

2 Literature Review

The main objective of this chapter is to create a common understanding of the theoretical basis. It also sets the framework for further consideration of the dissertation. Especially important is a consistent tenor in the subjects of purchasing savings, creating a win-win situation, and the relationship between different topics in this chapter.

2.1 Supply Chain Management

This section will cover in brief the history of supply chain management with its main stages of evolution. The interpretation, which has changed over the decades, as well as its tasks and objectives will also be discussed. Finally, critical success factors are identified that significantly influence the company's sustainable success when supply chain management is applied.

2.1.1 *The History Of Supply Chain Management*

In practice, the history of supply chain management (SCM) basically extends back to when mankind learned to build organizations. However, its modern roots harken back to its military origin (Batten, 2008: 49) during the period 1940–1946 (Fearon, 1968: 48). Monczka, Handfield, Giunipero, and Patterson (2011: 23) describe this period as “The War Years.” The modern roots of SCM therefore reach back to the time when the armies began to consider logistics and supply chain (SC) as part of their proper strategy (Batten, 2008: 49).

From 1947 until the end of the '70s (Monczka et al., 2011: 23–24), a variety of management disciplines focused on the various functional areas. These were, just to name a few, logistics, customer service, operations management, and in some cases sales and marketing. We ultimately arrived at SCM via these different functional areas. SCM's premise was that the crucial link for efficient, effective customer satisfaction is the integrated action of all functions and companies involved in the SC (Speh, 2008: 247).

“The Global Era” followed, lasting until 1999. Procurement entered into focus at this time. Never before in industrial history had competition intensified so quickly, and SCM began to grow during this period.

More than ever before, companies concentrated on managing material, services, monetary, and information flows from suppliers to end customers (Monczka et al., 2011: 25). SCM has been compared to military operations in which a logistics problem can claim more victims than the war itself. In the worst case, it can even lead to an army's losing the war. In the economy, an SC dysfunction can affect growth and, in the worst case, lead to the SC's collapse (Batten, 2008: 49).

SCM has been emphasizing the importance of the suppliers since 2000. The relationship with the supplier tends ever more toward a collaborative approach with precisely selected suppliers. Among other things today, supplier development, full-service suppliers, sustainability in the relationship, and total cost suppliers are factors that make a special contribution to the SC. In this period of “integrated supply chain management” (Monczka et al., 2011: 25), the emergent SCM concept is absorbing individual functions such as logistics, procurement and materials management/supply management.

The outsourcing issue is another trend that still continues today. Here for example, parts of the procurement process are purchased externally (Hahn & Kaufmann, 2003: 262). Distributors (purchasing card provider) can be involved as part of C-part management. They offer companies the required goods and services with the help of catalogs (Orths & Ruland, 2002: 929–931). In addition, the company's activities today are increasingly managed through electronic means. The Internet plays a very important role here (Hahn & Kaufmann, 2003: 269–270).

Due to increasingly complex supplier structure, supply network management (Vögele, 2005) or a supplier swarm (Gloor, 2006) are more often talked about these days than of a conventional SC. Due to the ever-increasing competition on world markets, companies develop new techniques and methods to optimize the SC and maximize potential for their own business growth (Batten, 2008: 49–50).

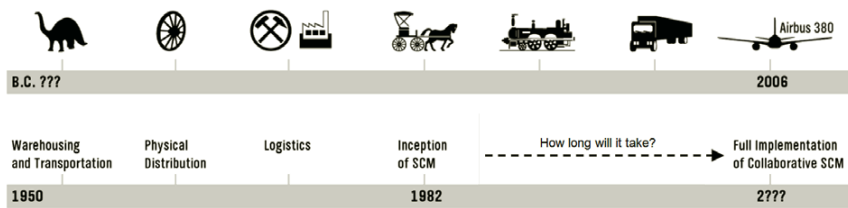


Figure 1: The evolution of the SCM concept

Source: Speh, 2008: 247; modified

Figure 1 describes the evolution of the SCM concept (see Johnson, Leenders & Flynn, 2011: 5–7). It shows that, given the relatively immature nature of the SCM discipline, it is not surprising that its implementation has not yet been fully realized. Therefore, it can in fact take some time before the full potential is realized after the SCM approach is completely implemented (Speh, 2008: 247).

The evolution of the term “supply chain management” in theory dates back to the '80s. Anglo-American consultants coined the term in the United States during the early '80s (Houlihan, 1985; Jones & Riley, 1985). Oliver and Webber (1992) can be cited as examples of practice-oriented SCM. The SCM concept was taken up by the theory in the late '80s, initially only in the United States.

