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Securing enterprises competitive advantage through the management of components of distribution system

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Abstract

Due to increasing competition on the national and global markets, decreasing international trade barriers, development of information technologies and changing customer requirements, enterprises found themselves in a need to seek for more efficient business management models. The tendency is observed, that competition on the market is taking place between enterprises distribution systems rather than between enterprises themselves. Therefore efficient management of distribution system becomes a powerful tool for many companies allowing for obtaining competitive advantage. Though the majority of discussions related to distribution systems and advantages they propose started back few decades ago, everyday practice proves that so far many problems related to organization of such systems and integration of all necessary components (elements) into the one common entirety still are unsolved. Bearing in mind mentioned above topics, authors of the given article set out a goal to perform a theoretical analysis of the integrate elements of distribution system as means allowing to obtain certain competitive advantage for an enterprise and present results from the research showing attitude of Lithuanian industry companies towards the understanding of distribution systems and their particular elements as a tools to gain competitive advantage.

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1. Introduction

Logistics nowadays is treated as a strategic tool to obtain and assure competitive advantage. Enterprises that introduce planning and management of logistics into the long term strategy may achieve certain competitive advantage (Hutt & Speh, 2001). Enterprise which seeks successful performance and competitive advantage has to understand the structure and components of logistics system, processes inside it and external factors that may affect smooth functioning of the system. Enterprise should create integrated logistics system, i.e. join sales, manufacturing, information management, marketing and all related activities into one well-functioning unity.

Ever increasing globalization and competition, constantly developing information technologies, increasing requirements to the quality of services provided by company and changing relations between companies put a pressure on the enterprise to look at its logistics system and apply new methods to its development allowing to keep this system at the most efficient level.

The main goal of provided article is to discuss relations between company's distribution system and its competitive advantage. Article investigates impact of management of elements the distribution system consists of and the company's competitive advantage. Paper consists of introduction, 3 sections, conclusions, and list of references. First section is dedicated to the analysis of theories related to competition, competitiveness and competitive advantage. Importance of distribution systems and its possible impact on company's competitive advantage is discussed in the second part. Third part provides results of investigation that was dedicated to find the main elements of distribution system and their impact on company's competitive advantage. Article ends with conclusions and list of references.

2. Competitive advantage as a part of enterprise's long term strategy

The triad of definitions – competition, competitive advantage and competitiveness explains the essence of today's market economy and forms systematic view towards the encouragement of optimal distribution of limited economic resources as well as its optimal use in order to assure economic development and welfare of the consumers. The statement can be made, that competition is the main engine of economic development encouraging all the enterprises to seek for new competitive advantages that would ensure its competitiveness.

During the comparison of definition of competitiveness and competitive advantage provided by Porter (1993) it is worth to note that the problem of description of provided definition arises. In some scientific researches (Keršienė, 2009; Banytė & Salickaitė, 2008; Korsakienė, 2004) competitiveness is understood in two ways – as an advantage of some indexes and as advantage of already existing system of legal, political, economic, and social and other factors. Therefore a totally new understanding, the main point of which is that not the competitive struggle itself but the ability of market participants to do well in this struggle, i.e. competitiveness, is proposed. The definition of competitiveness is rather abstract and it is not connected with exact phenomenon taking place in well-defined place and time space. It allows generalizing separate events and situations pointing out their common features. Because of that the term competitiveness don't have one strict and common definition and different scientists and practitioners use it to describe different state of separate market participant as well as for the comparison of the state of different participants. Today competitiveness is a definition that still is unclear and commonly undefined. Probably the best summarization of the definitions applied to competitiveness is proposed by World Economic Forum, which states that "competitiveness is the ability to reach and maintain high growth rates". Separate enterprises could define their success factors in a different ways. It might be increased level of sales, increased market share or increased revenue. Both internal resources of the enterprise and its external environment may have a huge impact on those. New approach is given by Porter & Kramer (2011): in order to be successful organization must create shared values – the success of every company is affected by supporting companies and infrastructure around it. The concept of shared value can be defined as practice that enhance competitiveness of company while simultaneously advancing the economic and social conditions in the communities in which it operates. Creation of shared values focuses on identifying and expanding of connections between social and economic progress. (Porter & Kramer, 2011)

