

INFLUENCE OF LOGISTICS ON FINANCIAL ACTIVITY OF AN ENTERPRISE

Summary: The article presents the influence of logistics processes on financial activity of an enterprise. It is described the interrelation of profit and loss account, items in the balance sheet and logistics variables. Selected financial and logistics ratios of a production company in the years 2001-2004 are analysed in order to show the significance of logistics for the company's finances.

Key terms: logistics, balance sheet, profit, financial ratios

Introduction

Poland's accession to the European Union created new opportunities for the country itself and enterprises operating there. International cooperation has increased, the scope of cooperative relations has broadened and there has been a rapid increase in material and information flows. At the same time logistics developed, both at the micro- and macroeconomic level. Many enterprises started to take notice of its influence on achieving strategic goals and financial performance. Logistics took a leading role in operational management enhancing it through the effective use of resources. Logistic functions and activities became the source of the company's potential and competitiveness. They started to be governed by the principle of economy aiming at minimizing the expenditures and maximizing the profit. As a result, logistics started to affect financial objectives of enterprises and future financial planning. The consequences of logistic decisions to a large degree started to affect both the balance sheet of an enterprise and its profit and loss account. It is so, because efficient logistic management boosts cash flow and reduces the needs concerning working capital. "Operating within a chain of values which comprises such links as research and development, supplies, components production, product manufacturing, sales, distribution and service, the company has to take strategic decisions concerning the localization of those links. (...) Because this affects the cost structure of the company in terms of labour force costs in a given area, costs of transport and logistics."¹

Logistics vs. balance sheet

Logistic operation of an enterprise, with regard to its influence on the finances, can be best assessed while looking at the records in the closing balance sheet and profit and loss account. Among the manifold information comprised in those statements, for logistics of crucial importance is that concerning the financial condition and financial results which depend on the processes of material flow and flow of relevant information. The influence of logistics on particular items in the balance sheet is presented below (pic.1).

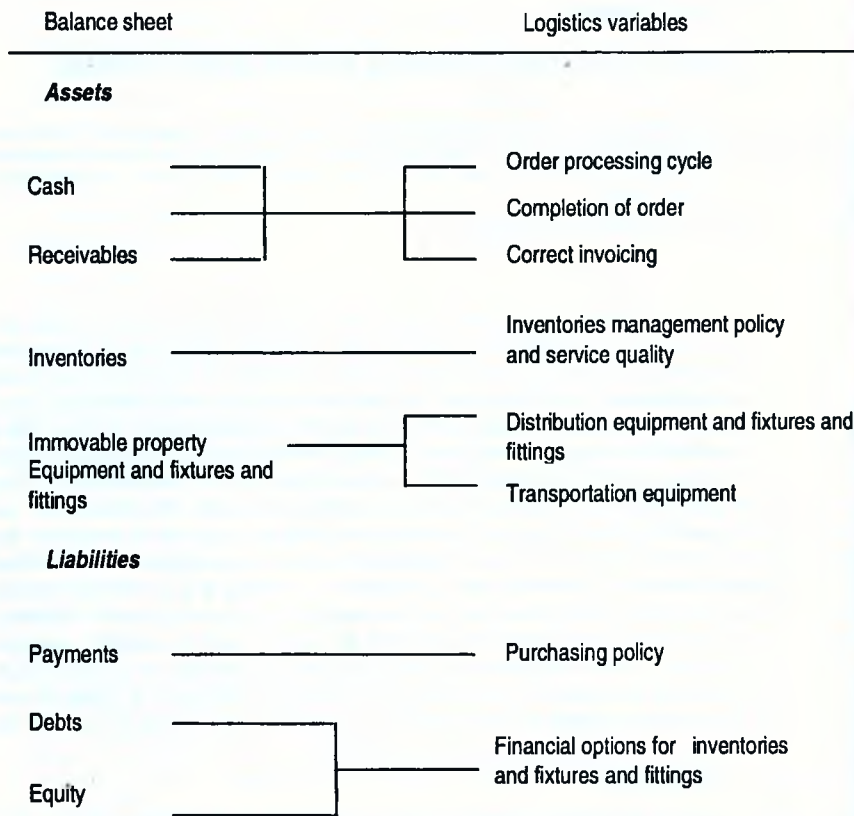
It indicates that logistics variables affect the final form of the balance sheet of an enterprise.

