrary, facilitates the movement of that trade. Securing the international trade supply chain is only one step in the overall process of strengthening and preparing Customs administrations for the challenges of the 21st Century.

2. How do you improve security without jeopardizing supply chain effectiveness?

Government and business leaders now are searching for ways to prevent terrorist attacks on or through our freight distribution systems. At the same time, questions have been raised within the supply chain profession as to whether existing best practices remain sound. There is no doubt that significant changes need to be made — and that these changes will have a significant cost. The goal of this study is to help those leaders succeed in this dual objective, reducing security risks while, at the same time,

contributing to supply chain productivity and effectiveness. One of the most effective strategies may be to apply the lessons of successful quality improvement programs. We can learn from the quality movement and begin to think about supply chain security more in terms of prevention, process control, and design improvements that will restore supply chain confidence while increasing productivity and reducing costs. The quality movement started with the recognition that defects can be very costly to a company. The following principles that shaped the quality movement can help frame our responses to the supply chain security challenge.

The new operating environment calls for designing security and resilience into the supply network. Security and resilience are unique characteristics that require distinct plans in order to develop and create these characteristics within the firm. Fortunately, there are several actions that firms can take which will contribute to both improved security and resilience, although this is not always the case. The key takeaway is that it is critical to design for both security and resilience. New organizational capabilities are also called for in this environment. Specifically, firms will need to pioneer new relationships with governmental agencies that now share responsibility for making the supply network secure and resilient. Additionally, firms will need to develop deeper relationships with suppliers and customers throughout their supply networks to co-create a more secure and resilient network. Internally, the largest organizational challenge may be in establishing at the individual level a solid understanding of the interdependence of the systems, and the educational and training systems needed for robust network designs and planned responses to disruptions.

For operation excellence in SCS performance management goals must be aligned and software should be deployed to serve the entire enterprise. SCS performance management consists of doing three things: aligning plans with goals, optimizing future activities to reach goals, and understanding business results and their impact on the supply chain and, through it, the organization. Stated somewhat differently, SCS performance management answers three key questions about business: What should we be doing? How are we doing? And what can we do to make it better? SCS performance management is the practice of managing the effectiveness and value of your supply chain by aligning trading partners, service providers, employees, processes and systems to a common set of goals and objectives. When this practice is applied at the three key levels – strategic, tactical and operational, of an organization, it provides not only a framework but a toolset with which to address and resolve the uncertainties and risks of the supply chain, and thus to improve business outcomes. That may sound challenging at first, but addressed systematically it is easier to understand and do than it may initially seem. A focus on supply chain protection and security requires a shift in the firm's perspective:

- Shifting from an internal focus on corporate security to a cross functional perspective involving supply chain, security, and quality assurance. Within supply chain, the cross functional team needs to include representatives from procurement, production, warehousing, and transportation;

- Shifting from preventing theft (focus on keeping food in buildings and trucks) to keeping terrorists and their agents out of supply chain facilities;
- Shift from focusing primarily inside the company to being concerned about the end-to-end supply chain. The firm must now worry about what happens to the product outside its control;
- Shift from focus on the firm's relationship with its supplier and customer only to including the supplier's suppliers and customer's customers. This also considers the trend for firms to outsource manufacturing, storage, and transportation responsibility to focus their primary efforts and other functions such as new product development and marketing;
- Shift from country or regional operations to global operations.

That all means – a shift from contingency planning to determining how to deal with crises.

