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THE CONFIGURATIONAL APPROACH IN SUPPLY CHAIN MANAGEMENT (SCM) OF STEEL GOODS

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A basic element of supply chain management is the holistic or system view. Following this perspective supply chain management has to analyse the supply chain as a whole and must not only concentrate on details or specific elements. The configurational approach is one method for realizing this. The article analyses how the configurational approach can be applied in SCM of steel goods.

Key words: metallurgical enterprise, supply chain, lean and agile, Poland

INTRODUCTION

The economic development, creation of new enterprises or merging with the existing ones lead to an increase in competition on the market [1]. Peer pressure that influences contemporary functioning enterprises causes that they are forced to search for more sophisticated ways that will enable them to develop and remain on the market. Enterprises that aim to maintain their position, especially those which want to increase the market share, are forced to use a growing number of new and advanced techniques to manage and plan supply chains [2]. In order to meet new challenges posed by the market, companies must concentrate their efforts on achieving better logistics capacity that enables faster production modification, so that it could fully satisfy customer requirements. Supply chain management constitutes the highest form of economic management within a given enterprise. An effective supply chain, ability to adjust an offer to market requirements and collaboration with partners allow a given company to make better use of its potential.

„The promised benefits that effective supply chain management can create for all the collaborating parties: reduced costs and increased revenues, improvements in delivery, dependability and service quality [3]".

The purpose of this article is to present and analyse the processes that occur in supply chain of steel goods on the basis of one of Polish companies, mediating in selling steel goods. The main issue described in this article is supply specification as well as the processes of adapting the enterprise to market requirements in the context of configuration of supply chain of steel goods.

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SUPPLY CHAIN MANAGEMENT

Reliability of product and service flow requires a sequence of operations combined into a process of supply chain management [4]. Supply Chain Management is defined as a "set of approaches used to efficiently integrate suppliers, manufacturers, warehouses, and stores so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time in order to minimize system wide costs while satisfying service-level requirements" [5]. Supply chain management is enabled by inter-organizational business-to-business connectivity, an absolute requirement for the extended enterprise [6]. In today's world, supply chain management also is a key strategic factor for increasing organizational effectiveness and for better realization of organizational goals such as enhanced competitiveness, better customer care and increased profitability [7]. Supply-Chain Operations Reference Model SCOR integrates four basic processes: supply, production, distribution and return services. This model was developed by the Supply-Chain Council (SCC) to assist firms in increasing the effectiveness of their supply chains and to provide a process-based approach [8].

Supply chains are formed as a result of the progressive process of eliminating barriers between companies and overstepping traditionally shaped boundaries within enterprises [9]. Hardly ever is it possible to observe simple supply chains in which relations between links are linear and sequential. Such chains are characterized by the existence of single, linear, bilateral "point - point" relations and sequencing of actions performed by its links. Increasingly, simple supply chains have been replaced with organizations in which material and information flows take much more complex form. An increase in number of operators in different phases of material and information flow causes greater complexity and diversity of connections between the links.

THE CONFIGURATIONAL APPROACH

The configurational approach displaced contingency theory as the dominant perspective in the literature on change in the 1980s. This perspective is characterized by its "holistic" view of or ganizations, which are conceived as "composed of tightly interdependent and mutually supportive elements such that the importance of each element can best be understood by making refer - ence to the whole configuration" [10].

An early research on the configurational approach in supply chain is presented by M. L. Fisher [1 1]. Based on the 'type of product' and 'demand predictability', Fisher classifi es products into functional products that have predictable demand and innovative products that have unpredictable demand. In his discussion, a SC configuration focusing on physically efficient processes is considered the most appropriate for functional products and a market-responsive-process SC confi guration is most suitable for innovative products.

In turn, by A. Neher [12] the confi gurational approach describes organizations as commonly occurring clusters of attributes of strategy , structure, process and context. Each type of configuration is characterized as a set of variables which fi ts together including internal aspects of the organization as well as the external environment/context. It is assumed that the parts of a socio-economic system take their meaning from the whole and cannot be understood in isolation.

The application of the confi gurational approach to supply chain management will lead to a better under - standing of the relations between the numerous elements of supply chain management, which is an important step towards a supply chain theory.

SUPPLY CHAIN MANAGEMENT OF STEEL GOODS – THE CONFIGURATIONAL APPROACH

The analysis of supply chain of steel goods was performed in a metallurgical company. The surveyed company of fers a wide range of carbon steel goods from largest Polish manufacturers. Except for domestic products the company offers products imported from the European Union, the East and Asian countries. The main domestic customers include enterprises in construction, mining and heavy industry as well as companies in shipbuilding, energy and, for several years, gas industry. The company is headquartered in Southern Poland whereas its 8 branches are spread across the country.

