# Logistics Systems

# 3

**Please note the Erratum to this chapter at the end of the book**

**Learning Objectives**

Logistics is characterized by thinking in processes, value chains, and networks. It includes parameters such as performance, quality, value, and cost. At the end of this chapter the reader will have gained an understanding of the basic components and organization variables of the logistics systems.

Apart from the technical and economic aspects, which increasingly have an impact on the efficiency of the logistics systems, it is important to discuss the fundamentals and functions of a company's internal and external logistics structures, and how the relationship with their agents is managed. In this way the reader will obtain information on competencies that goes beyond the scope of basic logistics knowledge.

**Keywords**

- Logistics and corporate strategy
- Basic structures of the logistics systems
- Logistical chains, networks, and processes
- Demand and supply chain
- Agents and elements of logistics
- Organization of logistics
- Relationship management in supply chains

H. Gleissner and J.C. Femerling, *Logistics*, Springer Texts in Business and Economics,
DOI 10.1007/978-3-319-01769-3_3, 

## 3.1 Logistics and Corporate Strategy

Logistics is both a competitive tool and a means of rationalization. Thus, logistical services may generate separate opportunities to develop strategic competitive advantages. On the other hand, the efficient organization of the logistics systems allows for the development of rationalization potential, which, in turn, may give a company a sustainable competitive advantage.

The two basic approaches of competitive strategies are *cost leadership* and *differentiation*. Moreover, another strategy called *focus scope* is frequently employed. The focus scope strategy is the niche strategy dependent on a company's strategic orientation (cost leadership or differentiation) and the scope of the targeted market.[1]

These basic strategies differ from one another according to what kind of competitive advantage is desired and according to the scope of the targeted competition field. The strategies of cost leadership and differentiation target the entire market of a particular business area. The focus scope strategy, however, is aimed at individual market segments.

Comprehensive cost leadership pursues the goal of consistent cost orientation across all business functions. Cost leadership is primarily based on a large market share, on the basis of which economies of scale in the procurement, production and distribution stages are to be implemented. It is the organization of logistics systems which substantially supports the cost leadership strategy. Thus, the network structures in procurement and distribution logistics determine the warehousing and transport costs (see Chap. 8). Further cost estimation factors include the application of transport, warehouse, picking, and material transport technologies. The degree of automation of the applied technologies significantly influences cost structure and cost effect (see Sect. 11.5).

Besides the physical logistics processes, the organizational design of logistics influences the cost structure. For example, this applies to order processing, inventory planning, and the disposition of materials (see Chap. 7). The costs of the associated processes, in turn, are influenced by the IT, information and communication systems used (see Chap. 9). Allocating logistics capacities and processes to logistics service providers is a strategy that has increasingly been pursued by companies. This form of logistical outsourcing has primarily been utilized in distribution logistics, with service providers running distribution centers and managing the distribution of goods (see Sects. 4.2.6 and 10.2.3). On the one hand, this outsourcing process aims to make the costs more variable. On the other hand, it is expected to reduce the costs through the realization of economies of both scale and scope by the service provider (see Sect. 8.5).

Companies pursuing a differentiation strategy try to achieve a unique selling point for a customer's highly-valued demands. By reaching a unique selling point for certain products or services, it is often possible for a company to establish higher prices. Assuming that the prices achievable in the market will not be compensated by the (additional) costs of differentiation, a company will enhance its profit prospects.

[1] Cf. Porter (1985), p. 11.

In addition, differentiation generally enables more customer loyalty, which helps prevent new market entries and substitution products. Among the forms of differentiation we can distinguish between the criteria of quality, design, image, and service. Thus, service differentiation is aimed at providing services which offer the consumer or customer additional benefits apart from the actual product. Differentiation strategy is best implemented in/within the logistics service. Examples are incredibly fast or reliable delivery services, or additional disposal services.[2]

## 3.2 Supply Chains and Networks

The modern understanding of logistics, which is based on the third level of logistical development (see Chap. 2), calls for process-oriented management of all logistical elements in the business cycle. As opposed to the individual examination of these elements, a highly complex picture of the logistics processes thus emerges which involves extensive division of labor. In contrast to the management of rather straightforward processes (e.g. the transport of goods between a supplier and a customer), this complexity requires much more monitoring and managerial effort.

The terms *supply chain management (SCM)* and *demand chain management (DCM)* conceptualize these managerial tasks. Here, the words supply or demand only describe where the logistics process is initiated, i.e. on the supply side or on the demand side. Since in most cases logistics makes commodities available on the market according to the supply volume and most companies offer their commodities on an anonymous market, the term SCM is far more frequently used.[3] Ultimately, the terms SCM and DCM are a linguistic advancement of the terms *controlling* or *management* of logistics systems across several steps in the value chain. Supply chain management is enhanced by the comprehension of financial and monetary flows, the coherent internal organizational units and external participants (see Sect. 10.1.3).

