

Influence of logistics system optimization on a company value

Eva Adámiková¹, Tatiana Čorejová¹, Viliam Mojský¹, Mykhailo Dobroselskyi¹

¹Department of communications, Faculty of Operations and Economics of Transport and Communications, University of Žilina, Univerzitná 1, 010 26 Žilina, Slovakia

Abstract The value of a company is influenced by many factors. It depends on how we evaluate the methods we use and what data we have for the calculation. It is also important for what purpose we will calculate the company value. However, the company's management decisions, their strategy and overall direction have a significant impact on the value of the business. In the article we will deal with the impact on the value of a business's optimization of the company's transport network. Also, whether optimization affects more revenue method or equity method.

Keywords company value, valuation method, business assets, costs and revenues, optimization

JEL M41, G32

1. Introduction

The development and economic growth have an overall impact on constantly new requirements in relation to information and knowledge. Companies need to work with new technological advances to stay on the market to keep up with competition and meet customer expectations. "The need to have available and process an ever-increasing amount of information results in a consequent increase in demand for means and devices for transmission, i. E. for linking and exchanging data not only inside economic entities but also to their surroundings." [1]

The essence of information and communication technologies, electronic communications and telecommunications is to ensure not only the transmission of messages and information but also to ensure the flow of goods, services, persons in space.

"Network industries play a crucial role in today's life because of the interdependence and dependence of other industries on their activities. They occur in many forms and include not only material networks, e.g. transport, logistics, communication and energy, but also abstract economic, financial, social and knowledge networks." [2]

Nowadays, information technologies are a necessity for most companies and other institutions. They bring many effects to businesses that improve their production processes. They also bring benefits in logistics, control, administration. In this paper, we will consider the impact of information technology and transport, logistics, communications networks and the optimization of the networks themselves on the value of company.

2. Established methodological principles of company valuation

The value of a company in terms of professional literature is differently defined. According to the Commercial Code, it is "a set of both tangible and personal and intangible components of business. The company includes things, rights and other property values that belong to the entrepreneur and serve to operate the business, or because of their nature they serve this purpose." [3]

Therefore, a company is not only its property and property rights, but also personal components of business, to which employees, their qualifications and experience, and intangible components belong. [6]

For many legal acts, the book value is insufficient. An appraisal of the market value by expert activity is needed. For expert practice, the general value of a company, or part of an enterprise is defined in Decree No. 492/2004 of the Collection of Laws on the Determination of General Value of Assets as the resulting objectified value of assets, which is an expert estimate of the most likely price of the asset being valued at the valuation date at that location and time that it should usually reach on the market, including value added tax. [5]

Valuation methods are based on four main principles.

Asset principle – the value of a company is calculated from the value of the individual components of the company's assets from which the value of the obligation is deducted. This principle is mainly used for property and liquidation method.

Revenue principle – in the case of revenue principle, the value of company is determined on the basis of the deductible resources that the company will create in the future. In the decree related to the valuation methods, the revenue principle is used in the business method.

Combined principle – principle combines asset and revenue principles. In the decree, a combined method is based on this principle.

Market principle – its basis is to derive the value of a company from the value of a similar company on the market. In our legislation on this principle works comparison method. In practice this method is minimally used. [4,5]

In practice, the most widely used valuation methods are based on property and yield principles. Under the property principle, the value of an enterprise is calculated from the value of the individual components of the enterprise's assets, from which the value of the liabilities is deducted. In Decree no. 492/2004 of the Collection of Laws on the Determination of the General Value of Assets, the property and liquidation method corresponds to this principle.

This method takes into account the static view of the enterprise as a whole on a specific date. [7] To this date, the asset and liability report expert is submitted to the sponsor in detail by component, is presented to the sponsor in detail by component, i.e. detailed by asset cards, stock records, cash register and bank account details, detailed records of each claim and liability, along with relevant contracts, repayment schedules, credit agreements, and the like, depending on the company's specific structure. It requires the cooperation of experts in technical and economic expertise, the precise organization of works and their mutual continuity, provision of documents, inspection of property.

The yield principle of valuation works with data for a longer period of time, as it is necessary to analyze the past development of the company. [9] In the decree, the yield principle is used in the business method. The analysis of past developments will point to the feasibility of the business plan and the financial plan on which it is based.

Compared to the equity method, it is less laborious because it does not require such an expert team as an equity method. By this method the sponsor of an expert obtains information about the value of the enterprise as a whole, but does not know the value of individual components of assets and liabilities. This is an asset method advantage. Each of the methods based on the property or yield principle has its positives and negatives. [8] This is based on the expert's experience and also on the structure of the submitted documents and information, so that the methods are applied correctly.

In the case of a company described in more detail in the next chapter, it is possible to apply the property and business method. We will not compare the specific purpose of the assessment in the given case. However, we will compare the impact on the overall value of the business if the current logistics network is optimized and which method will affect it more.

