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CREATING ADDED VALUE FROM THE SUPPLY CHAIN

IZABELA OLTON[1]

Abstract: Increase in the effectiveness and the reduction of costs are still important up-to-date targets for the today's companies. To achieve good and fast results in these areas, the companies focus their attention on supply chains. The leadership can be gained only by those who, together with partners, will set a supply chain which is flexible, intelligent, and adaptable to the requirements of the market. Although the creation of more integrated supply chains is the ambition of many organizations, many enterprises perceive building such a chain mainly through the prism of their own results. In order to achieve real progress in this area, matters should be seen from a broader perspective. Moreover, the results of all related companies also should be improved and create good partnership. To build an integrated supply chain and management thereof is the only thing companies can do today to improve their results. Thus, more and more often, the relationships binding different phases of logistics, a structure and methods of supply chain management, and its dynamic approach undergo examination. Hence, there is emphasis on the need for keeping these processes in a broader perspective which goes beyond the enterprise.
Keywords: logistic, supply chain, value chain.

1. Introduction

The concept of a supply chain is used in company management in highly developed countries on an increasing scale with effects getting better [1]. Company practices indicate a growing number of systemic treatment and the development of logistics (including a supply chain) and its functions in the aspects of integration and strategy, which is reflected in the directional development of the integrated-management concept. The general concept of a supply chain has been disseminated through entrepreneurial activity in the second half of the twentieth century. Its introduction is associated with the need for alternatives to the traditional perception of the relationship between suppliers and customers. This is a consequence of intensifying the need for the cooperation between enterprises which are in pursuit of their distinct objectives in an increasingly turbulent environment where a pace and a scale of changes have been significantly improved. Companies, which operate in the manufacturing, distribution, or delivery business, are forced to solve problems of space, time and costs regardless of a type of production, distance from markets, raw materials, etc. For this reason, most companies treat supply chain management as a strategic opportunity in gaining a competitive advantage, because strong competition on the market enhances the highest efficiency towards the flow of information, products and resources. Thus, a trend towards competition among whole supply chains becomes more and more frequent in comparison with competition between enterprises.

As a result, innovation in this area is one of the factors in the success of modern organizations [2]. Thereby, the importance of a strategy for logistics rises amid functional strategies of the company because the logistical system determines not only the processes in the operating area, but it affects defining most of the objectives and strategies of the company, and thus the structure of the supply chain [3].

[1] Ph.D, Czestochowa University of Technology
iolton@bud.pcz.czest.pl
ul.Akademicka 3, 42-200 Czestochowa, Poland

2. Programming benefits in the supply chain

In the supply chain, in which individuals cooperate in producing and delivering products to final buyers, dependence between achievements of particular enterprises play a special role. To ensure close cooperation among suppliers and the flow of information is therefore critical to sufficient flexibility in the face of changing customer expectations[4]. In the same vein, fast and efficient customer service, offered according to expectations, is not possible without the exchange of information between the final buyers and distributors. On the one hand, it allows placing orders quickly which affects planning the production as well as supply and informing about changes in buyers' preferences. On the other hand, it allows giving notification of the progress in satisfying customer demand. The emphasis should also be put on an important feature of cooperation between enterprises in the form of the supply chain, that is, the integration of activities while maintaining independence in the legal sense [5].

According to the definition proposed by M. Christopher, supply chain management hinges on the management of relations between suppliers, buyers, and customers so that best quality service may be delivered to customers at lower costs for the entire chain [6]. When determining the basic principles of supply chain management, it is worth quoting the approach of The Educational Society for Resource Management which indicates the effects that can be achieved through cooperation within the supply chain. These are namely [7]:

- *operating speed* – determined by an appropriate infrastructure and arrangement of logistics which enable the flow of goods, information and funds. The speed of the entire supply chain and the resolution of the differences in the time of task performance by individual links are particularly important from the point of view of the supply chain design,
- *harmonizing the activities of successive links in the chain* – associated with time difference required to perform the tasks of the individual units in the chain; it will enable the reduction of the stock level and thereby reduce the level of costs. It represents a significant challenge in the case of complex and sophisticated chains because the relationships between the individual cells (entities) may have a tendency to antagonism, use their own bargaining power to transfer any increased amount of costs to the cooperator,
- *ensuring the flow of information between cooperating entities in an appropriate form, place, and time* - this particularly concerns several issues: demand for finished products ordered by clients, ensuring an adequate level of stocks of raw materials, stuff, or semi-finished products in single units, determining the duration required for order execution and to ensure cash flows needed to protect stocks. The efficiency and effectiveness of the course of action depends on the results of cooperation between different links in the chain. The guarantee of the exchange of information between all cooperating units is also one of the basic conditions of integrating activities in the supply chain. Therefore, the implementation of these principles should facilitate the adjustment of supply to demand as well as measuring the performance of the whole chain, regardless of the scale of its activities, and monitoring the progress of these processes by each participant in the chain,

