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Managing Supply Chain Finance- A Conceptual Framework

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Abstract

In today's challenging business environment, companies are under constant pressure to reduce costs and maintain profitability. The importance of proper supply chain management (SCM) to optimize operations across the value chain has been well documented focusing on the design and optimization of the flows of goods and information. One aspect that has been often neglected and overlooked is the financial flows along the SC which form an essential part of the continuum of the business operation. Supply chain finance (SCF) has therefore been recognized as the next step in the evaluation of SCM. In this paper, an attempt has been made to present a conceptual framework of SCF highlighting its linkage with the organization's strategy, identifying the core and focus areas of SCF, challenges in its implementation and its impact and review.

Keywords: Supply Chain, SC, Supply Chain Finance, SCF, Conceptual Framework

1.0 Introduction

In the fast paced business world of today firms compete on a global level and the competition is between their SC rather than between individual firms. This competitive pressure and increasingly tough business environment have resulted in complex and dynamic SC (Zhang et al., 2003). The importance of proper supply chain management (SCM) to optimize operations across the value chain has been well documented focusing on the design and optimization of the flows of goods and information (Childerhouse and Towill, 2003). However, one aspect that has been often neglected and overlooked is the financial flows along the SC which form an essential part of the continuum of the business operations (Chen and Paulraj, 2004; Pfohl and Gomm, 2009). SC now requires multi partner integration for optimized flow of materials, information and funds amongst the SC members.

In physical SC, collaboration and synergy amongst the SC partners has been achieved through a number of practices such as ‘collaborative planning and forecasting’, ‘vendor managed inventory’, ‘enterprise resource planning’ (Cohen and Lee, 1988; Thomas and Griffin, 1996; Chen and Paulraj, 2004). However, organizations today are searching for the same visibility in their financial SCs that they enjoy in their physical SC. In the attempt to minimize incremental costs at every touch point along today's long and complex global SCs, they are looking more closely at receivables and payables. This is because every activity that happens along the physical SC generates a financial effect. Essentially, the financial SC involves the flow and use of cash throughout the physical SC, where there is an accompanying flow of cash in the transfer of products, services and information.

Financing is made possible at different points of the SC based on event triggers like purchase-order issuance, invoice issuance, advanced shipping notices and invoice approval (Figure 1). The spectrum of innovative SCF programs range from pre-shipment financing like raw material financing, purchase-order financing, in-transit inventory financing like vendor-managed inventory finance, third party inventory finance to post-shipment financing like receivables financing, early-payment discount programs and payables extension financing. The focus of these solutions is to provide SC partners with more control over their financial processes and more options to optimally use cash and credit.

There are many definitions of SCF, however it is more appropriate to define SCF as "*as managing, planning and controlling all the transaction activities and processes related to the flow of cash among SC stakeholders in order to improve their working capital*" (More and Basu, 2011). New value delivery for buyers and suppliers is enabled when the foundation of e-procurement and trading partner networks are wedded to hard-dollar financial savings across the entire SC. It is therefore a combination of technology and trade financing that unites buyers, suppliers and financial intermediaries. SCF initiatives drive results to the corporate bottom line while improving (or protecting) global and local SCs with tangible benefits – without simple cost-shifting, thus providing the kind of benefits that e-business automation has been expected to deliver (Aberdeen, 2006).

Great opportunities lie ahead in managing the financial flows efficiently. However, currently the financial SC is in a critical phase of evolution. The challenges facing the innovative SCF solutions are quite complex and significant. It is important to analyze and understand interrelationships amongst strategy, challenges, abilities and core areas of SCF. In this paper, an attempt has been made to provide a conceptual framework for SCF by putting it within the firmament of a firm's strategy and integrating challenges, capabilities, focus areas and other issues related to SCF.

2.0 SCF – a Framework

Till date, we have not come across any published conceptual model for managing, controlling, improving and assessing SCF initiatives. Based on an extensive literature review, an integrated conceptual model of SCF has proposed as shown in Figure 1. There are ten sub-systems in the model which are numbered from 1 to 10. All these sub-systems in the model interact with the core of SCF.