In order to accurately portray the complexity mentioned above, the term supply chain – describing a string of logistical elements – has in many cases been

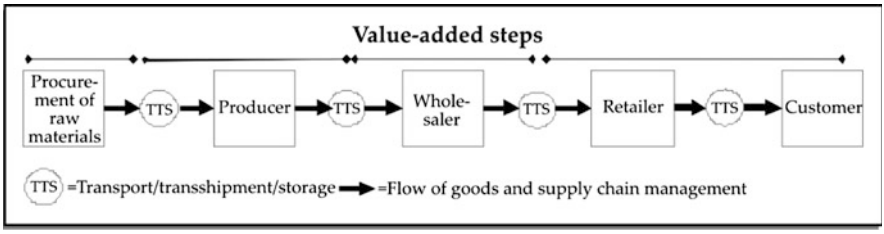


**Fig. 3.1** Model of a logistics chain (supply chain)

[2] Cf. Herter (1999), p. 81 et seq.

[3] Cf. Marbacher (2001), p. 18 et seq.

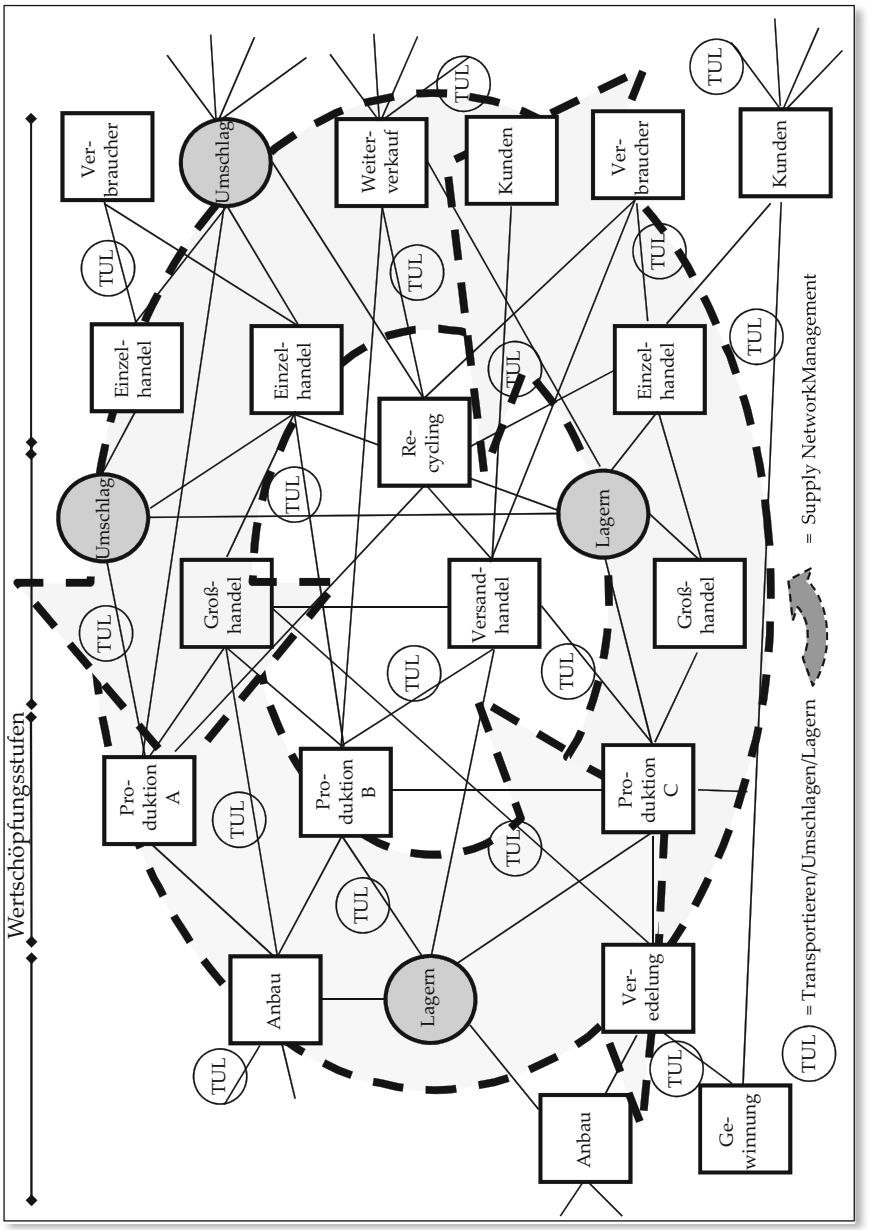


**Fig. 3.2** Model of a complex logistics network

superseded by the term supply network. This term comprises all elements, agents, and processes involved in both the physical and virtual (informational) flow of goods from the source to the drain. While Fig. 3.1 depicts a relatively simplistic supply chain, Fig. 3.2 shows a schematic representation of a complex network across several value-added steps.

