

The Storage Area Market in the Particular Territory

Tržište skladišnog prostora na određenom teritoriju

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Summary

Each enterprise contemplates the ways of saving. The warehouse is one of the tools that helps in optimizing company costs and that also forms an integral part of the transformation process at the same time. It allows one to bridge the mismatch between the transfer of goods and materials between a producer and a consumer. Selecting the correct type of warehouse can affect not only the cost items, but it can also affect the delivery time of the required goods or materials which the end customer's satisfaction depends upon. What is equally important is the role of a warehouse area location as it can affect the time required for a consignment delivery, which is also in conjunction with the right connections to the transport infrastructure. As certain analyses show, there are enough of the different types of storage facilities in various locations in Slovakia. Just such a tactical and strategic decision must take into account not only the location, the infrastructure connection or the provided services, but it must also include the financial aspects in order to achieve cost savings and the optimization of the costs. The aim of this paper is to define the current situation in the market with storage facilities in Slovakia.

KEY WORDS

logistics
warehousing logistics
warehouse areas
storage facilities
warehouse area development trends

Sažetak

Svako poduzeće razmišlja kako uštediti. Skladište je jedno od alata koje pomaže u optimizaciji troškova tvrtke i također istovremeno čini integralni dio procesa transformacije. Omogućava premostiti nesukladnost između prijevoza roba i materijala od proizvođača do potrošača. Odabirom odgovarajućeg tipa skladišta može se utjecati ne samo na troškove, već i na vrijeme isporuke traženih roba ili materijala o čemu ovisi zadovoljstvo krajnjeg korisnika. Ono što je jednako značajno jest uloga lokacije skladišnog prostora jer ona može utjecati na vrijeme potrebno za isporuku pošiljke, što je također u vezi s odgovarajućim vezama do transportne infrastrukture. Prema nekim analizama, postoji dovoljan broj različitih vrsta skladišnih prostora u raznim dijelovima Slovačke. Taktička i strateška odluka mora uzeti u obzir ne samo lokaciju, povezanost infrastrukture ili pružene usluge, već također mora uzeti u obzir financijske aspekte kako bi se uštedilo na troškovima i troškovi optimizirali. Cilj ovog rada je definirati sadašnju situaciju na tržištu skladišnih prostora u Slovačkoj.

KLJUČNE RIJEČI

logistika
skladišna logistika
skladišna područja
skladišni prostori
trendovi razvoja skladišnih područja

INTRODUCTION

Logistics is a relatively young scientific discipline which forms the parts of the daily operations of a company. It is an area that not only has an impact not on the quantitative indicators such as cost items, but the optimally adjusted logistic operations are also a tool for a quality meeting of a customer's needs as well [1], [2]. One of the ways of optimizing the company's operations is to use the services of an external storage location, and

thereby to minimize the funds necessary to build and operate a warehouse [3], [4].

The first developmental period of logistics is associated with the Second World War. Since that time, various authors and institutions have been dealing with the topic of logistics. Each of them understands this topic from their point of view; so there are many definitions on it. According to one of the

first definitions of logistics from 1961, stated by the American Council of Logistics Management, logistics is the process of planning, implementing and controlling the efficient and cost successful stream of the storage of raw materials, the inventory in production, the finished goods and the related information from the point of origin to the point of consumption [5].

The following table (table 1) includes some more definitions of logistics.

Table 1 The Selected Definitions of Logistics

Author	Year	The definition of logistics
PFOHL	1972	An aggregate of all the operations that form, manage or control the movement and storage processes in the network. Through their mutual aligning the most effective bridging of the space and time is to be achieved.
SCHULTE	1994	Integrated, market-oriented planning, creation, implementation and controlling flows of materials, goods, information from suppliers to companies, from a company to clients at optimal costs.
KOTLER	1998	It includes planning, implementation and management of physical flows of materials and finished products from the time of their creation to the point where a consumer use them to meet his/her needs.

Source: [6] - [8]

The evidence that logistics does not only have one precise definition is the following institutional characteristics of logistics in different countries. The European Committee for Standardization and the European Logistics Association define logistics as the planning, execution and control of the movement and placement of people and/or goods and of the supporting activities related to such movement and placement within a system organized to achieve specific objectives [9]. The Institute of Logistics and Transport in the UK understands logistics as a time-bound allocation of resources or the strategic management of a fully integrated logistics chain known as the supply chain [10]. The German Federal Committee for Logistics defines logistics as the overall planning, management and implementation of all information and goods flows of the enterprises and value-chains with a substantial impact on business success. The Swiss International Institute for Logistics Management defines logistics as the operational and strategic tool significant for private or public companies leading to a systematic compliance improvement with the wishes of the customers, improving the production flexibility, creating a coherent organization with the partners, the service providers, the cooperating institutions, the distributors and customers [11], [12].

The most apt description of the term logistics is by [13]. According to the authors, logistics is the management of material, information and financial flows with respect to the timely fulfilment of the final customer's requirements and with regard to the necessary creation of profit throughout the whole material flow. When meeting the needs of the final customer, it already assists in the development of the product, its production, and, last but not least, in its liquidation.

While in the 1960s, logistics was oriented largely on the efficiency of processes through the total cost, the onset of globalization and the rapid development of information and communication technologies have led to the growth of

market needs, the development of opportunities, and thus to those fundamental changes in the understanding of logistics [14], [15]. Currently logistics should bring total optimization of the integrated logistics systems.