There are many challenges that confront successful implementation of SCF programs at both the organization as well as at the SC level. In the current business climate, counterparty risk remains a major concern. Access to capital continues to be severely limited in a tight credit environment. The cost of financing is at a premium, even while organizations are intensifying efforts to reduce costs, given stalled revenue growth in the current global recession. The failure of a trading partner can disrupt a major concern. The failure of a trading partner can disrupt an entire SC. Adverse economic conditions have underscored that a SC is only as financially strong as its weakest link. It is these pressing challenges that provide the impetus to an organization to assess the suitability of various SCF practices for itself. Furthermore, the complexity and variety of challenges in SCF imposes a number of constraints in managing the cash flows in the value chain. The dynamics of challenges continuously change the constraints that contribute to difficulties in managing and controlling operations and implementing effective strategies in the SCs to enhance SCF. It is therefore extremely important to identify the critical challenges in order to chalk out the next developments in the emerging field of SCF and for its widespread application in global SCs as shown by the sub-system 1.

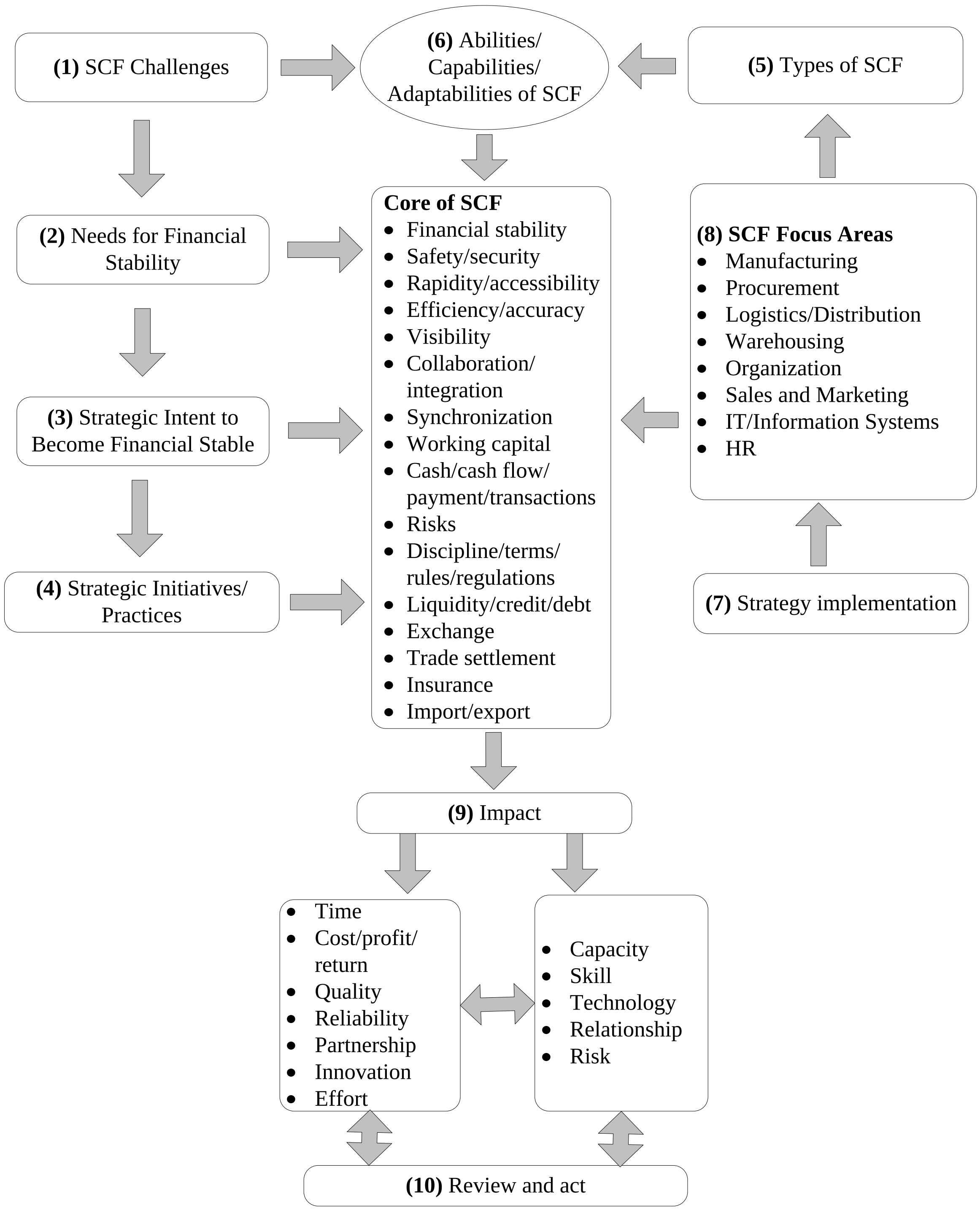

Figure 1: Conceptual framework of SCF

Once the key SCF challenges are identified, the need for financial stability through SCF initiatives have to be integrated within the overall strategy of the SC, as shown by the sub-systems 2, 3 and 4. It is important to understand that SCF does not work in isolation. In order to derive maximum benefit from SCF initiatives, it is imperative that these initiatives derive their legitimacy from the strategic direction of the company. However, it does not mean that SCF cannot be implemented gradually. In fact, companies should carefully analyze their requirements, identify deficiencies and requirements, scan the market for various solutions on offer and only then make an informed decision.

SCF program are of different types, however for implementing different types of SCF, organization should have some inherent abilitities or capabilities of SCF. It is presented by the subsystems 5 and 6 deal with different types of SCF and the capabilities that need to be developed for maximum impact. For example, it helps the buyer optimize the SC by offering bank-assisted Open Account (OP) processing, buyer-backed and direct seller financing, Purchase Order (PO) and invoice data management, and data matching across OA, bank- assisted OA and Letters of Credit (LC) among other things. It also helps meet the seller's export finance needs for pre-shipment, shipment and post- shipment financing from the seller's bank for export LC and outward collections and from the buyer's bank for bank-assisted OA and import LC. It provides liquidity to sellers through receivables financing. Two key enablers in this context are technology and effective SCM. By being the prerequisite for automation (speed) and transparency (visibility), new technologies, especially in IT and telecommunications, have paved the way for SCF. Other technologies such as web-based applications and other interactive reporting tools