In operational practice, all forms of relationship networks are encountered, ranging from less complex ones to highly complex ones. Included in this are simple, isolated and self-contained networks with only one element, point to point connections with two agents, and multi-level supply chains or highly branched logistics networks. The main types of agents forming part of supply chains are[4]:

- Raw material producers (growing, extraction etc.)
- Manufacturers, producers (suppliers, industry, processors etc.)
- Wholesalers, distribution provider, importers, exporters
- Retailers
- Users, consumers

It is the objective of logistics and logistics management (supply chain or network management) to influence the physical and informational transactions of the logistics processes in a manner that meets the specific requirements and efficiently combines the elements and methods consuming as few resources as possible and at the lowest cost. Such efficient logistics processes may entail a significant competitive advantage for the companies involved. This competitive advantage is comprised of

- *Cost advantage* – through low factor consumption, low information cost and high productivity
- *Value advantage* – through the increase in value of the products during the logistics process by means of timely or fast availability, additional treatment of the goods, or additional services associated with the goods.

**Case Study 3.1: Detergent Supply Chain**

The supply chain of a detergent manufacturer starts with the purchase of detergent by a customer at a retail shop. The removal of the detergent from the shelf is registered during the payment process at the checkout and supply is automatically requested. As soon as the need for supply has reached a certain level the relevant wholesaler is requested to supply the amount of detergent needed and delivery to the retailer is effected. Meanwhile, the dispatching process at the wholesaler initiates a supply request for detergent to the detergent manufacturer. The manufacturer obtains the intermediate products required for the detergent production from a variety of suppliers which, in turn, are supplied by other suppliers. The packaging, for example, is produced by a supplier which obtains its cardboard in an upstream stage of the supply chain from a paper manufacturer, which, in turn, orders wood from a forestry (see Fig. 3.3).

[4] Cf. Chopra and Meindl (2009), p. 22.

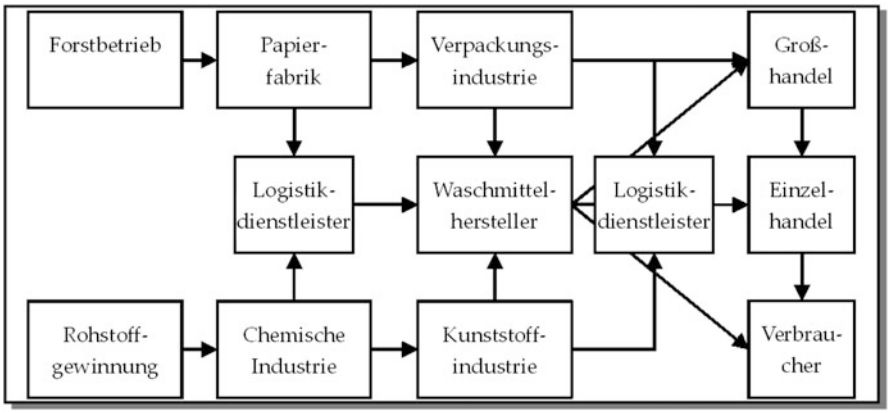


**Fig. 3.3** Model of a detergent supply chain

The management of the supply chain requires an efficient IT network to control the flow of goods across all the stages (see Chap. 9). The retailer provides the customer with a ready-to-sell version of the detergent. In all the upstream stages of the supply chain, sales data is needed for internal planning and delivery is carried out on order. In the same way, time frames for delivery are stipulated in those stages, in which, for instance, discount prices may be attained upon which the retailer may implement a sales campaign. Moreover, special cases such as direct delivery by the manufacturer to the wholesaler (e.g. a laundry shop) always need to be taken into account in such supply chains.[5]

## 3.3 Management of Logistics Systems

### 3.3.1 Basic Management Systems

The basic logistical management strategies derive from marketing strategies. The *push principle* conceptualizes the supply of goods on the market without specific demand for those goods. This means that action for the initiation of a logistics chain is taken by the manufacturer and thus at the beginning of the logistics chain. The push principle is the traditional strategy to supply goods to the market. Large production lots and fully utilized transport units result in cost advantages. This, though, must be set against the corresponding inventory costs and the sales risk.

This principle is used for low-value goods in the distribution of consumer goods, especially in the event of a sales campaign where products are pushed onto the market at low prices.

[5] Cf. Chopra and Meindl (2009), p. 21.

The *pull principle,* on the other hand, initiates the logistics chain at its end. This means that the logistics process is activated when the end user (consumer) requires specific goods and thus creates demand. This principle is normally applied for high-quality investment goods. Due to the generally difficult sales situation and the competition-induced need to reduce costs in the supply chain, the pull principle is also increasingly used for consumer goods and low-price goods. This principle entails an interesting cost advantage as a result of reduced inventory costs and sales risks. It is, however, also associated with relatively long delivery times and increased costs for small (single) shipments.

In order to offer customers better availability of goods that pass through the logistics channel according to the pull principle, elaborate forecasting methods are increasingly being used. These are based on detailed analyses of previous customer behavior and on intelligent logistical management techniques. Thus, the time between the placing of the order by the customer and delivery can sometimes be shortened significantly and the disadvantages associated with long delivery times mentioned above may be offset (see Sect. 8.3).