3. Network optimization and cost minimization

The evaluated company is based in the Slovak Republic and is a parent company having a subsidiary in Ukraine. In addition to selling car diagnostics equipment, the company also sells spare parts and tools to repair them. The structure of the company is as follows:

Table 1. Assets statement

Year	2018
Assets	677 476
NON-CURRENT ASSETS	543 378
Long-term tangible property	543 378
CURRENT ASSETS	130 811
Inventory	4 431
Short-term receivables	117 862
Financial assets	8 518
COSTS OF FUTURE PERIODS	3 287

Source: [10]

It can be seen from the financial statements that non-current assets are represented in a higher proportion than current assets. All non-current assets consist of real estate and buildings related to warehouse space and building ownership. The current assets are mainly represented by short-term receivables.

At the end of the year, inventories are reported, which are related to their business activities. Financial assets are money in the cash register and bank accounts. Foreign sources are short-term and long-term liabilities and short-term reserves. As at 31.12.2018 no loan is reported. The equity of the company is significantly lower in relation to the liabilities, resulting in a high indebtedness of the company.

Table 2. Liabilities statement

Year	2018
Liabilities and equity	677 476
Equity	44 797
Liabilities	632 679
Long-term liabilities	491 211
Short-term liabilities	139 435
Short-term reserves	2 033

Source: [10]

Most of the equipment is designed for a foreign consumer. The company does not have its own fleet. The exchange of products between the warehouse, branches and end users is done by an outsourcing logistics company abroad.

The company's existing logistics network consists of one warehouse (in Kharkov) and five branches (in Odessa, Lviv, Dnipro and two in Kiev). The goods are transported from the main warehouse to one branch approximately every third day of the current month. The transported 1 pallet has the size of 1200 x 800 x 2000 mm (9 pcs on average per month). The total monthly transport costs of the outsourcing logistics company are shown in Table 3.

Table 3. Price list of transportation services

City	Price for 1 pallet (EUR)	Price per month (1 pallet 9 times per month to 5 affiliate = 45 pallets) (EUR)
Kharkov, UA	Main warehouse	Main warehouse
Dnipro, UA	30	270
Odessa, UA	35	315
Kiev1, UA	35	315
Kiev2, UA	35	315
Lvov, UA	47	420
Total EUR	182	1635

Source: [autor]

The company wants to minimize shipping costs. The company has a study where two possible solutions were analyzed. The first solution is to optimize the network by changing the location of the main warehouse. The second is to ensure transport by your own means of transport and not to use an external company.

Changing the main warehouse from Kharkov to Kiev has reduced shipping costs. Transport costs were also calculated if the car was transported by own vehicle. Table 4

The analysis showed that transport by own vehicle is worthwhile only when delivering more than 185 pallets per month. This is unprofitable for the company, as the company does not deliver to the warehouse to such an extent. Also, according to the financial statements, the company has a high level of indebtedness, which implies that if they were to acquire a means of transport, they would probably realize it by leasing. They do not have the funds to buy movable property.

Table 4. Price list of transportation services

in EUR per month	5 pallets for 1 time	5 pallets for 1 time
	Main warehouse in Kharkov	Main warehouse in Kiev
Kharkov, UA	0	315
Dnipro, UA	270	315
Odessa, UA	315	315
Kiev1, UA	315	0
Kiev2, UA	315	0
Lvov, UA	420	315
Total EUR	1 635	1 260
Road 2510 km		
	Own car up to 10 pallets	Own car from 10 to 30 pallets
Kharkov, UA		
Dnipro, UA		
Odessa, UA		
Kiev1, UA		
Kiev2, UA		
Lvov, UA	337	583
Total EUR	3035	5250

Source: [autor]

4. Impact of optimization results on company value

4.1. Changing the location of the main warehouse

In the first case, when transporting through a logistics company abroad and changing the location of the main warehouse, this will mainly be shown by the value of the business determined by the business method. By relocating the main warehouse to the city of Kiev the cost will be cut by 375 Euros per month, according to the study. This represents a sum of 4500 Euros per year. This cost savings will be reflected in the company's financial plan for at least 5 years in advance, which can be expected to increase the company's profit. At the same time, the company is supposed to work constantly, so the permanent value will be calculated in accordance with the prescribed methodology in Decree no. 492/2004 as amended and this value has a significant impact on the overall value of the company.

If the equity method is calculated in this case, the impact could be on the receivables and liabilities between the parent company and the subsidiary abroad if they were not paid by 31.12.2018. It would also have an impact on stock levels, given the amount of goods shipped and the stock balance remaining at the parent company. Short-term receivables

represent a lower percentage of total assets when compared to the proportion of short-term liabilities to total liabilities that are deducted in the calculation. Specifically, short-term receivables account for 17.4% of total assets and 22% for short-term liabilities. When the amount of liabilities is higher than the amount of claims, the value of the company is reduced.