Thanks to the wide range of available products the analysed company outstands among other steel distributors. This constitutes one of the company' s greatest value, since the availability of products in one place, which considerably reduces transport costs, is of great importance for contractors. The possibility of batch picking is often more essential for the customer than the price, which, in case of small amounts, may change. A

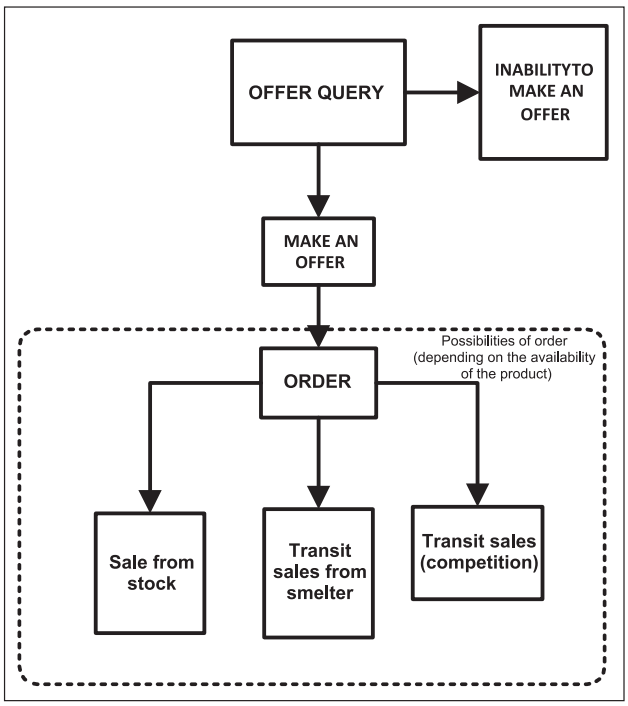

Figure 1 Order processing – stages from an inquiry to an order

wide range of product is additionally extended to the possibility of own specialized transportation to the outlined place under the conditions defined in the purchase agreement.

The implementation of a potential order starts from bidding. After receiving an inquiry , a suitable of fer is prepared, which depends on the kind of material as well as inventory or possibilities to receive material within a given time. If the goods and purchase conditions much the customer expectations, an order is placed and this, in turn, starts the phase of order processing (Figure 1).

Depending on where the of fered product is placed, order processing can be performed in three confi gurations that is, sales from a warehouse, transit sale from steelworks or transit sale from a competitive supplier (Figures 2, 3, 4).