Another approach in managing the supply chain processes is measuring the cycle time of the logistics process. A distinction can be drawn between the following cycles[6]:

- Procurement cycle of the suppliers
- Manufacturing cycle of the manufacturers
- Replenishment cycle in trade
- Customer order cycle of the consumers

This classification is modeled according to the functional distinction of logistics (see Sect. 2.4) and can be broken down into the time spent on the informational processing of the order (acceptance of order or purchase by customer at point of sale), on the physical processing of the order (picking, packing), and on the delivery (transport) or reception by the customer.[7]

Apart from these basic management techniques, there is a multitude of other management systems. One of them is the so-called order to cash cycle system which focuses on shorter time spans between order placement and payment by the customer. This perspective is above all in the interest of the industry sector (sometimes also in the trade sector if it is part of the supply chain) since the time until receipt of the sales revenues is shortened and cost effective capital commitment is therefore reduced (see Sect. 10.1.3). In this way, efficient logistics processes and a networked supply chain management may substantially expedite the order to cash cycle.

[6] Cf. Chopra and Meindl (2009), p. 27 et seq.

[7] Cf. Delfmann and Reihlen (2003), p. 9.

### 3.3.2 System Leadership

The core question around system leadership is to determine which one of the agents at different value-added steps within a logistics chain or network assumes leadership in managing these steps. Joint control by several agents normally yields dissatisfying solutions due to shared responsibility. If several value-added steps within a supply chain are linked to each other, the question of system leadership appears. This question for instance is discussed and negotiated between

- The raw material supplier, the component manufacturer, or the end product manufacturer; here, the end product manufacturer often dominates
- The end product manufacturer and the trade sector; depending on the market power of the parties involved, various constellations between the industry sector and the trade sector may result here
- The wholesalers and the retailers if several levels of trade are involved. In these instances many small retailers are confronted with few powerful wholesalers, which also assume leadership
- The shipping agents (industry and trading sector) and the logistics service providers entrusted with the logistics processes

System leadership entails supremacy of control, which enables the system leader to generate logistical synergy potential, such as cost advantages. Barring distinctly cooperative companies, system leadership is usually wielded by industrial and commercial companies which prevail due to their market power. However, it is also possible to pass system leadership on to third parties, for example to logistics service providers. If several service providers are involved in the supply chain, it is possible to designate one of them as system leader (Lead Logistics Provider). The car industry offers many examples that illustrate this issue since car manufacturers often assume leadership over their suppliers or service providers with concepts such as Just in Time (JIT) or Just in Sequence (JIS) (see Sect. 7.3.3). Consumer goods manufacturers and trading companies have taken similar courses of action by implementing instruments for Efficient Consumer Response (ECR) (see Sect. 7.5).

## 3.4 Organizational Variables in Logistics Systems

### 3.4.1 Organizational and Operational Structures of Logistics

Logistical task management and supply chain management require a corresponding organization of these functions within a company. On the one hand, it is crucial to set up a structure for the allocation of tasks and competencies within the respective areas of responsibility. On the other hand, the functions and processes need to be structured. A suitable way to view the corporate structure is to distinguish between

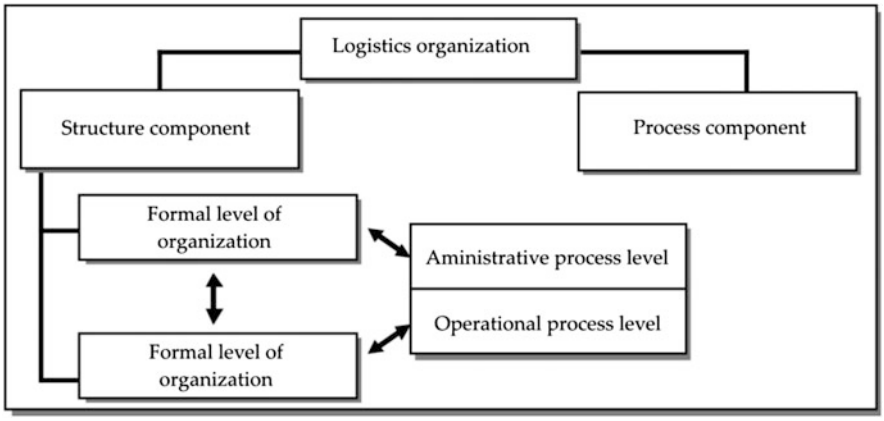


**Fig. 3.4** Determining elements of logistics organization structures (Cf. Klaas 2002, p. 131)

organizational structures and operational structures. As is highly characteristic of logistics and, above all, of supply chain management, giving priority to either organizational-oriented aspects or operational-oriented aspects heavily depends on whether the company features more flow-oriented or process-oriented structures. This type of logistical organization comprises both structural components and process components (see Fig. 3.4).[8]

The structural components comprise both the formal levels of organization and the physical levels of the value-added structure, which enables the provision of services in a supply chain. Included in the value-added structure are all personal (the 'know-how' and staff), material (inventory), technical (warehouse equipment), and geographical (locations and buildings) factors and institutions in terms of their kind, number, capacity, and spatial distribution within a supply chain. The operational processes of the logistics organization include basic processes such as transport, transshipment, storage, packing, signing etc. The administrative processes comprise tasks such as planning, disposition, order processing, and control. Figure 3.5 shows the relationship between structural components and process components. It illustrates the supply chains of individual companies as well as cross-company supply chains (see Chap. 4).

