# MEMBERS OF A SUPPLY CHAIN AND THEIR RELATIONSHIPS

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***Abstract:*** Today, companies do not compete individually on the market, but as members of a supply chain, delivering their goods or services to customers through shared collaboration. The main objective of the members in the chain is to satisfy customer needs, in the interest of which they cooperate in value adding processes. The main objective of the present study is to characterise the members of a supply chain, their relationship and to measure performance. The most relevant literature published on this topic states that investigation of the performance measurement in supply chains from the side of relationships is considered 'uncharted territory'. However, the operation of a supply chain cannot be described without investigating its relationships.

***Keywords:*** supply chain, business relationship, performance measurement, relationship indicator

## Introduction

Today, business units do not compete with each other individually on the market, but as members of a supply chain, delivering the goods or service to their consumers in joint collaboration. Participants cooperate in the process of purchasing, production and selling; their mutual interest is to satisfy consumer demand, thus all the basic material and spare parts producers, product assemblers, processing units, wholesalers and retailers are parts of a chain, if they collaborate in and coordinate these processes. This collaborated supply chain view of companies is a business philosophy founded on trust, commitment, cooperation, mutual objectives and executive managerial support, as well as the acceptance and understanding of mutual dependence. The business relationship among the players defines the performance of the supply chain; therefore, particular attention should be paid to the examination of this element when the overall performance of a chain is being evaluated.

## 2. Methodology

In the focus of this paper, I concentrate on a supply chain and on the business relationships formed by its members. In order to properly define the supply chain, we mostly find studies. I start this paper by reviewing the most relevant literature in this subject, such as Jones and Riley (1985), Cooper (1997), Harland (1996), La Londe and Masters (1994), Mentzer and co-authors (2001), Attila Chikán (1997), Adrienn Molnár (2011), Andrea Gelei (2003), Judit Nagy (2008), József Popp (2009), Péter Lőrincz (2008) and Péter Németh (2009).

My study begins with the definition of terminology, such as supply chain and supply chain management. As there is no commonly agreed definition, I describe the definitions which provide the most complex view of a supply chain and its operation. After the definition of supply chain, I will clarify the members of the chain and the potential types of a chain. I will illustrate the power relations among the members and I will also present several indicators to explain the relationships among them.

One of the objectives of my paper is to compile a bibliographic summary of the accessible papers which generally define a supply chain, the types of supply chain and their key players, based on the existing definitions. It is also my aim to highlight the importance such shortage areas, as performance measurement, from the side of the relationships.

## 3. Results

In the 1980s, the definition of a supply chain meant the same as the synchronisation of a company's internal processes, such as purchasing, producing, sales and distribution. With the integration of these activities, companies facilitated the smooth operation of their internal processes and utilised their benefits. Together with the extension of the coordinated operations within a company, today we can also speak about processes which reach beyond the boundaries of a company. As this approach broadens, inter-company cooperation extends from the manufacturer of raw materials to the actual consumer. In this way, all the members of the chain are able to face ever-changing market challenges.

The supply chain and supply chain management are not unknown terms in the subject of logistics. According to Jones

and Riley (1985), the "*supply chain management deals with the total flow of materials from suppliers through end users...*". La Londe and Masters made the following statement in 1994: "*two or more firms in a supply chain entering into a long-term agreement;…the development of trust and commitment to the relationship;…the integration of logistics activities involving the sharing of demand and sales data;..the potential for a shift in the locus of control the logistics process"*. The members of the supply chain take part in the purchasing, production and in the process of delivery of goods or services to the customers (Harland, 1996). Cooper et al. (1997) defined supply chain management in the following way: "*…an integrative philosophy to manage the total flow of a distribution channel from supplier to the ultimate user"*. According to Lambert et al. (1998), the members of the supply chain take mutual part in the production and market distribution of the goods and services during their cooperation. In contradiction to Lalond and Masters' definition, Mentzer et al.(2001) describe supply chain as the cooperation of three members: "*supply chain is the group of three or more companies or individuals, who are directly involved in the inward and outward stream of all products, services, cash, information from the purchasing to the customer"*.

Chikán (1997) described the supply chain as a series of value adding processes which flows across many companies and creates products and services which are suitable to fulfil the needs of customers. Gelei (2003) formulated supply chain management as a conscious treatment aiming to improve the competence of the companies within the supply chain. Felföldi (2007) stated that "to develop a successful competitive strategy, it is vital …to reveal the operation of the whole chain…and always essential to plan and calculate."

On the basis of the discussion above, it can be concluded that the condition for the establishment a supply chain is based on the collaboration of two or more companies. The basis of cooperation is trust and commitment, which needs to be improved continuously by all members. They must accept their mutual dependence and share available information with each other. Members seek to establish a long term relationship, during which all members will also try to achieve their own goals. The main objective of the members of a supply chain is to satisfy customer demands, in the interest of which they cooperate with each other. Their mutual interest is the success of the entire supply chain, as being part of a successful supply chain may provide competitive advantage for its members. As today supply chains are competing with each other on the market, companies may become dominant through their supply chain. They can utilise their sources, information and/or knowledge of a market and their social capital in a more efficient way. A company joining a supply chain will also get access to information relating to the areas of production, management and logistics. It can acquire technological advantage against an external company, as its members can share any assets needed for production or service.

As in every cooperative effort, a hierarchical order may develop within a supply chain. The central company can get to a power dominance against the other companies, which can be also due to its market position, capital power and brand knowledge (Lőrincz, 2008).

At least two business enterprises must belong to a supply chain. In order to find the length of a supply chain, all members must be counted. The more members are found, the longer the supply chain is, but it is definitely short if the producer sells directly its product or services to the customers. Three types of supply chain can be differentiated in view of the number of its members, as illustrated by the figure of Mentzer (2011).

