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Influence of Supply Chain Management on the Growth of the Market Value of a Company

Abstract

The article looks into the influence of supply chain management on business processes and financial performance of a company in conditions of a saturated market and increasing competition. The necessity of creating competitive advantages via transformation of the supply chain management subsystem from a cost center of an organization into a profit center is substantiated. The potential groups of competitive advantages formed by the supply chain management subsystem are identified. Peculiarities of integrating the supply chain management strategy into the strategy of growth of the market value of a company are analyzed.

The authors suggest decomposition of Free Cash Flow to Firm as a method to identify the key drivers within the supply chain management subsystem that affect the market value of a company. The influence of the subsystem on the drivers is analyzed. On the basis of the analysis the indicator core of the supply chain management subsystem is proposed to develop the future framework for increasing the market value of a company via specific controlled actions on the elements of the indicator core.

Key Words

competitive strategy, cost centers, free cash flow to firm, market value of a firm, profit centers, supply chain management subsystem

JEL Classification: G32, L10, L21

Introduction

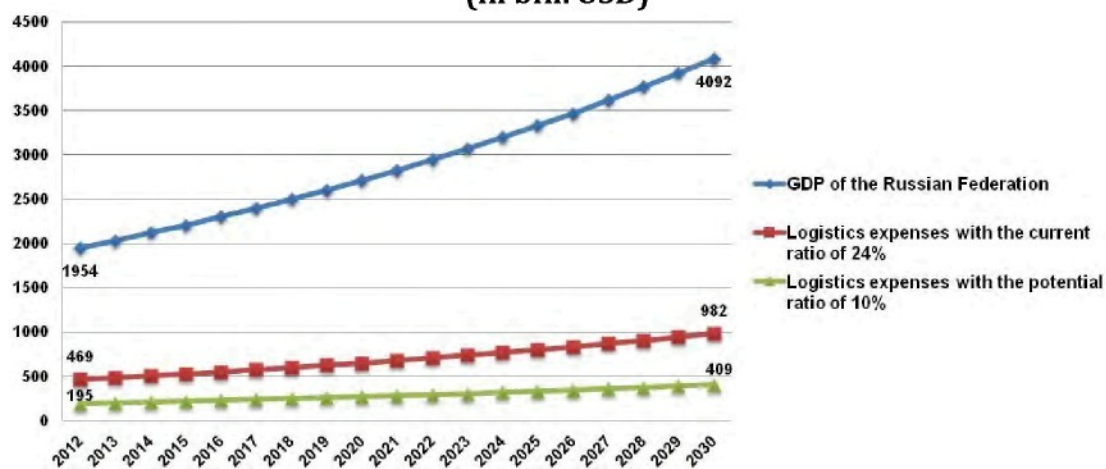
In conditions of globalization and growing competition a particular emphasis is put on efficient management of limited resources that are available to economic players. Saturation of consumer demand curbs opportunities for increasing the market value of a company exclusively by means of expanding the client base. In this situation companies face the necessity to create competitive advantages on the basis of the intensive approach, i.e. by using more efficiently material, financial, informational, intellectual and other resources. Achieving such advantages is possible through reengineering of business processes within continued adaptation of the strategy to the changing environment.

Improvement of the strategy of the market value growth of a company requires analyzing cost centers existing in a company. The analysis aims at:

- revealing wasting in the analyzed structure and defining measures to eliminate it;
- identifying opportunities for transformation of a functional subsystem from a cost center into a profit center.

Many organizations regard supply chain management (often referred to as “logistics”) as a supportive subsystem and one of the major cost centers within its business activities, while it has high potential as a profit center. Experts estimate that the share of logistic expenses in the GDP of the Russian Federation in 2012 amounted to 20 – 24 %, while this value is only 10 % in developed countries [1]. According to research of the Organization for Economic Cooperation and Development (OECD), by 2030 the world economy would grow 2 times up to USD 150 trln [2]. If the current distribution of countries within the world economy holds, then the GDP of the Russian Federation with the current share of 3 % will reach USD 4 trln. Therefore, by 2030 logistics expenses in the Russian Federation will be from USD 820 bln up to USD 980 bln. The potential for decreasing expenses in the logistic sphere by 2030 will be from USD 400 bln to USD 570 bln (see Fig. 1).