People like Bothe (1989), Christopher (1992), Davis (1993), Ellram (1990), Ellram and Cooper (1993), Fisher (1997), Hewitt (1994), Macbeth and Ferguson (1993), Stevens (1989), and Towill (1996) were significantly involved in implementing the SCM concept in theory. In Germany, SCM theory and practice were first established in the mid-nineties (Werner, 2010: 3).

SCM evolved from a marginal phenomenon in the '80s and '90s into a major theme in literature and business. Since 2000, the number of scientific papers and publications on this subject has increased greatly (see figure 2). This illustrates how much relevance is currently attributed to SCM. Figure 2 shows an EBSCO database evaluation based on the keywords “supply chain management” in publications' title.

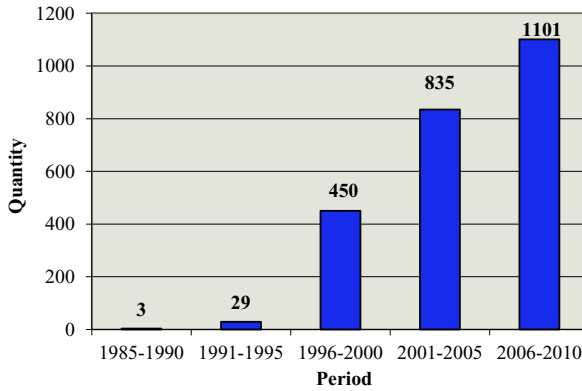


Figure 2: Number of scientific publications on SCM

Source: Author's illustration; EBSCO, 2010

The reason SCM is becoming increasingly important for the economy is the potential that companies want to realize by implementing effective SCM. IBM was able to tighten value-added activities to realize cost savings of about seven billion U.S. dollars in fiscal 2004 (Wanner, 2005: 1).

Becker (2004: 86) mentions that the consulting company PRTM attributes the following potentials to SCM:

- Inventory reduction of 50% to 80%.
- Delivery performance improvement of 10% to 25%.
- Overdue orders reduction of 70% to 90%.
- Order processing time reduction of 40% to 75%.
- Overhead costs reduction between 10% and 30%.
- Manufacturing cycles reduction of 30% to 90%.

Taking these figures into consideration, Werner (2010: 1) suggests that they should be evaluated critically. It cannot be proven that improvements are attributable solely to SCM. However, it does seem to confirm that the SCM approach harbors immense

potential to improve company processes. A company can save a lot of money through process improvement and the forced management of the organization's internal and external interfaces.

2.1.2 Definition And Objectives

According to Gibson, Mentzer and Cook (2005: 17), SCM is a discipline still in its infancy. Thus no single definition has yet been formulated. Just as SCM's relevance for the economy has changed, its definition has shown itself to be highly variable in the recent years.

Practitioners and academics have offered a variety of definitions for the SCM concept. A brief overview of definitions existing in the literature will be given below. The information in the table is arranged by the year of each definition's publication.

Table 1: Selected SCM definitions

Year	Definition
1994	“Supply Chain Management covers the flow of goods from the supplier through manufacturing and distribution chains to the end user . . .” (Christopher 1994: 22).
1997	“Supply Chain Management is a collaborative-based strategy to link cross-enterprise business operations to achieve a shared vision of market opportunity . . .” (Bowersox, 1997: 181).
1997	“Supply chain management is the integration of business processes from end user through original suppliers that provides products, services and information that add value to the customer . . .” (Cooper, Lambert & Pagh, 1997: 11).

Year	Definition
2004	“The process of planning, implementing, and controlling the efficient, cost-effective flow and storage of raw materials, in-process inventory, finished goods, and related information from point of origin to point of consumption for the purpose of conforming to customers requirements . . .” (Simchi-Levi, Kaminsky & Simchi-Levi, 2004: 3).
2005	[Supply chain management is] “. . . the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole . . .” (Christopher, 2005: 5).
2007	“Supply Chain Management is the design and management of seamless, value-added processes across organizational boundaries to meet the real need of the end customer . . .” (Fawcett, Ellram & Ogden, 2007: 8).
2010	Supply chain management involves the end customer-oriented organization and coordination among a cross-company value chain in the process-oriented and institutional level to maintain or improve competitiveness (Herrmann, 2010: 35, translated).

Source: Author's illustration

A variety of contributions on financial SCM including the corresponding definitions exists even in the financial sector's literature. Authors Pfaff, Skiera, and Weiss (2004: 67) can be cited as an example.

Although the definitions listed in table 1 sound very different, they bear in part the same core messages:

- SCM has no organizational boundaries.
- SCM is a cooperative approach.
- SCM affects all members of the entire supply chain.

- SCM considers and integrates internal and external processes.