Competitive advantages could be related to the different aspects of enterprise activity: price, product, quality, service level, logistic system, shared values, social responsibility and so on. However, the majority of these could be

imitated by the direct competitors. Real advantage in a long term period could be obtained through the elements of competitive advantage which are hard to replicate for the competitors. Therefore competitive advantages are those unique tangible and intangible means that enterprise possess (areas of activities that are strategically important for the business success) and cannot be replicated by the competitors in a short term period. They are different from those which facilitate competitive struggle temporarily. In order to become permanent, these advantages should be established in the resources, culture, experience and traditions of the company. There is an opinion, that long-term competitive advantages create a core of enterprise's strategy. At the same time there are no common models or methods allowing company to assure long-term competitive advantages. There are just few tests that let evaluate if company already gained long-term competitive advantage:

- advantage should be really outstanding to distinguish a company from the competitors
- advantage should remain while competitive environment changes
- advantage should be recognized by the customer (advantage should provide certain advantage to the customer)

Development of long-term competitive advantages on the enterprise level could take different paths and have different forms. Resources of these advantages depend on the particularity of company's activity, but the most common fields for all the companies are:

- low expenditures
- differentiation of product
- niche marketing
- high level technologies and operations
- quality of the product
- service of the product
- synergy
- vertical integration
- culture of the organization (Vasiliauskas, 2002).

The provided analysis of theoretical aspects of competitiveness and competitive advantage could be summarized that companies shift from price related to non-price related means assuring competitive advantage. These methods become a security of success of modern company. More and more companies seek for sustainable development principles in all fields of their activity. It means that majority of attention should be paid and majority of efforts should be dedicated to the retrieval of means assuring long-term competitive advantage. Similar opinion could be found in the works of Griffiths & Zammuto (2005). They state, that competitive advantage could be obtained with proper management of company's resources, like finances, personnel, technologies, materials and others and proper coordination of company's functions, like marketing, manufacturing, distribution and others. In other words, this statement points out the necessity of well-developed and properly maintained logistics and distribution system.

3. Importance of distribution system and its elements

Companies seeking for certain competitive advantage and being a leader in the market pay a lot of attention to their distribution system. Majority of top level world companies understood that distribution systems may increase company's efficiency and provide additional added value to their customers. This point of view is supported not only by business representatives but also such scientists as Richey, Chen, Upreti, Fawcett, & Adams (2009), Reyes (2009), Sanders (2005, 2007), Storey & Emberson (2006), Power (2005), Maloni & Benton (2000), and Cooper, Lambert, & Pagh (1997).

It is very often a case that term "distribution system" is mistaken with the term "management of functional fields of logistics", however recently more and more scientists (Soosay, Hyland, & Ferrer, 2008) agree that distribution system is much broader definition, incorporating a lot of activities and connections related to physical distribution. Together with such understanding a new concept – management of distribution system – was about to form. This

concept emphasizes the importance of collaboration between supplier and client (Meidutė, Litvinenko, & Aranskis, 2012; Cao, Vonderembse, Zhang, & Raguhunathan, 2010; Singh & Power, 2009; Richey, Chen, Upreti, Fawcett, & Adams, 2009; Soosay, Hyland, & Ferrer, 2008, Sanders, 2005, Maloni & Benton, 2000).

It is important to recognize that distribution system may stretch over national boundaries. According to Reyes (2009), Tan, Smith, & Saad (2006), in most cases it is a global network, where distribution processes are performed on the international context.

Cooper, Lambert & Pagh (1997) points that distribution system and its management is an integration of business processes from the final user to the supplier, where supplier provides products, services and information creating added value to the client. Authors like Wiengarten, Humphreys, Cao, Fynes & McKittrick (2010), Ramesh, Banwet & Shankar (2010), Cao, Fynes & McKittrick (2010), Reyes (2009), Power (2005), Cooper, Lambert & Pagh (1997); Fawcett, Magnan, & McCarter (2008) highlight the importance of collaboration and coordination of all system's activities as well. Fawcett et al. (2007; 2011), Davidavičienė & Meidutė (2011) denote that distribution system management means integration of all the activities based on comprehensive collaboration in order to obtain competitive advantage in the market.

Conclusion can be made that distribution system is not just management of material flows, but also integration of business processes, management of relations between all the participants of the system and collaboration which aims at creation of added value and competitive advantage for the company.