Proposing that, logistics can benefit from borrowing theories from other areas of study and presenting examples of theories from other disciplines that have already been applied to logistics issues offer potential applications from a variety of non-logistics disciplines, including accounting, anthropology and sociology, computing, economics, marketing, philosophy, political science, and psychology. This research is attempt to analyze examples from various disciplines in detail and identifies possible applications of the theory, subsequently it is planned to formulate conclusions on the benefits of "transferring" non-logistics theories to logistics research and, as a result, to contribute to practice and theory development. Besides Total Quality Management (TQM), Organization theory (OT) has the potential to offer provocative and helpful wisdom to the field of supply chain management, yet OT's potential has remained largely underdeveloped in the supply chain arena. As a result, enormous opportunities exist to integrate insights from organization theory, marketing, outsourcing and supply chain management in order to build understanding of why some supply chains excel while others do not. The research provides an overview of the contributions toward developing such a synthesis offered by each of the articles contained in this special issue. Collectively, the articles take a significant step toward closing the gap between 'what we know' and 'what we need to know' about supply chain security management.

Traditionally, supply chain management has been viewed predominantly as a process for moving materials and goods. From this view, supply chain management has been viewed as a support function that helps organizations implement their strategies.

Best value supply chains take an important additional step. Their focus is on strategic supply chain management—the use of a supply chain not merely as a means to get products to where they need to be, but also as a means to enhance key outcomes that drive firm performance. In other words, strategic supply chain management elevates supply chain management from a function that supports strategy to a key element of strategy. An emphasis on strategic supply chain management does not imply a need to use cutting-edge and expensive equipment, nor to emphasize rich teamwork at all stages in the chain. Instead, the emphasis is on matching the chain's approach to each problem to the nature of the problem that needs to be solved. Beyond a general focus on strategic supply chain management, best value supply chains are further distinguished from other

chains by how they approach issues of agility, adaptability, and alignment Best value supply chains use strategic supply chain management in an effort to excel in terms of speed, quality, cost, and flexibility.

Despite the value of this concept to modern firms, little is known about how prominent theories can help shed light on what distinguishes these chains from others and makes them exceptionally successful. As an example could be mentioned Demand chain management (DCM). It is a conceptually new business model aimed at creating value in today's marketplace, and combining the strengths of marketing and supply chain competencies. Demand chain design is based on a thorough market understanding and has to be managed in such a way as to effectively meet differing customer needs. Based on a literature review as well as the findings from a co-development workshop with marketing and supply chain professionals, a conceptual foundation for demand chain management is proposed. Demand chain management involves (1) integrating the demand and supply processes; (2) managing the digital integration (3) configuring the value system and (4) managing the cross-functional working relationships between marketing and supply functions.

3. The role of marketing and SCM

Propositions for the role of marketing within demand chain management and implications for further research in marketing are derived. Conceptual and empirical research on the concept of market orientation has long suggested that interfunctional coordination is key in achieving the main goal of marketing, the creation of superior customer value. As a consequence, a stream of research on the relationship between marketing and R&D, marketing and finance, marketing and engineering and the integration of marketing with several other functions in the formation of business strategy can be traced. The overarching rationale of this research is that customer value is being created through the integration of areas that are not traditionally associated with marketing.

One of these models, which have rapidly become a strategic priority in many companies, is supply chain management (SCM). SCM has grown in importance since the early 1990s, although the approach was introduced in early 1980. SCM can be defined as "the management of upstream and downstream relationships with suppliers and customers in order to create enhanced value in the final market place at less cost to the supply chain as a whole". The synergies between SCM and marketing have been widely acknowledged, leading some to conclude that better coordination could define competitive superiority in new ways. The most recently introduced approach of demand chain management (DCM) seems to capture the proposed synergies between SCM and marketing by starting with the specific customer needs and designing the chain to satisfy these needs, instead of starting with the supplier/manufacturer and working forwards.

Such integration between customer - facing and supply functions seems mandatory in today's marketplace, where customers benefit from having real-time access to their accounts, making real-time changes in their customized product configuration and

communicating their individual service requirements. Collaboration between supply functions and marketing needs to ensure that supply functions are involved in the marketing planning at an earlier stage, are involved in customer priority decisions and, most importantly, need to be able to reject marketing decisions if they are not financially viable to the business. On the other hand, marketing must become more cost driven and less inclined to agree to sales that are not optimal for the business.

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