- *knowledge and understanding of the expected results of cooperation* - decisions on the formation and development of individual entities in the supply chain should take into account linkages with other units on the market. Hence, reciprocal arrangements between partners are important due to regarding the expected results for the entire chain and the use of appropriate indicators of expected achievements,
- *creating value for stakeholders* – a suitable form of cooperation between enterprises should enable stakeholders to achieve higher benefits than under conditions of the separate operation of each company. It is therefore necessary to recognize and consider the expectations of all stakeholders in the activity of the supply chain,
- *reliability in delivering goods to the ultimate purchasers* (emphasised by M. Christopher, 2000 [8]) - reliability of supply can be achieved by the focus on the course, improvements, and, if necessary, also on the re-engineering of processes that influence the performance of the entire chain.

3. Designing an optimal supply chain

A standard practice in manufacturing companies is the treatment of the supply chain as something that starts at the source of supply and moves forward. The source of supply is that section of the chain which is under the control of the company. Unfortunately, this organization of supplies makes all efforts to streamline the former its usually lose impetus before they reach the customer. It is important to focus on customer needs. With this approach, one should start from the last link - the buyer - and the consequent shifting to the beginning of the process. If it starts from customers, one has to take them into account. Therefore, everything that precedes taking delivery by the customer is of strategic importance [9]. The primary aim should be locating the final stages of production closer to customers. Then, one can obtain better results in the cases of individual products. The means to achieve this objective are first and foremost increase in the accuracy of sales forecasts, transport optimization, and acceleration of product delivery.

This approach is part of a theory of concurrent engineering (Fig.1) which today is becoming a trend in the turbulent market environment. The theory itself implies the product-planning stage should consider every stage of its future life cycle. Experts in waste utilization deal with issues which address wearing out of the product. In parallel, the question of how the product will be displayed on a shelf in the supermarket, or a warehouse has to be answered. Determining how it will be distributed is also the case. Eventually, engineers will be involved in due course. They most certainly understand thoroughly what they should design, so that the product will become successful. Similarly to logistic processes, transport, storage, and distribution of supply must be planned on the basis of concurrent engineering. Only then, specialists will not be separated from each other in the company. Hence, they will find opportunities to cooperate within the entire supply chain structure.

Supply chains usually include many departments and external entities, each of which having its own priorities and goals. Despite these arrangements, employees should work together because only then supply of products and services can be performed faster and at low cost. Acting in conformity can be achieved by focusing on the problems occurring within the company [10].