The aim of the organizational structure is to arrange and (sub-) divide the company into positions, departments, and divisions and to coordinate them. A position is the smallest organizational unit within a company. Tasks, responsibilities and materials are given to these positions. Positions with managerial or leadership functions are additionally given authorities and competencies. If several positions,

[8] Cf. Klaas (2005), p. 12 et seq.

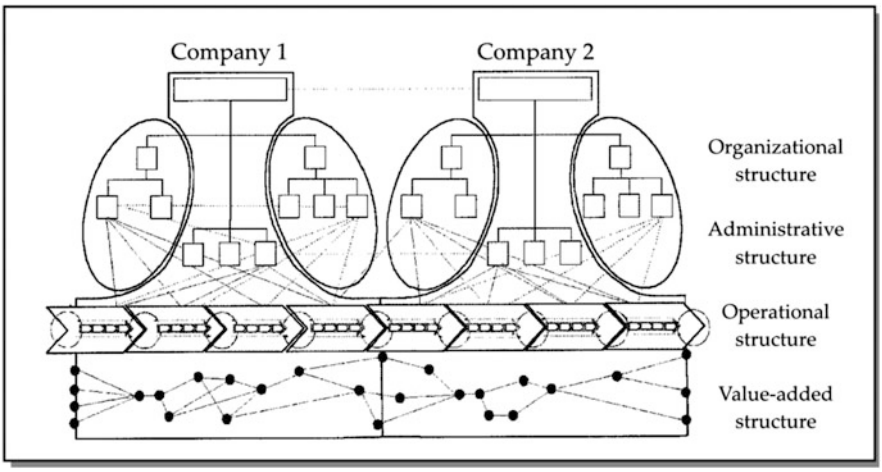


**Fig. 3.5** Organization and supply chain (Cf. Klaas 2002, p. 148)

such as dispatcher, warehouse manager and customs manager, are subsumed under one organizational unit, a new department – as for instance a transport planning department or export department – may be set up. Several departments, in turn, form a division. In this case this would be the shipping division. By means of job descriptions (responsibilities) and organizational directions, clear regulations are issued to assign rights and duties to the holder of the position and to stipulate authorities and reporting lines. Job descriptions outline the tasks and responsibilities of a position, its superordinate, co-ordinate, or subordinate status, and its relation to other departments. Organizational structures are visualized in organograms.

In practice, summaries and documentations of job descriptions as well as organograms are compiled in organizational handbooks. Such handbooks are an integral in designing the operational structure, whose main objectives include the appropriate sub-division of the overall process into specific operations, the determination of the ideal operation sequence and supporting the flow of information, forms and documents.

The basic principles of organizational design, namely the division of labor (specialization) and coordination, also apply to logistical organization structures. Thus, the overall logistics task needs to be sub-divided into different smaller tasks – such as disposition of goods, order processing, or transport planning – and subsequently brought together again. The kind of specialization is decisive for the organizational design. Specialization may be performance-oriented, i.e. functional positions or departments are set up. This is what is referred to as functional organization structure. On the other hand, it is also possible to specialize in certain objects if subtasks of a company focus on these objects. These objects may be products, product groups, markets, regions, or customer segments. This is referred to as divisional organization structure.