Assets management process in an enterprise is related to its ability to control the flow of materials, information and funds.

Material flows are related to the circulation of raw materials, materials necessary for production, work in process, final products and secondary use products. Material flow is strictly related to the flow

¹ Brzeziński S., Międzynarodowe strategie przedsiębiorstw a przewaga konkurencyjna, in: "Polska w Unii Europejskiej", J. Szopa, P. Pachura, WWZPCZ, Częstochowa 2004, p. 67

of information concerning orders and purchases. And both material flows and information flows are strictly connected with the flow of funds.



Picture 1. Influence of logistics on items in the balance sheet

Source: Christopher M., *Strategia zarządzania dystrybucją*, Placet, Warszawa 1999, p. 28

Assets reflect fixed and current assets necessary in business activity. They are used mostly to earn a profit, which is the primary goal for every enterprise. The share of particular asset components in generating profits is not the same. "It is current assets (liquid) which contribute directly to generating profit due to constant changes and transfers resulting in surplus resources (profits). Fixed assets are also important, but they play an indirect role in this process."¹ Thus an enterprise should aim at possessing the greatest possible amount of current assets according to its needs while there should be only as much fixed assets as it is necessary for operating the business.

¹ Bednarski L., Borowiecki R., Duraj J., Kurtys E., Waśniewski T., Wersty B., *Analiza ekonomiczna przedsiębiorstwa*, Wyd. AE im. Oskara Langego, Wrocław 1998, p. 89

Efficiency in assets management, reflected in the annual turnover, constitutes the main area of interest for logistics. The size, structure and utilization of assets determine financial prosperity of a company. The proportion of particular components should reflect the actual needs of the enterprise. Assets being too big, "the capital is unnecessarily frozen and it affects the profit it could bring if in movement (...). On the other hand, when the assets are too low, the enterprise cannot achieve the desired sales, which negatively affects the company's financial performance."¹

For logistics the most important component of current assets is inventory. This includes raw materials, materials for production, work in process, final products and goods. They are kept in the company for future use. Their production, inventory size and dynamics depend on supply cycles and the size and structure of production. The size of inventory is also influenced by its efficient control and management. Appropriate service policy and market distribution are also very important.

The basic aim of inventory management is to ensure continuous production while incurring lowest possible storage costs. Inventory considerably affects financial liquidity of an enterprise. Liquidity means here how quick and easy an asset component can be changed into cash. However, considering liquidity one cannot allow for an asset component loss in value. Because everything can be sold easily if the price is reduced. Thus, high liquidity assets are assets which can be easily changed into cash without losing their value. Inventory belongs to the type of current assets whose liquidity is low, which is indicated by their position in the balance sheet. And they cannot be easily sold without considerable price reductions.

Another asset component of low liquidity is receivables. In the current economic situation their liquidity is even lower than that of inventory, when the customers do not meet their financial obligations. The greater the liquidity, the lower the risk of financial problems related to making current payments and purchasing necessary assets. On the other hand, however, liquid assets bring less profit. So inventory is one of the most profitable asset components while cash deposits, when only saved in a bank account, do not bring any profit whatsoever.

Entrepreneurs often do not realize to what extent logistics variables can affect financial resources and receivables. The shorter the delivery period, i.e. the time that passes from order placement to product delivery, the sooner the invoice can be issued. But if the invoice is incorrect, then the payment is postponed until the invoice is corrected.

The other side of a balance sheet includes liabilities. These indicate the sources of finances for the enterprise. The policy of purchasing raw materials, materials for production and semi-finished products is a logistics variable that plays an important role here. Traditional methods of regulating stocks, based on economic batch delivery can lead to excess inventory not reflecting the actual production or distribution needs, especially if demand and supply fluctuate.