Processes and interfaces play a decisive role in the SCM approach. This is shown in the Supply Chain Operations Reference Model (SCOR Model). It is an internationally used representation of SC processes developed by the Supply Chain Council in the United States.

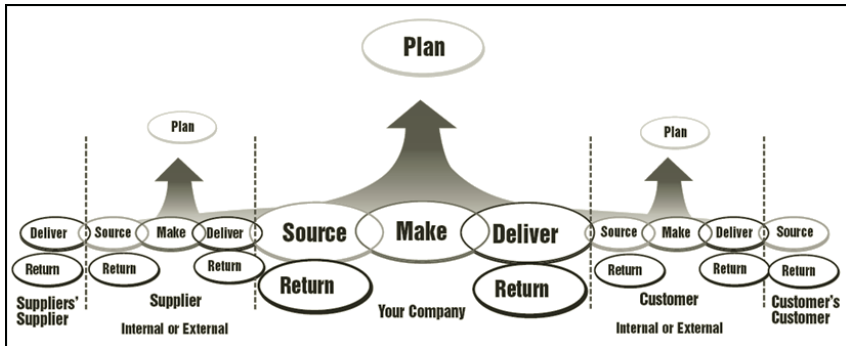


Figure 3: The SCOR Model's five different management processes

Source: Supply Chain Council, 2009: 3

The SCOR Model describes four hierarchical levels (see figure 4) consisting of reference levels. The multiplicity of procedures or process chains can be modeled with its help. In addition, it is possible to conduct this activity at first from the perspective of a single company (Supply Chain Council, 2009: 3). The fourth level, which is not specified in detail, should enable the company to consider its own company-specific activities.

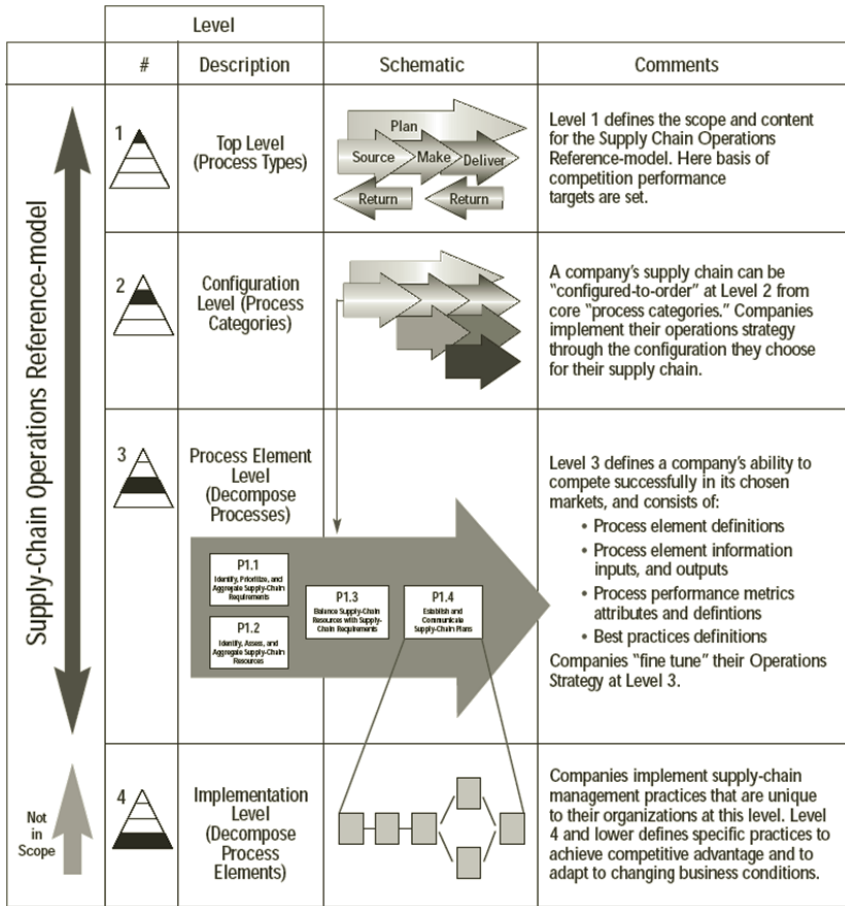


Figure 4: The SCOR Model's four levels

Source: Supply Chain Council, 2009: 7

Starting at level one, processes can be presented in increasing detail via this model (Jehle, 2005: 130). Based on these in-house process flows, the entire value chain can be drawn by using interfaces to suppliers and customers, who also use the SCOR Model (Weber, 2002: 200). Standardized representation of company-wide performance measurement is feasible, e.g., in the form of a benchmark (see sub-subsection 2.5.2.3).