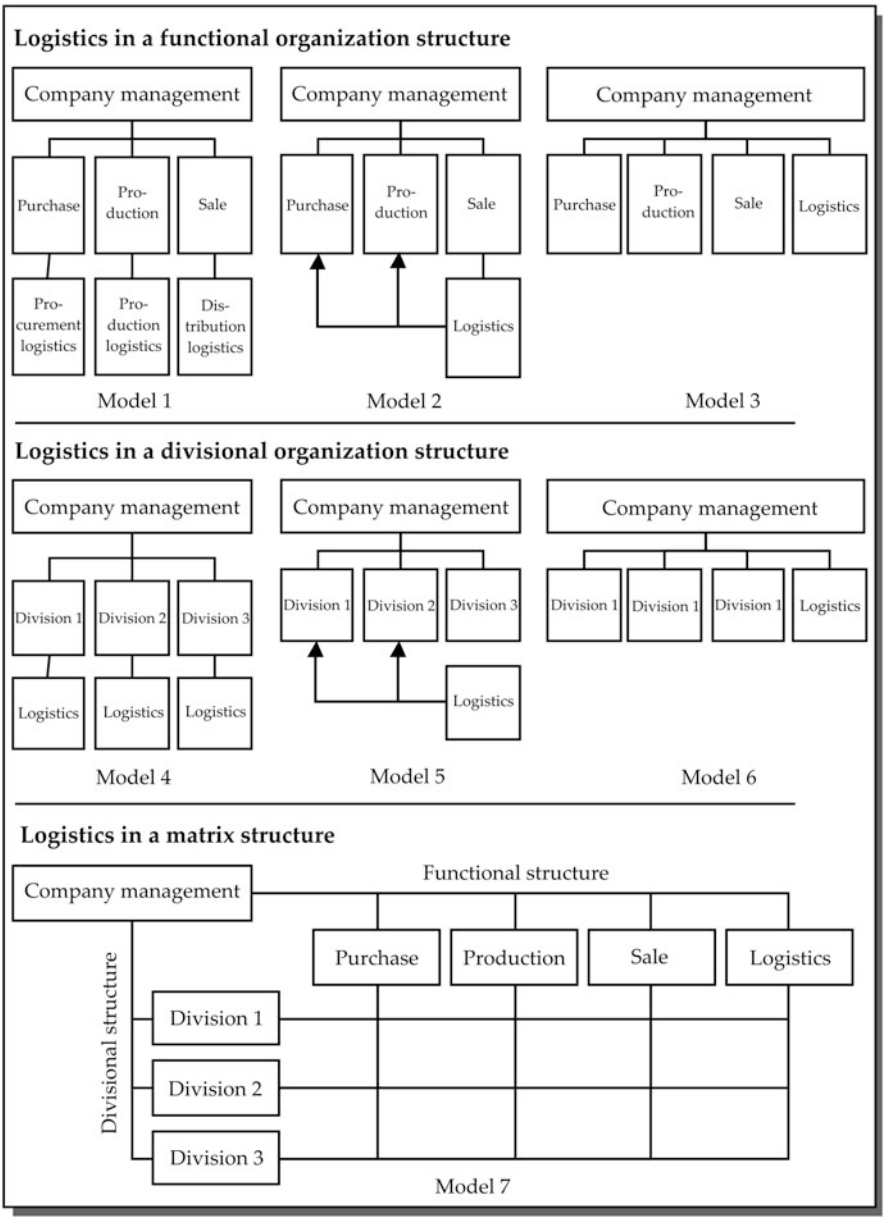


**Fig. 3.6** Logistical organization models (Cf. Schulte 2009, p. 559)

Regarding logistics organization, Fig. 3.6 shows logistical organization forms which can be distinguished as follows[9]:

- Functional Organization Structure
  - Model 1: Logistical sub-functions, such as procurement logistics, production logistics and distribution logistics, are generated to match the respective functional areas of purchase, production, and marketing.
  - Model 2: The cross-functional coordination is effected by setting up a logistical functional area.
  - Model 3: An independent central department is established for logistics which operates on the same level as purchase, production, and marketing.
- Divisional Organization Structure
  - Model 4: Each division operates its own logistics department.
  - Model 5: The logistical processes are coordinated by an independent logistics department.
  - Model 6: An independent central department carries out the logistical tasks for the respective division.
- Matrix Structure
  - Model 7: Logistics is an independent functional area responsible for all logistical operations.

Apart from these organizational designs, there are a number of other logistical organization structures which can be employed by small to medium-sized businesses or by businesses with a small volume of logistics tasks. By establishing a central staff unit, it is thus possible to coordinate the flow of goods and materials centrally without having to set up a new department. In these cases, however, the management responsibilities are given to other functional areas such as production or sales. That is why staff units may often only have a say by virtue of their methodical and professional competencies as for instance budgeting or simulation calculation, cost-benefit analysis, or key figures development. The same is true for expert panels (conferences, committees, meetings) and teams that assume advisory functions and/or perform preparatory work for decision-making. Teams are especially suitable for collaborative and temporary tasks and projects.

Along with the development of logistics (see Chap. 1), there has been a change in the company's logistical organization structure.[10] This change is characterized by a shift away from rigid, hierarchy-oriented organizational structures towards more flexible, process-oriented operational structures. This organizational form is also referred to as process chain management.[11] In the case of a process-oriented organizational design, the criterion of process efficiency is essential. Process

[9] Cf. Schulte (2009), p. 558 et seq.
[10] Cf. Pfohl (2010), p. 238 et seq.
[11] Cf. Ihde (2001), p. 343.

efficiency is to be understood as the orientation of the internal performance processes towards the goals of the company as a whole.[12]

The main characteristics of process orientation are[13]:

- The process-specific allocation of resources
- The assignment of processes to process owners
- A marked customer orientation

A clear resource allocation reduces the level of resource interdependency between individual processes, which, for example, leads to faster cycle times. The appointment of process owners with corresponding discretionary, control, and coordination competencies foregoes the setup of additional managing, controlling, and coordinating authorities. Customer orientation allows customer requirements to be considered across all departments and not only those with immediate concern, for instance, sales or distribution. There has been an ongoing appreciation of logistical functions in operational practice in line with these developments. It is reflected both in the hierarchy layout of logistics areas (department management, corporate management) and in the functional areas themselves (logistics centers, site logistics, plant logistics).