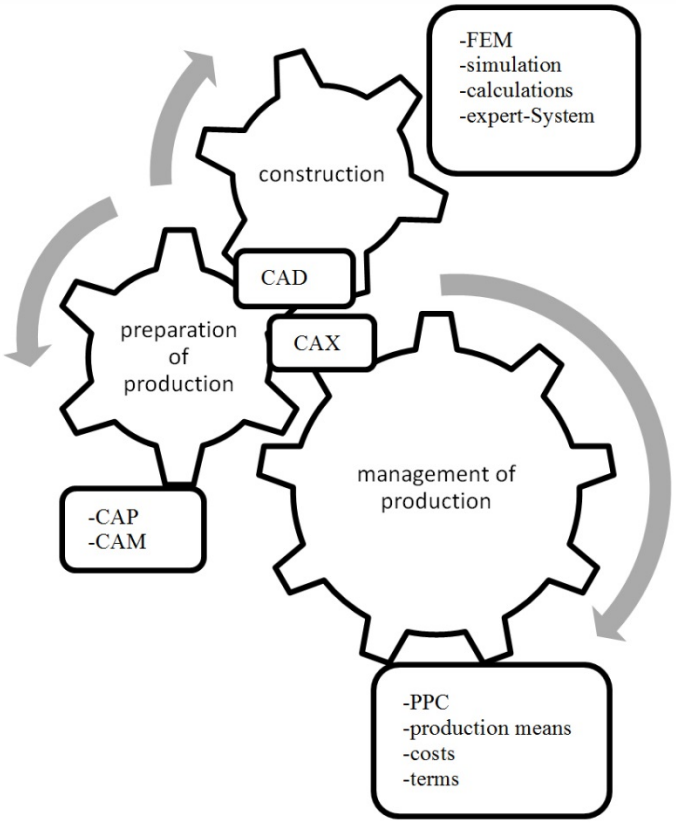

Figure 1. The concept of concurrent engineering
Source: Author's elaboration based on Supply Chain Risk, 2008 -2009, AMR Research, may 2009

Managers usually cope with them well, however they bypass problematic areas which emerge when the company has contact with external entities. Especially as defining the roles, duties and responsibilities for entities that cannot be directly controlled seems an occupation which is too laborious and time-consuming. Coordinating activities which involve several companies is also a difficult task because each of them has a different organizational culture of a formal and informal kind. Consequently, employees can not refer either to shared values or a sense of loyalty. Thus, the only way to persuade companies that cooperate within one supply chain to act in the interest of the entire supply chain is the adaptation of the program of financial incentives to employees' needs. The supply chain functions properly when the objectives correspond to motivation of all its members, that is, when the benefits, costs and risk factors for joint action comprise the whole network. Of course, linearly proportional sharing of benefits does not exist because we deal with the discrete optimization, not the continuous one. It means that the "little" ones gain on such cooperation more than the "big" ones. Possibilities of cooperation occur if the parties realize that competition in the supply chain is marginal for them, that is,

simply unprofitable. In addition, the companies are willing to opt for cooperation if it gives them the opportunity to expand the market. Divergent goals and motivations of the participants in the supply chain will not give optimum performance. The lack of convergence in the case of incentives is a common cause of excess or shortage of stock, erroneous forecasts, problems in the area of customer service, etc. [11]. Only companies that understand the motives of firms from the entire supply chain and only those which also take into account the broad context of decision-making that includes marketing, production, logistics, and finance can deal with the problem of stimuli which are mutually incompatible with incentives.

Improving the efficiency of the supply chain can be made by changing the amount of stimuli and incentives or their proper structure. Companies can synchronize incentives throughout the supply chain by tracking and controlling more variables or disclosing hidden actions.. Some companies have already benefitted from the systems by which sales can be monitored in real-time throughout the supply chain. Companies should therefore examine their supply chains periodically as changes in technology or operating conditions can lead to discrepancies in the sphere of incentives even in the most efficient provider networks.

4. Innovative supply chain management

In assessing the economic efficiency and effectiveness of supply chain management, the effects aggregation time always has to be resolved. It is necessary to do analyses in the field of current and further solutions. Moreover, each system is dynamic so it is subject to constant changes and requires improvement. The efficiency of supply chain management in the enterprise is thus a concept that reflects the appropriate relationship between the effects and both the objectives and inputs in structural and dynamic terms. Of particular importance is the formation of the optimal value structure and the level of costs together with the identification and implementation of the potential for effectiveness of the entire supply chain, but the main reserves of cost reduction occur in the non-productive sphere and result from the flow of funds and information [12].

Of course, it is not possible to make a profit without proper planning and accurate decision-making. Wastage in the sphere of transport is often associated with large distances between contractors or too many points in between. Close-up location of a provider contributes to the improvement in the realm of trans-shipments through better organization, standardization of equipment and loading units. It can reduce stock and shorten the transport time.

Nowadays, the company also cannot maximize profits and satisfy their own interests by treating contractors as opponents, but it must seek most effective cooperation [11]. That is why the selection of contractors is such an important issue. Decisions must be made on the basis of a thorough analysis of their financial situation and evaluation of products. Apart from the relations between suppliers and customers, participants specializing in shipping companies often play an important part in integrating the flow of products and information. This applies mainly to satisfying the international transport needs as self-service in small and medium enterprises becomes a risky and irrational venture.

Thus, progress in supply chain management depends not only on the technical and the organizational structure, but also on people [12]. Increasingly, two factors are highlighted in modern management methods, that is, the rank of a staff selection and, as a result, the

creative strategic interaction of enterprises that participate in the flow of products and information. Practitioners also emphasize that people involved in the creation and implementation of the supply chain must have project management certificates. Not in the least because the area is dominated by projects (the dynamic approach) – but due to the fact that the discipline in force which is imposed on the planning and implementation of projects is equally useful in normal operational management. The only significant difference between directing current operations and directing a project is the deadline of a task.