are essential to successful implement a SCF program and provide the required transparency. They foster a better collaboration between suppliers and buyers, because improved communication enables the development of trust and more sustainable relationships (Hofmann and Belin, 2011). Similarly, through SCM companies better managed their SC through the improved collaboration of internal departments and external trading partners (Mentzer and Konrad, 1991). Having experienced substantial improvements by applying SCM in the physical SC, companies are now turning their attentions to the financial SC to attain similar benefits (Avanzo et al., 2003; Otto and Kotzab, 2003). It goes without saying that integrated solutions would have to be tailor made for different companies.

Sub-systems 7 and 8 deal with implementation of the company’s strategy in terms of SCF initiatives by concentrating on the focus areas of SCF. In an increasingly global marketplace, it is more challenging than ever for corporations to keep their competitive edge. Yet a host of problems impede this. For example, due to the inability of tracking shipment of orders, buyers cannot accurately predict when shipments will arrive or payments are due. To compensate, buyers are holding higher levels of inventory to prevent outages and cash to ensure funding is available to meet payment obligations. Yet pressing sellers for longer payment terms has increased prices, eroded relationships with sellers, and decreased the stability of the buyers' supplier base. The same dynamics make it difficult for sellers to obtain timely payments. Typically, they must wait at least 45 days for payment, and sometimes as long as 90 or 120 days. Due to their geographic location and size, sellers typically lack access to reasonably priced short-term financing. Pressure from buyers to lengthen payment terms only intensifies the situation, which often results in higher prices or an inability to continue as a supplier. The result is a financially unstable and higher-risk supply base. It is obvious from the above that to counter these deficiencies SCF must focus on all aspects of a firm’s extended value chain including marketing, sales, logistics, manufacturing by incorporating partners and suppliers in the setup.

The central block in the figure list the core factors that anyway come into picture while focusing on SCF. Perhaps at the very heart of SCF lie the three concepts of agility, speed and range. Agility in SCF is extremely important, as the offerings must evolve along with the client's requirements in order that they remain competitive. And, in today's world where business is conducted at a break neck pace, the SCF practices should also be in consonance with that, otherwise it might to lead very high opportunity costs. Range is also very important, as opportunities for extracting value through SCF exist along the entire SC, and as such these SCF practices should be focused on deriving maximum benefit. Moreover, it would help as increased scale and scope would lower overall costs. Apart from these, other aspects that comprise the core of SCF include uniformity (of results etc.), competitiveness (of offerings), quality, collaboration, safety and security of transactions, visibility and synchronization of cash flows across the chain, disciplines, rules, terms and regulations etc.