Fig. 1 Logistics expenses in the structure of GDP of the Russian Federation (in bln. USD)



Source: authors' calculations, [1], [2], [3], [4]

Therefore, it is topical to research into supply chain management (SCM) to find areas that enable the management of a company to increase its competitiveness. The paper looks into SCM as a factor of forming competitive advantages, analyzes influence of SCM on securing sustainable growth of the market value of a company, suggests key indicators for realizing this strategy, and also defines the future framework for improving the indicators.

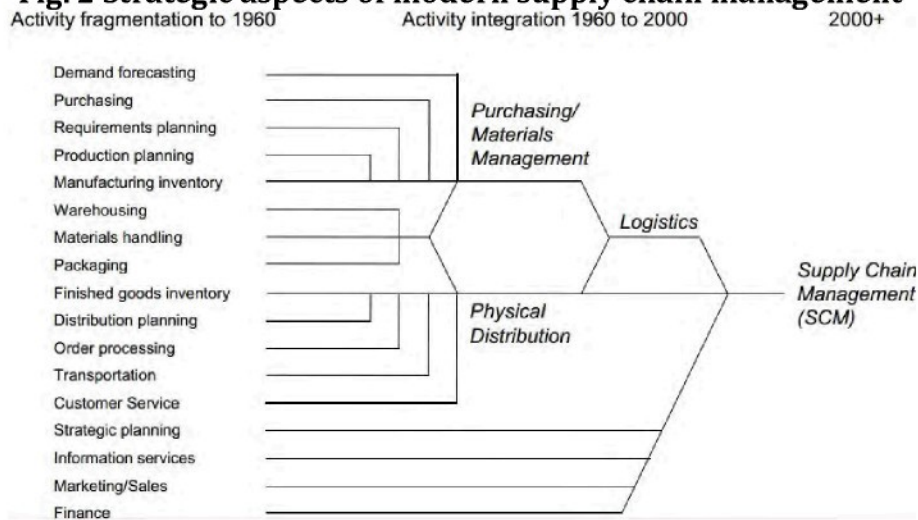
1. Supply Chain Management as a factor forming competitive advantages for an organization.

Increasing competition, being the result of consumer demand saturation, and growth of operational expenses lead to the necessity to seek for and create competitive

advantages. It is possible to distinguish 2 approaches to creating advantages – extensive and intensive. The extensive approach requires enhancing market positions of a company by means of broadening the product range, increasing production capacity and marketing budget, penetrating new geographic markets – i.e. it is linked to accelerating investment spending. The intensive approach to creating competitive advantages requires efficient utilization of all resources by eliminating wasting within business processes. In conditions of limited resources it is more rational to follow the intensive approach as it enables a company to identify and eliminate expenses related to functioning of an organization and to reallocate the “freed” resources to expanding the scale of activities. Therefore, application of this approach creates conditions for decreasing the impact of market volatility on a company via diversification of its business.

Traditionally SCM is regarded purely as physical distribution of goods and establishing sustainable relationships with suppliers and customers [5]. Within the structure of a company it is viewed as a cost center, i.e. aggregate of supporting business functions that are required for maintaining those processes that directly generate profits. Thus, constant cost reduction is chosen as the key performance indicator for this subsystem creating conditions for a conflict between cost cutting and simultaneous high level of services for internal (other subsystem of a company) and external clients. However, there is an inevitable constraint for the SCM subsystem – a threshold for the cost reduction potential.

Fig. 2 Strategic aspects of modern supply chain management



Source: [1]

On the other hand, Supply Chain Management is “the systematic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and the supply chain” in order to enhance the strategic position and performance of a company via creating competitive advantages for it and added value for partners [6]. The strategic role of SCM as a subsystem affecting multiple business processes is presented in Figure 2.

Therefore, SCM involves devising cross-functional decisions in both strategic and operational spheres of the enterprise management. Table 1 provides the range of decisions that SCM may include, but is not necessarily limited to.