Therefore distribution system can be defined as a network of companies that are involved through the different connections into the different processes and activities. According to Chen & Paulraj (2003), Storey & Emberson (2006), distribution system is complex, consisting of many elements necessary to create added value. Complexity and composition of distribution system as well as efficiency of such system management is decided by the company itself (Hanna, 2010; Sandberg & Abrahamsson, 2009). The proper management of distribution system and its integrated elements can be seen as a powerful tool to assure competitive advantage.

The next chapter is dedicated to the discussion of results obtained after some investigations within Lithuanian business companies with the aim to find out how these companies understood elements of distribution system and how they recognize advantages provided by proper management of such system.

4. Investigation and discussion of obtained results

The main aim of the research discussed in this chapter was to identify the understanding of importance of distribution system elements and their management within Lithuanian business companies.

The research is based on the application of expert evaluation method. During the research 10 experts working in logistics and distribution branches of different companies were selected. The aggregated opinion of these experts was treated as a solution of the problem.

Reliability of the expert's evaluation depends on the number of experts and the knowledge level of each separate expert. If there is a need to make a decision based on the expert's evaluation, it is necessary to evaluate the compatibility of expert's opinions. This was done by application of multicriteria evaluation methods (Podvezko, 2005).

Research was conducted like a personal interview with every separate expert. These were 2 representatives from small enterprises, 2 from the medium and 6 from the large industrial (manufacturing) companies. In order to assure objectivity experts were selected from different branches of industry. Also it is worth to denote, that 20% of experts represents manufacturers of materials, while other 80% – producers of finished goods.

The first important question to the experts was if they recognize the distribution system and its integrated elements as a mean to assure competitive advantage of the company. All answers were 100% positive which in turn allows concluding that Lithuanian companies agree with the necessity to develop and manage their distribution systems.

Also experts were asked if during several recent years' companies they are representing made some changes in their distribution system. Answers received prove that all companies recently made certain changes, which in turn allows concluding that Lithuanian companies recognize distribution system as a tool assuring their competitive advantage.

When experts were asked to denote what exact results were obtained after the changes in their companies' distribution systems, answers distributed as follows (see table 1):

Table 1. Changes determined by the alterations in distribution systems

Size of the enterprise	Decrease of expenditures	Decrease of lead time	Decrease of employees number	Increase of sales quantities	Enhancement of customers number	Increase of product quality	No changes were observed
Small	2	1	0	1	0	0	0
Average	2	1	0	2	0	0	0
Large	6	5	3	2	1	4	0
Total	10	7	3	5	1	4	0

All 10 experts noticed that after some changes in the distribution system also decrease of expenditures was observed. 7 out of 10 pointed out that it was a decrease in lead time and 5 out of 10 notified increase of sales. All mentioned changes allow for competing more effectively and this is just due to some alterations in enterprise's distribution system.

Next question was dedicated to identify the most important activities (components) that experts treat as prerequisite for mentioned above changes and smooth performance of distribution system in common. The expert's answers led to the conclusion that the most important elements for the proper performance of distribution system are: selection of supply sources (SSS), identification of the needs of the customers (INC), identification of the order quantities (IOQ), selection of purchase methods (SPM), determination of the stock quantities (DSQ) and organization of purchase activities (OPA).

The most important task for the experts was to give a priority rank to every single element of distribution system that was identified in the previous step. This process was arranged in several steps. In the first one, values of each element were determined. The biggest value given to a particular element equals to 6, since 6 is the number of identified elements determining smooth performance of distribution system. Results are provided in the Table 2.

Table 2. Values of the elements of distribution system given by the experts

Expert m	Element's value n given by certain expert						SUM
	INC	DSQ	SSS	SPM	IOQ	OPA	
E1	6	1	3	2	5	4	21
E2	4	2	3	1	5	6	21
E3	6	1	3	2	5	4	21
E4	5	2	3	1	6	4	21
E5	4	1	3	2	6	5	21
E6	5	2	3	1	4	6	21
E7	4	1	3	2	6	5	21
E8	5	1	3	2	4	6	21
E9	6	1	3	2	4	5	21
E10	6	1	3	2	4	5	21
Sum of the values	51	13	30	17	49	50	

Then, applying equation $R_{ij} = (n + 1) - B_i$ values were changed to appropriate ranks (weights). These are provided in the Table 3.