Sub-system 9 highlights assessment of SCF. To assess the SCF, a number of key performance measures can be used such as days sales outstanding, days payable outstanding, days in inventory, working capital ratio, debt service coverage ratio, total number of monthly invoices, total value of monthly invoices, number of dispute cases, inventory turns, return on capital etc. that could relate to time, cost, quality, partnership, reliability and effort. In other words, the assessment would be related to skill required, capacity, technology, relationship and /or risk related to SCF.

Subsystem 10 reinforces the fact that in today's world constant change and up gradation is a reality. SCF initiatives should also be so geared that continuous improvement through periodic review, feedback and corrective actions are carries out as soon as possible.

There are many benefits of implementing SCF to SC players (supplier and buyer) such as increase in - streamline of transaction activities & processes, cost transparency, stability of SC, utilization working capital, improves- cash flow management, return on capital, DPO, co-operation with suppliers, customer service, enhance- dispute management of invoices, cash forecasting, and also reduce payment cycle, processing costs, and reduce DII. Therefore, it is important to understand financial SC and its implications and impacts.

3.0 Conclusion

The current business environment where pressure on SC is growing because of the economic downturn, refinements to the physical SC no longer have a significant impact. As a result, an interest has been mounting on SCF solutions to ease the burden. Financial institutions, in particular, who are keen to lend but are reluctant to deteriorate their risk profiles further, are exploring innovative SCF solutions that include extending credit secured against robust assets, such as invoice debt, loans against receivables etc. In this challenging scenario, an attempt has been made to clearly delineate SCF as a potential game changer in the ultra-competitive business environment. It has been tried to stress that SCF is not a standalone entity; rather it legitimizes its existence by helping organization in reaching their strategic goals. One of the strategic goals is to optimize working capital of individual players or across the SC. To better comprehend the intricacies of SCF, a conceptual framework has been developed highlighting enablers, focus areas, challenges and potential impact of SCF. The framework may help manager to implement and execute the SCF initiatives through a number of crucial steps and achieve a win-win situation among SC players.

References

Aberdeen Group Report (2006), “New strategies for financial supply chain optimization”, available at: http://www.aberdeen.com/Aberdeen-Library/3606/ RA_BM_ FinSC Optimization_VS_BE_3606.aspx (accessed 11 September 2011).

Chen, I. J. and Paulraj, A. (2004), “Understanding supply chain management: critical research and a theoretical framework”, *International Journal of Production Research*, Vol. 42, No. 1, pp. 131-163.

Cohen, M. A. and Lee, H. L. (1988), “Strategic analysis of integrated production-distribution systems: models and methods”, *Operations Research*, Vol. 36, No. 2, pp. 216-228.

Christopher, M., Peck, H. and Towill, D. (2006), “A taxonomy for selecting global supply chain strategies", *International Journal of Logistics Management*, Vol. 2, No. 2, pp. 277-287.

Dalmia, S. (2008), *Financial Supply Chain*, Tata McGraw-Hill, New Delhi.

Avanzo, R., Von Lewinski, H. and Van Wassenhove, L. N. (2003), “The link between supply chain and financial performance”, *Supply Chain Management Review*, Vol. 7, No. 6, pp. 40-47.

Hofmann, E. and Belin, O. (2011), *Supply Chain Finance Solutions*, Springer Verlag, Berlin.

Mentzer, J. T. and Konrad, B. P. (1991), “An efficiency/effectiveness approach to logistics performance analysis”, *Journal of Business Logistics*, Vol. 12, No. 1, pp. 33–62.

More, D.S. and Basu, P. (2011), “Challenges of supply chain finance: a hierarchical model”, Proceeding 22nd Annual POMS conference, April 29 to May 2, Reno, Nevada, U.S.A.

Otto A., Kotzab H. (2003), “Does supply chain management really pay? six perspectives to measure the performance of managing a supply chain”, *European Journal of Operations Research*, Vol. 144, No. 2, pp. 306-320.

Pfohl, H. C. and Gomm, M. (2009), “Supply chain finance: optimizing financial flows in supply chains”, *Logistics Research*, Vol. 1, pp. 149-161.

Thomas, D.J. and Griffin P.M. (1996), “Coordinated supply chain management”, *European Journal of Operations Research*, Vo. 94 Issue 1, pp. 1-15.

Zhang, Q., Vonderembse, M.A. and Lim, J.S. (2003) ‘Manufacturing flexibility: defining and analyzing relationships among competence, capability and customer satisfaction’, *Journal of Operations Management*, Vol. 21, No. 2, pp.173–191.