However, knowledge of logistics concepts, in many cases, has been circulating in companies and individual departments so that sometimes it does not appear necessary to further anchor professional expertise in solid knowledge, at least with regards to logistics. It seems more important to optimize cross-company alignment between the agents in the supply chains.

### 3.4.2 Inter-Organizational Optimization Through Supply Chain Management

In the preceding chapters, we discussed concepts of logistics and supply chain management which were mostly based on material-flow techniques or information techniques or featured solutions based on special methods and models. Apart from these concepts, it is also the ways of collaboration between the agents in supply chains, and thus their relationships among each other, which are becoming more and more important. This has to do with the fact that supply chains are becoming increasingly complex and globalized and also with the growing number of companies involved and the resulting higher information technological interconnectedness.

Numerous changes reinforce these tendencies. Thus, traditional customer-supplier relationships are evermore developing into innovation-oriented partnerships. The choice of suppliers and service providers is in many cases no longer based on a comparison of offers but on the level of existing development competence. Additionally, pricing processes and rebate policies are undergoing changes which make

[12] Cf. Frese (2005), p. 317.

[13] Cf. Dehler (2001), p. 141.

for a replacement of annual price rounds without disclosure of the calculations by continuous price and cost reductions based on the disclosure of target costs.

Owing to the cross-company responsibility and management of the flows of goods, supply chain management also needs to undergo organizational changes. This gives rise to logistical organization designs based on networks which subsume all cross-company relationship structures comprising several partner companies within a service network that trade with each other cooperatively.[14] A prerequisite for cooperation is the will to cooperate and the genuine purpose of overall optimization. To ensure this right from the beginning, cooperations should be encouraged at senior level by the respective corporate management as there often are initial misconceptions and opposition to be dispelled.

Ideally, the qualities of the agents complement each other in supply chains based on the division of labor and thus lead to improved productivity and increased revenues and profits, which is also referred to as *win-win-situation*.[15] However, this improvement potential is not generated automatically. Moreover, there are a number of problems which require appropriate relationship management. It seems interesting that the information and communication technological components do not constitute a problem in the realization of supply chain management concepts but that problems arise in the formation and maintenance of partnerships.

One of the main reasons for this is the fact that companies often lack familiarity with and experience in managing business relations. This is especially true for handling the apparent paradox of building up sustainable but yet highly flexible partnerships in a fast changing environment. Problems also frequently arise with regard to choosing the right business partners. Furthermore, operationalizing the cost and benefits optimization, which is being achieved through relationship management, often poses problems. Thus, the goals of relationship management are[16]:

- The results for the partner (successful relationship, fair relationship)
- The activities of the partner (specific investments, specific stakes)
- One's own goals (successful relationship, fair relationship)

Obviously, in operational practice there are numerous hindrances to the realization of these goals. In particular, choosing the right partner is of paramount importance since long-term cooperation might be desired. Business relationships may thus be characterized as dominant, confrontational, cooperative or amicable. Partnerships between agents in a business relationship should feature the following characteristics:

- High technological standard
- Existing development and innovation activities
- Distinct skills in single functional areas

[14] Cf. Stölzle (1999b), p. 587.

[15] Cf. Scheer and Borowski (1999), p. 9.

[16] Cf. Stölzle (1999a), p. 224 et seq.

It is essential to build up reputation and trust. This can be achieved by agreeing on exclusivity, risk-taking, fair distribution of decision-making rights between the partners in a non-centralized way, and by demonstrating reliability.[17] Based on this, differing interests can be expressed and mutual obligations stipulated. However, this may lead to mutual dependency between the partners and loss of control over one's own resources. Trust, and thus the disposition to enter into long-term partnerships, can only be brought about if the partners are under the subjective impression that investing in the business relationship is proportionate to the benefits resulting from this relationship. This can be measured in monetary dimensions, such as increased volume of turnover or profits, but also in non-monetary dimensions.

The risk of opportunistic behavior after the disclosure and exchange of information, such as sales figures, cost data or profit margins, may pose another problem. If this information is leaked to the dominating partner, they might use it to improve their own market position by demanding additional services or discounts.

An example of this would be the market position of the trade sector compared to that of the manufacturer. Since the trade sector is closer to the consumer and because it has the manufacturer's products in its product range, the manufacturer's success is in part heavily dependent on the trade sector. Another example is the provision of sales data at the point of sale. If the cooperation between trader and manufacturer is characterized by mutual trust, this data can be provided without any problems and rationalization potential may be realized. This, however, is still rarely the case and often the manufacturer is only given aggregated central warehouse data which is far less detailed and does not allow for or at least complicates the supply of subsidiaries.