In addition, this model enables redesign of the value chains and formulation of a holistic SC strategy. Furthermore, the basis for unified SCM software is established (Hagen, Springer & Stabenau, 2002: 47). The method's limits lie in the sometimes very detailed characteristics of value chains. Taking all special needs into consideration leads to the deterioration of transparency and comparability (Weber, 2002: 201).

Based on the SCOR Model and the various definitions listed table 1, the author defines SCM for this dissertation as follows:

SCM is a cooperation-based management strategy that extends beyond company borders. Its objective is the optimization of internal and external processes and interfaces throughout the entire supplier network. This will enable the network to deliver the desired product in a minimum time period at the lowest possible life cycle costs to the end user.

Based on the definition and the SCOR Model, SCM can be visualized as in figure 5.

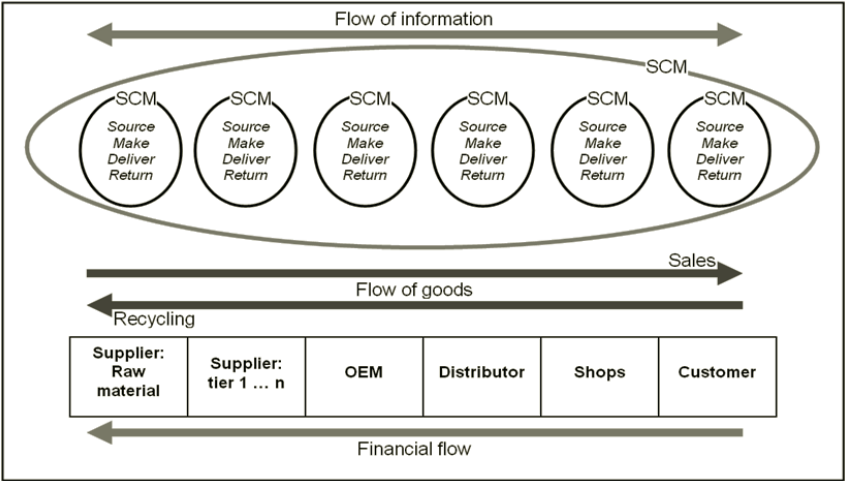


Figure 5: SCM within the SC – integrated planning and optimization

Source: Author's illustration

In SCM, business processes are coordinated from the end customer and the raw-material supplier with the processes of one's own company. Coordination of the various partners in the chain is the key to effectiveness and success. Through uniform, company-wide planning and optimization of procurement, production, and sales processes, a win-win situation is achieved for all parties in the whole SC. Poirier and Quinn (2003: 40–47) confirm this win-win situation. The author will elucidate their study in more detail below.

2.1.3 *SCM's Evolution Stages*

In their study, Poirier and Quinn (2003: 40–47) identify five key stages of evolution for SCM (see figure 6). Their study also showed that in the end, only a few companies are really leading in terms of SCM development. Over half of all companies examined were rated at level 1 and level 2. Thus, these companies have not reached the external perspective (levels 3 to 5) while implementing SCM. They are still dealing with the internal perspective.

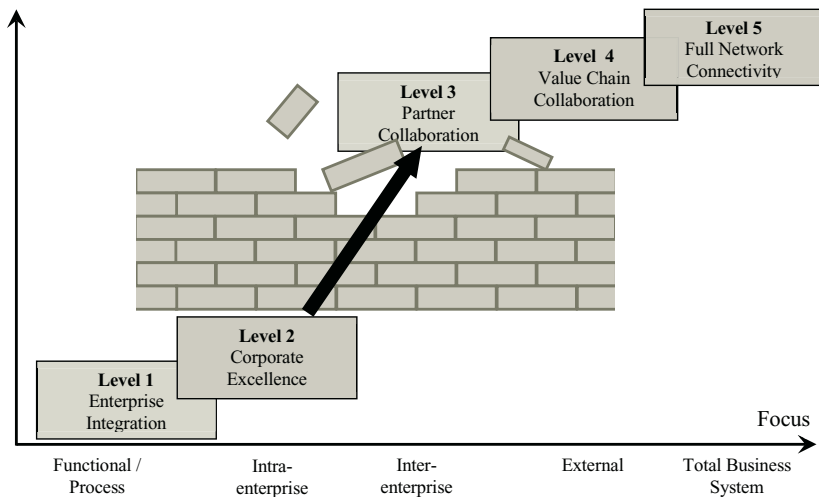


Figure 6: The five levels of supply chain evolution

Source: Author's illustration based on Poirier & Quinn, 2003: 42; modified

First-Time-Right Procurement
Substitution of the Paradox Purchasing Savings
through First-Time-Right Procurement (FTRP)
Münch, O.
2015, XXV, 243 p. 52 illus., Softcover
ISBN: 978-3-658-08619-0