A **direct supply chain** belongs to the simplest forms, where only the supplier, the central company and the customer take part in the product flow (Nagy, 2008).


***Figure 1:*** Direct supply chain of Mentzer (2001)

*"The extended supply chain includes the supplier of the direct supplier and the customer of the direct customer as well, thus comprehending in- and/or outflows of the products, services, monetary assets and/or information"*


***Figure 2:*** Extended supply chain of Mentzer (2001)

*(Nagy, 2008).*

The **ultimate supply chain** involves all the members, who take part in the flow of all goods, services, information and capital from the first supplier to the end customer. Similar to the traditional supply chain, the ultimate supply chain consists of a central company, suppliers and customers, but in this case, the ultimate supplier and ultimate customer appears, as well. Another additional participant is the **logistics supplier**, which is in contact with the customer and the central company. Its task is the delivery, distribution and the planning of all related logistics tasks.

The next participant is the **financial provider**, which supports the operation of the central company and the supplier with payment related and credit lending services. The participants of the supply chain conduct **market surveys** in order to gather useful information on the demands and on the feedback of customers. Today, we can say that companies which do not use market surveys are operating "blind". By understanding the ultimate supplier and ultimate customer, it becomes possible to track and properly manage all the

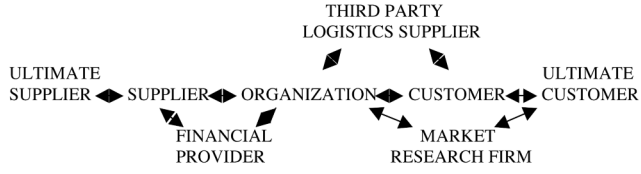


***Figure 3:*** The figure of Mentzer(2001); simplified.

processes of a supply chain (Nagy, 2008).

The effectiveness of chains can be assessed by measuring performance, which means the numerical expression of the efficiency of processes in a chain. This measurement gives the players in the chain a direction and provides a comprehensive picture about the areas where more opportunities lie and where problems might occur. Performance measurement is mostly approached from a performance side and the significance of relationships among supply chain players is disregarded.

A supply chain is a node where the nodes are the business units. The relationships can be defined as the connecting strings among the nodes. Relationship among members determines the nature of the supply chain (Gelei 2010). "The relationship among supply chain members has an effect on the performance of the supply chain" (Cooper at. al, 1997) and "the critical factor of supply chain performance is the nature of relationships in the supply chain" (Seakman et al, 1998). Players of a well functioning supply chain could achieve competitive advantage in the market, as all members share any available information. Socio-cultural bonds, such as trust and commitment, are established. They pay attention to the fact that their decisions could also affect other players of the chain into consideration. They contribute to each others' profitability and aspire to gain mutually shared advantages.

The **performance measurement** of a supply chain means the quantification of the efficiency and effectiveness in the internal processes of the chain. Molnár-Felföldi-Gellynck (2007) discussed weaknesses of those frameworks used to measure supply chain performance, while highlighting the neglect of the fruit and vegetable sector as an important area of the agri-food sector requiring analysis from this aspect. Performance measurement shows the participants of the chain where their business is heading and provides a comprehensive picture of areas with more potential, as well as problematic areas. This measurement can be conducted from the **performance side**, for which there are plenty of economic indicators or from **relationship side**, which has not been fully discovered yet, although it is understood, that "the relationship among the chain members impacts the performance of the chain" (Cooper at. al, 1997). Molnár-Felföldi-Gellynck (2007) stated that measuring and interpreting supply chain performance with an approach leaving out the factor of relationship might lead to misunderstanding the operation of supply chains. The strong, positive relationship among the members is essential because members are able to take a competitive advantage of their market on this basis.

According to Molnár (2010), for the relationship measurement, there are several relationship indicators available, such as trust, economic satisfaction, social satisfaction, dependency, non-coercive power, coercive power, reputation and conflict. These listed indicators are less quantitative then the economic indicators. The members of a chain must evaluate the statements aligned to an indicator on an ordinal scale, thus giving us the answer whether it falls into the completely disagree or the completely agree categories. The information on how players keep their promises to each other explains the scale of **trust** within a chain. **Economic satisfaction** describes how the business relationship with the suppliers/customers contributes to the profitability of the company, while **social satisfaction** explains the level of detail to which the suppliers/customers share information with a company. **Dependency** shows how the company is dependent on the abilities and resources of its suppliers/customers. The fact that suppliers/customers prefer the partner company in cases of mutual satisfaction could be defined as **non-coercive power**. **Coercive power** reflects the scale of how sure a company can be that its suppliers/customers will not retaliate if the business partner does not accept their proposals. **Reputation** gives information on the precision and professionalism of suppliers/customers; on the other hand, **conflict** provides cases when suppliers/customers are not aligned in their decisions with a partner company. These listed indicators provide a comprehensive picture of the relationship of the suppliers/customers and the partner company and, therefore, also on the performance of a company (Molnár, 2010).

## Conclusions

My description of a supply chain is based on the observations of La Monde and Attila Chikán. Therefore, I define a supply chain as the processes of cooperating companies that are aimed at creating value based on the existence and development of trust.

The significance of supply chains is becoming more obvious, as it can be observed currently that companies can operate most efficiently as players in a chain. Players in cooperation with each other have recognised that it is also worth establishing a good relationship with other players of their chains, since this could result in competitive advantage against competitors and ensure mutual advantages. Since the nature of connections determines the performance of a chain, it is worthwhile and justifiable to examine performance from the relationship side. Although it could still be seen as an area requiring further study, the relationship has to be included as a vital part of measuring performance, since a complete picture of supply chain operation cannot be gained without examining indicators on its members' connections.

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