### 3.4.3 Intra-Organizational Behavior and Changed Staff Requirements

The deliberations outlined above about the inter-organizational prerequisites of logistics and supply chain management cannot conceal the fact that an improvement of inter-organizational coordination still requires coordinating the intra-organizational processes. This means that inter-organizational and intra-organizational coordination are mutually dependent and only jointly enable further optimization. The mentality of department and sector optimization is to be superseded by a mentality of thinking in holistic, customer-oriented processes. Goal conflicts between the organizational units should be avoided.[18] In this context it is important to bear in mind the mutual dependencies which, above all, occur between the areas of marketing, sales, and logistics. These reciprocities, also referred to as trade-offs, are established by the

[17] Cf. Stölzle (1999a), p. 229 et seq.

[18] Cf. Pfohl (2010), p. 233.

actions or decisions of one organizational unit, thereby modifying the decision area of another organizational unit in a goal-relevant manner.[19]

These trade-offs result from possible goal conflicts between the logistics department and other business functions. Due to market conditions, the marketing and sales departments may demand comprehensive 24/7-availability of a broad and deep product range, often without considering the associated inventory costs and the cost effects of an extensive product range. Thus, marketing goals may (initially) play a counterpart to a desired logistical efficiency.[20] Suitable cost and benefit calculations as well as controlling instruments therefore need to make goal conflicts transparent internally (see Chap. 10). Examples of cross-company solutions are Vendor Managed Inventory (VMI), Collaborative Planning Forecasting Replenishment (CPFR) etc. (see Sect. 7.5).

In order to develop and realize the right solutions for inter-organizational and intra-organizational processes it is important that the people involved are not only professionally but also methodically competent and that they display a high level of soft skills. On the other hand, they need to have the necessary authority to be able to make and enforce decisions. This entails increased requirements for staff members in the overall optimization of supply chain logistics. Purchase decisions, for example, may thus have repercussions on the logistics level which the purchaser needs to take into account and has to answer for. It is not least due to these changing requirements that opposition is encountered. Advanced vocational training courses can help alleviate these negative effects.

Cooperation concepts of ECR turn former product managers of producers into sales-oriented commodity group managers, whose autonomous management of their commodity group takes the specific interests of their partners into account. One should not underestimate the influence of the employees within growing organizational structures that can impact the implementation of such changes. The setup of supply chains usually calls for dispensing with familiar working models and hierarchical models and makes it necessary to embrace change. This, however, also means that both openness and trust must be prevalent among the employees so that the right solutions can be found and fair distribution of the jointly achieved benefits can be effected.

[19] Cf. Frese (2005), p. 242 et seq.

[20] Cf. Zentes (2004), p. 256.

**Review Questions**

1. Give examples of organizational logistics structures.
2. What are logistics systems?
3. What are the basic principles of controlling logistics systems?
4. What is the significance of system leadership and how can it be influenced?
5. Describe different organizational and operational logistics structures within companies.
6. What is the difference between process-oriented organization and conven tional forms of operational organization?
7. What is a process owner?
8. What kind of competencies do employees in logistics organizations need to have?
9. What are the main challenges of logistical relationship management?
10. Draft a job description for a transport planning role.

## Additional Literature

Bowersox, D. J., Mentzer, J. T., & Speh, T. W. (1995). Logistics leverage. *Journal of Business Strategies, 12*, 36–49.

Chopra, S., & Meindl, P. (2009). *Supply chain management*. Upper Saddle River: Prentice-Hall.

Christopher, M. (2005). *Logistics and supply chain management*. Harlow: Pearson Education Limited.

Gleißner, H. (2000). *Logistikkooperationen zwischen Industrie und Handel*. Göttingen: Cuvillier.

Göpfert, I. (2005). *Logistik Führungskonzeption*. München: Vahlen.

Klaas, T. (2002). *Logistik-Organisation*. Wiesbaden: DU-Verlag.

Laurent, M. (1996). *Vertikale Kooperationen zwischen Industrie und Handel*. Frankfurt: Deutscher Fachverlag.

Pfohl, H.-C. (2010). *Logistiksysteme: Betriebswirtschaftliche Grundlagen* (8th ed.). Berlin: Springer.

Rogers, D., & Tibben-Lembke, R. S. (1999). *Going backwards: reverse logistics trends and practices*. Reverse Logistics Executive Council: University of Nevada, Reno.

Schulte, C. (2009). *Logistik-Wege zur Optimierung der Supply Chain* (5th ed.). München: Vahlen.

Sebastian, H.-J., & Grünert, T. (Ed.) (2001). *Logistikmanagement: Supply chain management und E-Business*. Stuttgart: Teubner Verlag.

Spengler, Th., Voß, St., & Kopfer, H. (Ed.) (2004). *Logistikmanagement: Prozesse, Systeme, Ausbildung*. Heidelberg: Springer.

Stock, J. R., & Lambert, D. M. (2001). *Strategic logistics management* (4th ed.). Homewood: McGraw-Hill Irwin.

Zhao, M., Droge, C., & Stank, T. O. (2001). The effects of logistics capabilities on firm performance. *Journal of Business Logistics, 22*(2), 91–100.