Tab. 1 Strategic and operational decisions within supply chain management

Strategic decisions	Operational decisions
Production planning Requirements planning Establishing long-term partnerships with key accounts Allocating warehousing facilities (including openings and closures) Identifying necessities for investments into property, plant and equipment Taking part in designing strategies for implementing process and product innovations	Managing inventory levels Quality control Coordinating internal logistics processes Co-implementing process and product innovations Managing inbound/outbound orders Managing customer claims Maintaining and improving Key Performance Indicators (e.g., Time of Order Execution, Order Fulfillment Ratio, etc.)

Source: own

Modern approaches to creating competitive advantages require transformation of the SCM subsystem into a profit center. A necessary condition is developing such strategy for this subsystem which takes into account interdependencies with other functional subsystems of a company and creates conditions for sustainable synergetic cooperation [7]. Within improvement of the competitive strategy aimed at growth of the market value of a company it is necessary to develop new ways to add value for clients in order to expand and retain the client base and also to identify potential spheres of process optimization in the SCM subsystem. SCM has potential as a factor forming competitive advantages for a company as it links all subsystems of an enterprise through a set of material, informational and financial flows. There are three main groups of advantages created by the effective SCM:

- cost reduction;
- client base expansion;
- client base retention.

The SCM subsystem has significant potential for cost reduction by elimination of wasting in process of working capital management. For instance, analysis of resource consumption enables to decrease excessive reserve inventory. Application of optimization methods is an essential part of developing complex strategic decisions on necessity and allocation of specific elements of a distribution system. As a result, wasting in forms of underused warehouses and unreasonable investments into property, plant and equipment is eliminated.

By optimizing logistic nodes and flows a company may increase geographical market saturation and therefore maintain the growth of the client base. Apart from that, lower Time of Order Execution enables to cover more clients, while higher Order Fulfillment Ratio serves as one of the factors forming such intangible asset as “goodwill” of a company.

Activities of the SCM subsystem are aimed towards both attracting new clients and maintaining long-term partnership with current key accounts. Simplification of interactions, improvement of service quality with partial transaction of economies to key accounts enables to maintain the current client base. Therefore, increase in performance efficiency of the SCM subsystem enables to maintain the profit growth by reducing costs and expanding influence zones of a company. The above-mentioned competitive advantages in combination have positive effect on the market share and value of a company.

Effective integration of the SCM strategy into the strategy of growth of the market value of a company requires designing an indicator core. An indicator core is an aggregate of basis elements of a subsystem that would be controlled in order to maximize efficiency of realizing a particular strategy. For the strategy of growth of the market value it would require identification of financial and economic parameters and elements of the market value of a company that the SCM subsystem can influence. The next step is to break down the parameters into constituent manageable elements and select those that will form the indicator core for the SCM subsystem. The final result of integrating the SCM strategy is a set of parameters and necessary tools to control the indicator core.

2. Influence of the Supply Chain Management subsystem on Free Cash Flow to Firm as the main driver of the market value of a company.

In order to select the required parameters that will form the indicator core for SCM within increasing the market value of a company it is necessary to analyze composite elements of the market value. In conditions of growing competition and turbulence of the external environment it is rational to calculate the market value of a company on the basis of the formula of variable growth rates [8]:

$$\text{Value of the firm} = \sum_{t=1}^{t_1} \frac{FCFF_0 \cdot (1+g_1)^t}{(1+WACC)^t} + \frac{FCFF_0 \cdot (1+g_1)^{t_1} \cdot (1+g_2)}{WACC - g_2} \cdot \frac{1}{(1+WACC)^{t_1}}, \quad (1)$$

where $FCFF_0$ – Free Cash Flow to Firm in zero period, t_1 – number of periods with the constant growth rate g_1 of FCFF, $WACC$ – Weighted Average Cost of Capital, g_2 – the changed growth rate of FCFF.

As FCFF is a key driver of the market value of a company it is necessary to decompose it into the constituent elements and define those that the SCM subsystem can directly influence.

$$FCFF = NI - Capex + DA + Interest \cdot (1 - Tax\ rate) - \Delta WCR, \quad (2)$$

where NI – net income, $Capex$ – capital expenditures, DA – depreciation and amortization, ΔWCR – changes in working capital requirements.

Within the formula (2) there are 3 main indicators subject of influence of the SCM subsystem: net income, capital expenditures and changes in working capital requirements.

