7 Supply Chain Management

The supply chain management (SCM) focuses on the optimization opportunities in the value-added chain. Customers, retailers, producers, suppliers, and subcontractors set up a cooperative network. The primary objective is the replacement of inventory by communication. This objective is achieved by increasing the exchanged planning and controlling information. After introducing the subject of supply chain management in general (Chapter 7.1 to 7.2) three SCM-reference models, which focus on different aspects of the supply chain management, are introduced. The Advanced Logistic Partnership model, which was developed at the Swiss Federal Institute of Technology, points out the key management requirements (Chapter 7.4). Next, the PRO-Net reference model describes the business processes for strategic production networks (Chapter 7.5). The SCOR model finally focuses on SCM best practices and controlling metrics (Chapter 7.6).

While in general supply chain management is associated to the make-to-stock production type or at least the large-scale manufacturing, the plant construction business was not yet analyzed for SCM opportunities. Chapter 7.7 presents a research project conducted at the German Fraunhofer Institute for Factory Operation and Automation (IFF), which aim is the development of SCM concepts for the plant construction industry. Afterwards, an introduction into available SCM-software systems and their functionality is given. The case of a supply chain management in German textile industry concludes this section.

7.1 Actual Problems in the Supply Chain

By Frank Possel-Doelken and Li Zheng

7.1.1 Current Rationalization Objectives

In Germany, the magazine "Logistik Heute" and the firm CONMOTO have conducted a study on the current rationalization objectives in the German industry
Hereby, the company portfolio was as follows: 40% production companies, 21% trading companies and 39% service companies.

Figure 7-1: Rationalization Objectives

The results of the study are summarized in Figure 7-1 (for more details, please refer to the Supply Chain Management Network of the Fraunhofer Institute for Ergonomics and Organization – IAO at www.lis.iao-fhg.de/SCM).

Although for other countries this study would have probably delivered different results, the major optimization trends in the western industrial countries are outlined. For many firms, in particular small and medium-sized enterprises, the global competitiveness can only be achieved by looking beyond their own company border. In this context, the term "supply chain management" (SCM) is associated with astonishing success stories. The SCM benefits are said to be

- The reduction in lead times (production as well as delivery),
- A higher delivery reliability by means of improved transparency and faster responsiveness,
- The reduction of inventory by means of supply chain-wide inventory planning,
- The reduction of costs by avoiding expensive "emergency"-measures, such as air delivery, etc.,
- Early alerts by communicating requirements and material flow-related problems as soon as possible (VON WREDE 1999, p. 5).