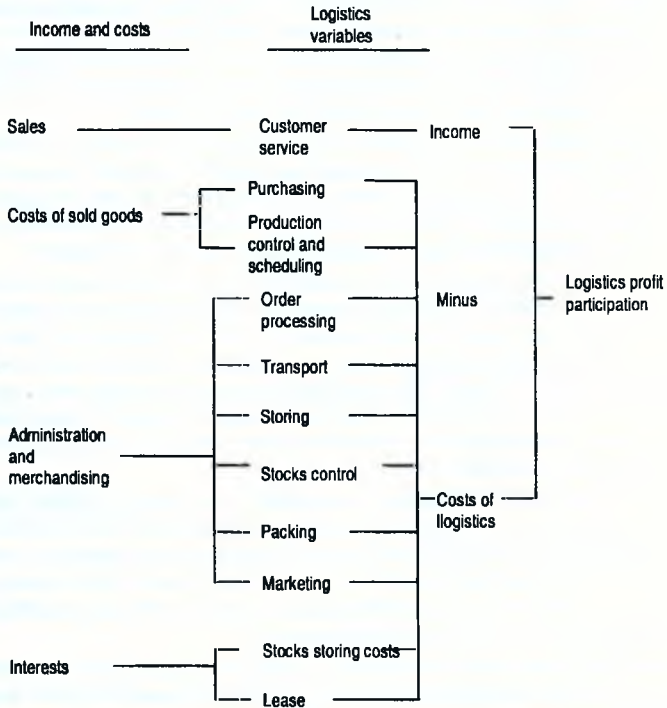
In the present market situation meeting more complex logistic requirements is possible due to modern techniques, such as MPR (material requirements planning) or DRP (distribution requirements planning). Reducing the number and time of orders can help meet current liabilities, and greater integration of purchases and operational management can bring additional profit.

Logistics vs. profit

Logistics also plays a key role in creating income and costs of an enterprise which are reflected in profit and loss account.

The influence of logistics variables on the company's profitability is presented below.

¹ Twaróg J., Mierniki i wskaźniki logistyczne, Biblioteka Logistyka, Poznań 2003, p. 180



Picture 2: Logistics vs. profit

Source: Christopher M., *Strategia zarządzania dystrybucją*, Placet, Warszawa 1999, p. 25

The basic challenge for logistics is to find best possible solution to keep balance between reducing logistic costs and preserving high quality customer service. Costs of logistic processes including placing orders, transportation, storing, packaging and service should be considered and minimized globally. The result of this is positive financial result, which as the basic component of financial surplus, constitutes the primary source of financing the company's development.

Coordination of logistic operation helps to integrate the functions of supply, production and distribution in a company, which as a result leads to bigger savings in purchasing and production processes. High quality customer service affects in turn the participation in the market, and greater participation results in more effective sales.

Logistics vs. financial ratios of an enterprise

Table 1. presents the influence of logistic operation on selected financial ratios in a production company in the years 2001-2004.

Table 1. Financial and logistic ratios assessing a company's performance resulting from balance sheet and profit and loss account

| Financial ratios | Year | | | |
|---|--------|--------|--------|-------|
| | 2001 | 2002 | 2003 | 2004 |
| Assets, cost and income structure | | | | |
| Fixed assets structure % | 57,8 | 65,1 | 57,7 | 43,2 |
| Current assets structure % | 42,2 | 34,9 | 42,3 | 55,8 |
| Assets structure ratio % | 137,52 | 186,49 | 136,28 | 79,45 |
| Operating expenses structure % | 95,68 | 95,88 | 93,91 | 95,51 |
| Profitability ratios | | | | |
| ROE (return on equity) % | 4,17 | 4,05 | 4,63 | 9,23 |
| Return on total equity % | 6,06 | 5,82 | 10,56 | 6,58 |
| ROA (return on assets) % | 2,01 | 1,32 | 1,62 | 3,27 |
| Liquidity ratios | | | | |
| Liquidity level III | 1,24 | 0,66 | 1,68 | 2,28 |
| Liquidity level II | 0,83 | 0,43 | 1,12 | 1,27 |
| Liquidity level I | 0,003 | 0,001 | 0,05 | 0,2 |
| Inventory ratios | | | | |
| Proportion of inventory in total current assets % | 13,8 | 12,3 | 14,0 | 17,4 |
| Current assets flow ratio | 3,51 | 4,53 | 4,03 | 2,85 |
| Inventory flow ratio | 11,55 | 14,47 | 13,80 | 10,66 |
| Inventory turnover ratio in days | 31,16 | 24,88 | 26,08 | 33,78 |

