

Synopsis

This thesis aimed to determine production networks' specific logistics requirements and, on this basis, to develop a proposal for the required adaptation of current logistics controlling.

The division of tasks in real-life production processes requires the individual production steps to be (re)connected by warehousing, transport and transshipment processes. This comprehensive reconnection, managed by logistics, highlights the cost-cutting potential of stock reduction and the competitive advantages of increasing throughput speed and making deliveries more reliable. An understanding of logistics was selected as a cross-sectional function from the wide variety of logistics concepts, taking into account the link with controlling.

The following description of controlling as a management support function formed the basis of an understanding of the subsequent logistics controlling. Logistics controlling was finally interpreted as a functional specialisation of management accounting.

Next, various explanatory theories as to how company networks arise were presented. In line with the transformation of the corporate environment, approaches which have a largely external focus (internationalisation, competitive dynamics, value shift, communications and transport technology) were supplemented by theoretical explanatory approaches. These are more aligned to the motives for forming networks within the company (transaction cost theory, resource-based theories and the theory of managing complexity).

The chapter on network forms created the framework for a more precise definition of corporate networks and described a system of forms. This analysis formed the basis for selecting production networks as the basic network form for this thesis, as they are of the greatest importance to logistics controlling.

Next, the selected production networks were specified in more detail in order to derive the requirements for logistics in production networks. Production networks were defined as a combination of cooperation and competition ("coopetition"), for which the specific

capabilities such as cooperation, flexibility and multiple linking are essential. On this basis a logistics strategy for the management of material flows in production networks was designed.

The concept of the logistics chain was then used as a focusing link which helps both to define individual logistics processes and allocate resource, time and cost data.

On this basis a preliminary logistics controlling concept for production networks was developed. After a preface on the fundamental capacity of networks to be coordinated and possible coordination mechanisms, the relationship of the continued logistics controlling of individual companies (ILC) to the now necessary network logistics controlling (NLC).

The subsequent functional and institutional adaptation of logistics controlling was divided into a PC and DP system. The focus of the coordination of the PC systems was defined as strategic controlling, as this enabled the most influence on the design of material flows. Network-specific tasks proved to be support for individual companies by NLC in deriving a joint target system for logistics and support in the development of coordination principles. Only the supportive function of NLC is of a more tactical or operational nature as part of the evaluation of services in network companies. These specific logistics controlling tasks were then studied in detail using well-known tools as an example. The remaining tasks did not require any specific adaptation to the requirements of production networks and therefore the traditional methods of logistics controlling can be used.

The necessity for change described is reflected in the coordination of information provision. One of the key points here was to recognise opportunities and threats for the network and to provide other cross-network information. In addition, it was found that tactical and operational controlling needed to be adapted in order to provide time, cost and quality information beyond the level of individual companies. In order to fulfil these specific logistics controlling tasks in production networks, it was necessary to map the logistics chains to reflect the structure of the production networks as accurately as possible.