In conclusion - the effectiveness of integrated supply chains depends to a small degree on the size of investment in information technology (IT) solutions and the centralization or decentralization of the chain. These factors have been considered so far as absolutely essential. While defining new solutions, a balance between automation being introduced and the use of human work should be kept. The researchers were able to identify six common characteristics to organizations achieving above average results owing to their integrated supply chains. They have been outlined in Figure 2.

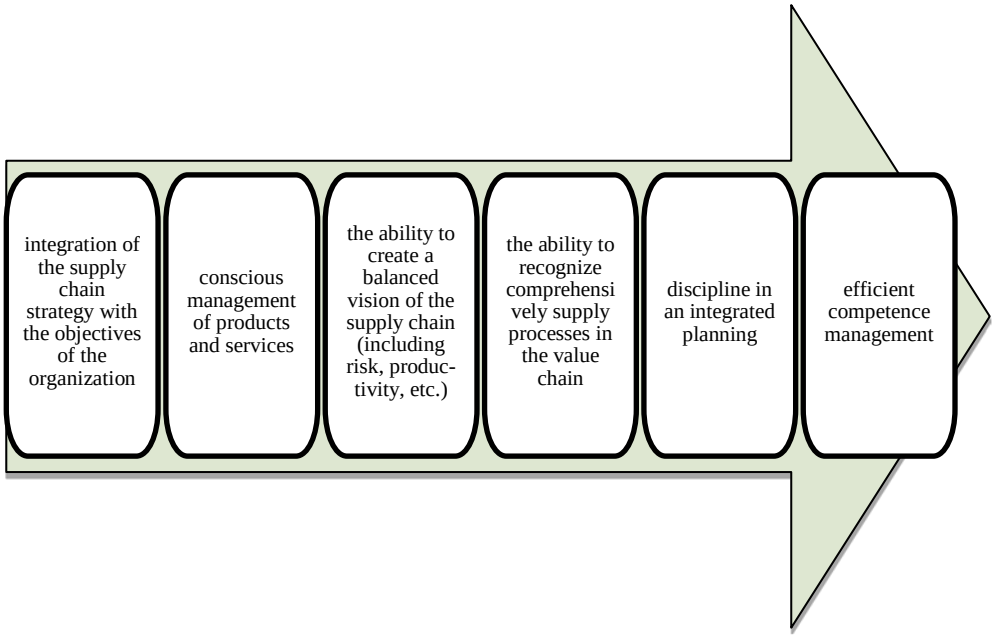

Figure 2. Determinants of organizational benefits from integrated supply chains
Source: Author's elaboration based on
Supply Chain Risk, 2008 -2009, AMR Research, may 2009

Automation is often an expensive investment. What is more, methods introduced are usually inflexible and highly resistant to changes in business processes. Thus, the human factor becomes crucial – efficient competence management demonstrates significant potential for the company. The synergy of these factors determines the innovativeness of companies in establishing supply chains which are flexible, sensitive, focused on creating value, and which may offer a competitive advantage.

With no doubt, a new reality, which includes all operators, will be encouraging to increase competition in the field of supply chain management. The challenge for companies will however be efficient and effective design of activities despite an increasing volatility factor [12].

5. Summary

Coordination of activities within integrated supply chains is very demanding and time-consuming. On the one hand, due to globalization and the growing geographical dispersion of counterparties (market expansion increases the distance between them). On the other hand, it is connected with the increasing diversification of distribution channels and information about them. That definitely makes supply chains more complex and customer claims become larger.

This regularity overlapped with an adverse effect of the economic slowdown which caused additional pressure on efficiency. The situation in which companies found themselves may also have its advantages as it can lead to serious and positive changes for customers, in the market of logistic operators, due to the greater propensity of companies to open their systems. Extending the competencies of all participants in the supply chain can accelerate the integration of information systems of individual companies. Consequently, apart from spontaneous lengthening of supply chains up to the final consumer, the formation of supply chains of products and services (not the products themselves) should also be involved. Customers increasingly expect companies to satisfy needs, not just to supply articles which bring customer satisfaction. However, the biggest challenge is to create a chain of trust referred to good partnership, which is the main determinant of system integration based on partner relations.

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