4.2. Purchasing an own vehicle

In the 2nd case, when purchasing a vehicle, if the value of the company is calculated using the yield method, it would affect the total value of the company, for example, if the company procures its own car by leasing or credit. If a company enters into a credit agreement, then it will increase its liabilities. However, liabilities are already very high in relation to assets now. In this case, the interest expense would also affect the economic result. The economic downturn would also have a negative impact on the company's plan from a cost perspective. If the company also achieved higher sales by trying to increase sales, it would be balanced. In the case of leasing, it is necessary to consider what form of leasing is appropriate and which company would prefer. There are two basic forms of leasing, namely finance lease and operating lease. The case of financial leasing is good for companies if the company wants to surrender the right. Thus, after leasing, the property becomes the property of the company. Thus, during the lease term, the owner who pays the lease is not the owner immediately, but the company that is the lessor. Getting a car is in many cases a large and demanding financial item, and few can afford it. Monthly repayment is a better option for many. Most companies require a first down payment in the form of a down payment, which the client can choose in percentage of the total price. Total lease payments cover the cost of the asset and the redemption price is usually lower than the asset's market price. The Company may assign the asset to the asset and depreciate it. It also affects the property and business method. The property method also affects the value of assets, the value of liabilities and the value of business through costs.

The second form of leasing, operational leasing, is less used by private individuals, rather by firms. The advantage of this type of leasing is that the leasing company cares for maintenance such as servicing, insurance, wear and tear, and these costs do not fall on the person repaying the monthly instalments. A down payment is not required in this case. The disadvantage is that the property after repayment remains the leasing company.

The amount of the monthly cost of the company depends on the type of lease. However, it is necessary to consider whether the company wants to become the owner of the means of transport. If the company chose a finance lease, the company could register the means of transport in the assets, but at the same time in liabilities, which are gradually reduced by monthly instalments. In this case, however, it will affect the total value of the economic result for all

leasing costs. In the case of a second form of leasing, the company would report a rental cost monthly, which is lower than in the first case. However, the company will not own the means of transport. At the same time, however, it will not have increased costs for repairs, maintenance, insurance, for example

5. Conclusions

From the expert point of view, it is possible to apply the property method as well as the yield method. If we theoretically think about maximizing the value of a business in the first case, it is preferable to apply the business method. In particular, the method results in a management result that is reflected in the plan in the future and also affects the value of sustainability. The structure of the company's assets is reflected in the level of capitalization together with the tax rate and the level of risk. However, the essence of value is the result of the management and the related company plan. In the first case, for an asset value, the carrying amount of the asset is greater than the value of the liabilities. But it is an accounting perspective. From an expert point of view, it is necessary to assess the fair value of the asset, its wear and tear and the status at the valuation date. The value of receivables may be significantly lower if they are overdue, if customers are in bankruptcy or liquidation, or do not communicate for a long time. Also, for example, inventory levels may be lower if stocks are depreciated or unusable, and the like. It is necessary to examine in detail the value of the property not only through the documents, but also to carry out an inspection in what state the property is.

In the latter case, the second form of leasing is most appropriate for the company in such a situation, with such high liabilities. The company is in a growth phase and does not need to procure long-term means of transport for such production. When the company stabilizes and increases its sales to the maximum, it is worth considering whether to procure its means of transport. In this situation, two options need to be considered, namely whether there are higher costs for the external transport company or for the rental of the means of transport. However, this depends on which type of resource the company decides. The above mentioned options have a particular impact on the business method with the yield principle.

ACKNOWLEDGEMENTS

This article was supported by Project VEGA 1/0152/18 Obchodné modely a platformy v digitálnom prostredí

REFERENCES

- [1] Čorejová T., Strenitzerová M., Madleňáková L., Majerčáková M., Jankalová M. *Ekonomika sietí*, EDIS – vydavateľstvo ŽU 2010, ISBN 978-80-554-0155-3
- [2] Štofková J., Štofková K., Striček I., Specific aspects of quality management in network businesses, *Forecasting work* 6, 2014, č. 1 strana 41-53
- [3] Zákon č. 513/1991 Zb. *Obchodný zákonník v znení neskorších predpisov* Available online: <https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/1991/513/20150728.html>
- [4] Zákon č. 382/2004 Z. z. o znalcoch, tlmočníkoch a prekladateľoch v znení neskorších predpisov, Available online: <https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2004/382/>
- [5] Vyhláška Ministerstva spravodlivosti Slovenskej republiky č. 492/2004 Z. z. o stanovení všeobecnej hodnoty majetku v znení neskorších predpisov Available online: <https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2004/492>
- [6] Sedláková, I. *Žilina 2012, The Intersection of Expert Fields in Application of Enterprise Asset Valuation Principle, Proceedings of expert appraisals in the process of expert appraisal* ISBN 978-80-554-0501-8, Pages 35-43
- [7] Kislingerova, E., 2001 *Company valuation*, C.H.Beck Praha ISBN 80-7179-529-1
- [8] Majduchová, H., Rybárová, D., Grančičová, K., Križan, M., 2018, *Business Economy*, Wolters Kluwer SR s.r.o., ISBN 978-80-8168-806-5
- [9] Mařík, M., Maříková, P., Buus, T., Rýdlová, B., 2018, *Business valuation methods for advanced*, Ekopress, s.r.o. ISBN 978-80-87865-42-2
- [10] Register účtovných závierok Slovenskej republiky <http://www.registeruz.sk/>