2.1 Analysis of influence of the SCM subsystem on net income of a company

The SCM subsystem influences directly revenue of a company because it links clients and a production subsystem through production planning. Attraction and retention of clients is carried out within the SCM subsystem via creating added value for them by: increasing quality of services; identifying unsatisfied demand and new requirements to existing products; informing the top management on potential for the market share increase.

$$\text{Net Income} = (\text{Revenue} - \text{COGS} - \text{SGA} - \text{DA} - \text{IntExp}) \cdot (1 - \text{Tax Rate}), \quad (3)$$

where *COGS* – cost of goods sold, *SGA* – sales, general and administrative costs, *DA* – depreciation and amortization, *IntExp* – interest expenses (income).

COGS and SGA are also influenced directly by the SCM subsystem as it is responsible for material resource purchasing, analyzing demand for human resources within the elements of the subsystem, utilization and servicing of the equipment and making decisions on establishing contacts with suppliers. The SCM subsystem indirectly affects depreciation and amortization as it has a significant influence on investments in property, plant and equipment (PPE). However, this parameter is dependant on accounting policies of a company. Interest expenses are also indirectly affected by the SCM subsystem depending on the required investments into assets that are used by it.

On a strategic level the SCM subsystem can have some impact on the corporate tax due to allocation of production and distribution facilities in different countries. However, asset allocation decision is made on the level of top management. Therefore, net income analysis demonstrates that the SCM subsystem has direct influence on revenue, COGS and SGA and indirect on depreciation, amortization and interest expenses.

2.2 Analysis of influence of the SCM subsystem on capital expenditures of a company

In order to analyze the influence of the SCM subsystem on capital expenditures of a company it is necessary to decompose the parameter “fixed assets” into main elements:

$$\text{Fixed Assets} = \text{PPE} + \text{IA} + \text{LTI}, \quad (4)$$

where *PPE* – property, plant and equipment, *IA* – intangible assets, *LTI* – long-term investments.

The SCM subsystem can significantly influence capital expenditures into PPE and intangible assets by providing information and optimizing solutions on allocation of product facilities, distributional centers, hubs, warehouses and establishing a material and information flow management system between the elements. Moreover, by receiving data on consumer demand it can affect investments into equipment and capacity of the elements.

2.3 Analysis of influence of the SCM subsystem on working capital of a company

Working capital requirements demonstrates changes in accounts receivable, inventory and accounts payable in comparison with the previous corresponding interval.

$$\Delta WCR = (A / R_0 - A / R_1) + (Inv_0 - Inv_1) - (A / P_0 - A / P_1), \quad (5)$$

where ΔWCR – changes in working capital requirements, A/R – accounts receivable, Inv – inventory, A/P – accounts payable.

The SCM subsystem may achieve high effectiveness in managing working capital due to decreasing and maintaining inventory on minimal levels by means of implementing innovative logistics techniques (e.g., Lean Logistics and Just-in-Time). Reduction of accounts payable can be carried out by revising the value of Days Sales Outstanding, while accounts payable may be increased by working with partners who allow for a high Days Payable Outstanding. Therefore, a company could finance its accounts payable later with earlier accounts receivable. The analysis of FCFF enables us to form the indicator core for the SCM subsystem. The indicator core would consist of the following elements: revenue, COGS, SGA, investments into PPE and intangible assets, and working capital.

Conclusion

The paper has identified the potential of the supply chain management subsystem as a factor forming competitive advantages within a saturated market and influencing the market value of a company. Free Cash Flow to the Firm has been selected as a key constituent for calculating the value of a company. FCFF has been decomposed into elements linked to functioning of the SCM subsystem. The key elements of the SCM subsystem that can be used for ensuring the growth of the market value of a company have been identified. On the basis of the identified elements an indicator core was proposed.

The formed indicator core can be used as a basis for realizing the strategy of growth the market value of a company. It provides the key elements that can be controlled to a certain extent by the supply chain management subsystem. Required control actions on each of the elements vary significantly, depending, first of all, on the uniqueness of a business model of a company and changes in the external environment. Although

controlling all the elements of the indicator core in practice presents as a challenging task, the core could be used in different conditions by partial management of those elements that would maximize the effect in existing circumstances. The next step within the research in this sphere is to provide tools for efficient management of the indicator core.

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