Table 3. Ranks given to certain elements of distribution system

Expert m	Element's value n given by certain expert						SUM
	INC	DSQ	SSS	SPM	IOQ	OPA	
E1	1	6	4	5	2	3	21
E2	3	5	4	6	2	1	21
E3	1	6	4	5	2	3	21
E4	2	5	4	6	1	3	21
E5	3	6	4	5	1	2	21
E6	2	5	4	6	3	1	21
E7	3	6	4	5	1	2	21
E8	2	6	4	5	3	1	21
E9	1	6	4	5	3	2	21
E10	1	6	4	5	3	2	21
Sum of the values	19	57	40	53	21	20	210

Also, some additional calculations based on well-known formulas were performed. All these were done in order to calculate the ratio of concordance, which in our case equals to 0.862. This is much higher than 0.5 which allows preliminary suggestion that expert’s opinions are harmonized.

Magnitude of concordance ratio is determined through the criterion χ^2 , which in our case is equal to 43.142.

Then selecting a strict level of magnitude ($\alpha = 0, 01$), and determining number of degree of freedom ($\nu = 5$), we get the meaning of χ^2_{kr} which equals to 15.086. And since meaning of χ^2 is much bigger than χ^2_{kr} conclusion can be made that opinions of all the experts about the importance of components that assure efficiency of distribution system coincide, and calculated average ranks (see Fig. 1) represents common opinion.

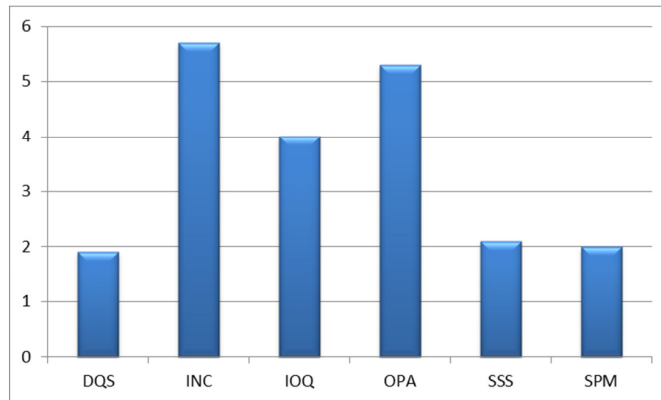


Fig. 1. Importance of components of distribution system (average meanings)

Provided figure denotes, that all the components according to their importance should be stringed in a following sequence (from the most to the least important): identification of the needs of the customers (INC), organization of purchase activities (OPA), identification of the order quantities (IOQ), selection of supply sources (SSS), selection of purchase methods (SPM), and determination of the stock quantities (DSQ).

Proper planning, monitoring and management of mentioned above elements and activities create necessary preconditions for efficient distribution system which in turn may result in securing of certain competitive advantage. In case the company has no necessary knowledge or experience in the organization and management of such element and distribution system as a whole, this task could be outsourced to the particular intermediaries (3PL companies).

5. Conclusions

Companies are constantly in search of means and tools that allow creating competitive advantage. Majority of scientists agree that development of competitive advantage is strategic decision allowing using company’s

capabilities better than competitors, while proper arrangement of distribution system is seen as exceptional tool to solve problems of company's competitiveness.

Companies that seek for efficient performance on national and international level should pay more attention to proper organization and management of their distribution systems. The most important thing is to define necessary components (elements and activities) and arrange them in way they assure efficiency of the system and competitive advantage of enterprise.

Results of the research revealed that Lithuanian business companies understand the extent of advantages that proper management of distribution system suggests and often apply means and tools that develop their distribution system. The most significant result of such changes is decrease of expenditures which in turn destine lower costs and particular competitive advantage.

Conducted research allowed to identify the most important elements of distribution system as well as performed calculations allowed to string them in to sequence according to their importance (identification of the needs of the customers, organization of purchase activities, identification of the order quantities, selection of supply sources, selection of purchase methods, and determination of the stock quantities).

Proper management of determined elements and activities create necessary preconditions for efficient distribution system. In case the company has no necessary knowledge or experience in the organization and management of its distribution system, this could be outsourced to the 3 PL intermediaries. Collaboration with these companies may result in certain competitive advantage.

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