Source: Prepared by the author on the basis of the company's figures and Twaróg J., *Mierniki i wskaźniki logistyczne*, Biblioteka Logistyka, Poznań 2003, p. 182

Analysing the above figures it can be noticed that in the years under examination the company experienced growth due to an increase in value of its fixed and current assets. Between 2001 and 2003 the company invested in a state-of-the-art machine park, which yielded fruit already in 2004, as current assets increased. A high proportion of fixed assets reflects the specificity of the company's activity. The share of such assets in production can amount to 90% of assets structure ratio. A fall in the value of fixed assets in 2001 was caused by depreciation. On the one hand, a high proportion of fixed assets in the assets structure increases the risk due to low liquidity, on the other hand, however, it proves the credibility of the company to the contractors. Assets structure ratio points at the company's flexibility to adapt to market changes. If it exceeds 100% it means low liquidity, high fixed costs and low flexibility, which in the event of reduced demand for the goods produced, can lead to lower profitability. The situation improved only in 2004, when the ratio dropped below 100%.

The analysis of operating costs structure on the basis of profit and loss account leads to the conclusion that in the years 2001/2002 the company witnessed a slight increase in operating costs share in income from sales, which resulted in reduced profits.

ROE determines the profitability of investing owner's equity. In the company under examination this profitability increased, which strengthened its financial standing. The same applies to ROA. Its

increase means that assets generate more profit. This ratio reflects the earning potential of assets measured with financial performance.

The analysis of the company's liquidity shows proper payment capacity of the company. Only in 2002 current assets did not fully cover current liabilities, and the company was forced to take a short-term credit.

Current assets flow ratio reflects the rate of flow of liquid assets and indicates how many times per year the assets are renewed through the sales of final products. The higher the ratio, the more efficient the activity. From the perspective of logistics, inventory is the asset component whose circulation is especially important for the company. An increase in their turnover in 2002 shows that the flow of stocks was faster and their storing time decreased. The company could then receive income from sales with less assets involved. Inventory turnover ratio in days defines the length of one cycle of inventory turnover. In our company financial resources involved here are in turnover for 30 days. This figure is rather low, which proves the efficient use of stocks in the company.

Conclusions

Logistics management affects almost every aspect of profits or losses in an enterprise and its financial performance. Logistics determines customer service quality, material flow time, cost of supply and sale. Thus, efficient logistics management helps to become more competitive and consequently increases company's profits. In view of this logistics should no longer be identified as "a cost centre" because it has been proved in this article that it has its share in the profits of an enterprise, which largely depends on the quality of customer service.

Literature:

1. Bednarski L., Borowiecki R., Duraj J., Kurtyś E., Waśniewski T., Wersty B., *Analiza ekonomiczna przedsiębiorstwa*, Wyd. AE im. Oskara Langego, Wrocław 1998
2. Brzeziński S., *Międzynarodowe strategie przedsiębiorstw a przewaga konkurencyjna*. In: "Polska w Unii Europejskiej", J. Szopa, P. Pachua, WWZPCZ, Częstochowa 2004
3. Christopher M., *Strategia zarządzania dystrybucją*, Płacal, Warszawa 1998
4. Twaróg J., *Mierniki i wskaźniki logistyczne*, Biblioteka Logistyka, Poznań 2003

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LOGISTICS IT SYSTEMS APPLICATION IN THE CUSTOMER SERVICE OF POWER ENERGY DISTRIBUTION

Abstract: The paper describes application possibility of IT systems in the customer service in distribution. The paper focuses on the power energy distribution and application of suitable IT systems in this area. Author presents new technologies used to satisfy customers in the service area in power energy distribution.

Keyword: IT systems, customer service, energy distribution

Introduction

Logistics in the power energy sector contains distribution and physical transmission of the power energy. Power energy purchasing can be defined as a assurance of the suitable energy amount to satisfy the demand of all customers while considering foreseen energy loses. The power energy sale can be described as a financial accounting of distribution companies and their customers.¹

¹ Szkutnik J., Logistyka dystrybucji energii elektrycznej w Polsce; Gospodarka Materialowa i Logistyka 2001, Nr 4