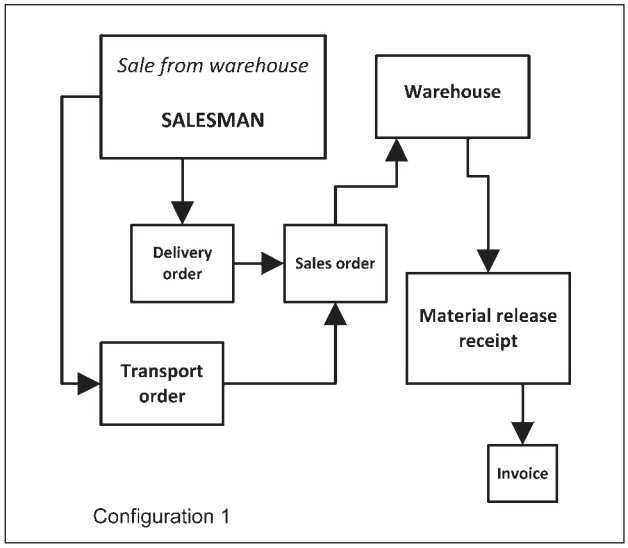

Figure 2 ConĀguration 1 – sales from stock

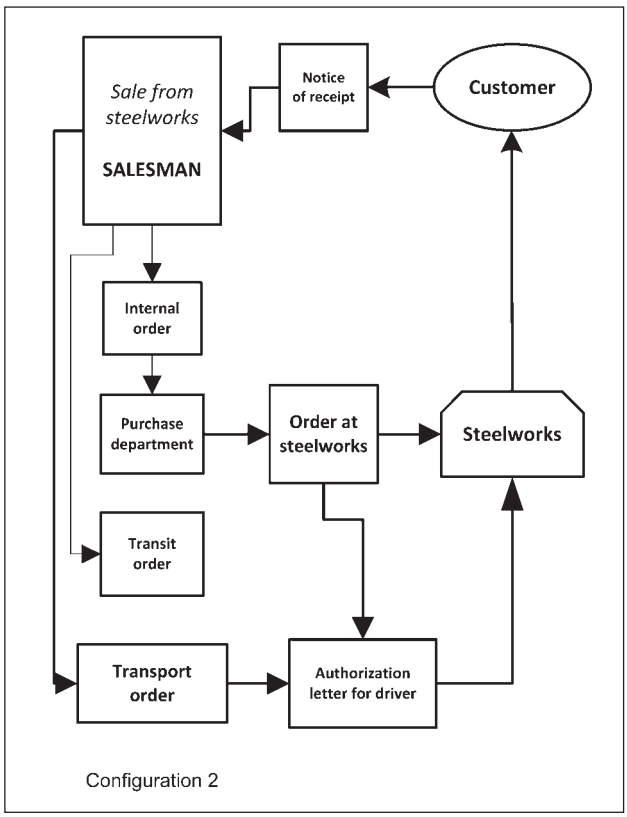

Figure 3 ConĀguration 2 – Transit sales from steelworks

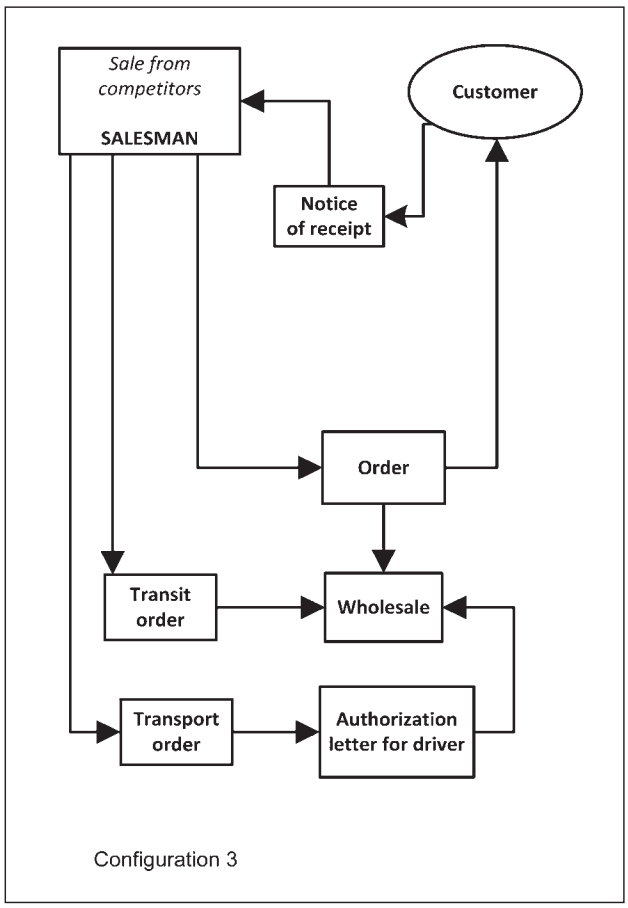

Figure 4 ConĀguration 3 – Transit sales from competitive wholesale

Sale from the warehouse constitutes the simplest form of supply chain confi guration. So-called transitional configuration of supply chain is more complicated. The goods ordered by the customer are then available in steelworks or at the competitive supplier . There are two possibilities available for a salesman. First relates to the collection of goods directly from the manufacturer, including the necessity to transport the ordered goods to the customer, which often involves transportation costs disproportionate to the value of the cargo. Another possibility is to collect goods directly from the manufacturer by the fi nal customer. The most complex situation occurs when the product is available at a competitive company. Then there is a need to transport the goods to the warehouse in order to avoid direct contact between the customer and competitor.

CONCLUSION

As a result of research conducted it was stated that:

1. Trading in steel goods is a very specifc area of trade. Steel belongs to materials widely used in many branches of industry around the world and the variety of products, semi-finished and finished products is very wide. Wholesales that want to build, maintain and expand their position on the market are forced to adapt their offers to different customer requirements. According to [13] metallurgical companies still have problems trying to transform the increasing sales of products into profits.
2. Gathering the whole material in one warehouse is essential for supply completion. This allows to co-pack materials during loading without the necessity to reload it in other places. However , the company development generates the need to create greater inventories which, in turn, requires better transport capacity.
3. Possessing only one main warehouse hinders the supply of materials to remote places because the growth in the served area results in necessity to extend the transport routes.
4. From the perspective of functioning and development of supply chain in the analysed company , opening other warehouses would be a favourable solution. This would enlar ge the storage space at a central point and reduce the cost and time of transport.

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Note: The responsible translator for English language is M. Pakula, Tarnowskie Gory, Poland