WAREHOUSING LOGISTICS

Warehousing is one of the most traditional aspects of logistics adds that warehousing is part of the corporate supply system that stores products (raw materials, components, unfinished and finished goods) between the point of origin and the point of consumption; it provides the management with information on the status, the conditions and arrangement of the items stored. It is also a connecting link between the producer and the end customer with the intention to bridge the period of time between these entities. In an attempt to achieve savings in manufacturing, firms keep inventories in warehouses defines warehouse as a compound, a link of the logistics chain, or a space reserved for storage equipped with storage technology and a device that provides the management with information on the conditions and placement of stored products [16], [17].

One of the authors distinguishes the warehouses according to their position held in the production process which are the [18]:

- *Receiving*: inventory of input materials,
- *Interim Production*: serving as a stock-up between the various stages of the production process,
- *Sales*: serving to cover the period of time between production and sales warehouses.
- Apart from this distinction, there is a division of warehouses based on the mode of their operation [18]:
- *Transit warehouses*: the goods are stored for a short time in these; they are in warehouses at ports, airports and railway hubs, for instance
- *Consignment warehouses*: they are set up by a production organization directly with the customer; they used mainly in export supply
- *Distribution depots*: the sale to the final consumer is conducted directly, using the sale system of cash and carry, i.e. payment in cash upon goods receiving in this type of warehouse.

During the warehousing as such, it is necessary to maximally use storage spaces and at the same time to minimize the time periods required for the performance of individual warehouse operations by ensuring optimal management and organization of the warehouse as storage costs of 600,000 American businesses nearly reached \$ 112 billion in 2010. Ensuring the effective planning and management of the storage processes in all of the chain links requires meeting three basic functions of warehousing. These are the transferring of products, the storing of products and materials and transferring the information on the inventory items [19], [20].

WAREHOUSE AREAS IN CENTRAL EUROPE

According to Cushman & Wakefield (www.slovak-industrial.sk), a leading consulting company in the field of industrial real estate, the demands of companies for high-quality storage and production areas in Central Europe are based on the trust in this market. Two or three years ago, certain concerns

dominated the world market and most companies postponed their plans for business expansion or production relocation [21]. This period of uncertainty forced them to seek the most effective solution. Even despite the unfavorable situation that prevailed in the industrial real estate market, Central Europe has shown considerable stability in the market due to relatively cheap labor, the geographical proximity to consistent Western European markets and the potentially still growing consumer market.

There are more than 15 million square meters of modern space currently in Central Europe, of which 10.5% remains available for rent (about 1.6 million square meters). In 2012, a total of 2.8 million square meters of modern industrial halls were leased in the region encompassing the Czech Republic, Hungary, Poland, Romania and Slovakia, of which more than half were in Poland (1.5 million square meters) and about a quarter in the Czech Republic (670 1,000 square meters), meaning these countries have met 85% of the total demand. In having done so, both countries have been benefiting mainly from the continuous shift in production from Western Europe. The record amount of rent was historically achieved in 2011, when there were 3.2 million square meters leased in the region.

Almost half of all of the industrial sites in the region are situated in Poland. The market is steadily growing due to the expansion of existing parks and emergence of new sites mainly due to the improvement of transport infrastructure. Although the volume of the rentals decreased in Poland in 2012, compared to the year 2011, the number of new constructions grew annually by a quarter. It may be inferred from this that the largest industrial site developers believe in the growth potential of the Polish market and try to meet the demand of the lessees [22], [23].

The optimism in the rental area is moderated by a weaker construction effort in the Central European Region. In the first half of 2014, 260,000 square meters were used for building, while it was 370,000 square meters that were used in the same period in 2013. The year 2012 was relatively strong, in terms of construction. The construction activity was mainly concentrated in Poland (514,000 square meters) and partly

in the Czech Republic (106,000 square meters) and Slovakia (82,000 square meters). That only included about 20,000 square meters in Romania and Hungary. The most active developers within the region were Panattoni, Goodman, Prologis, CTP and SEGRO. Construction work has been progressing in the Czech Republic during 2014, whereas work has had slumps in construction in other Central European countries.

Central Europe has come considerably closer to Western Europe in the past 15 years, in terms of the logistics network density. In the period ahead, Cushman & Wakefield are expecting a slight expansion of construction and an ongoing reconstruction of halls. The rocket construction period, when the market was necessarily driven by the lack of modern industrial sites from the previous decades, is gone forever [24].

CURRENT SITUATION OF THE STORAGE FACILITIES MARKET IN THE SLOVAK REPUBLIC

According to the currently available surveys of Cushman & Wakefield, the industrial real estate market in Slovakia is undergoing a period of long-term stability. Based on the statistics of this company, we can conclude that the total modern area of storage facilities in Slovakia exceeded 1,200,000 square meters during the first three quarters of 2013. The following graphs (figures 1, 2) presents a growing trend in the overall modern warehouse areas, which is the sum of all of the modern industrial areas in square meters in the Slovak Republic. Subsequently, we are presenting a more detailed development of storage facility areas in Slovakia after each quarter since 2010 according to the data gathered by CBRE [24].

A similar development is also presented by CBRE that divides the Slovak market into two main areas:

- Market 1 – the Bratislava Region – warehouses and storage business centers approximately within 40 km from the center of Bratislava,
- Market 2 – warehouses and logistics centers situated outside Market 1.

According to the data from the CBRE, the total area of modern storage facilities in Slovakia was about 1.28 million

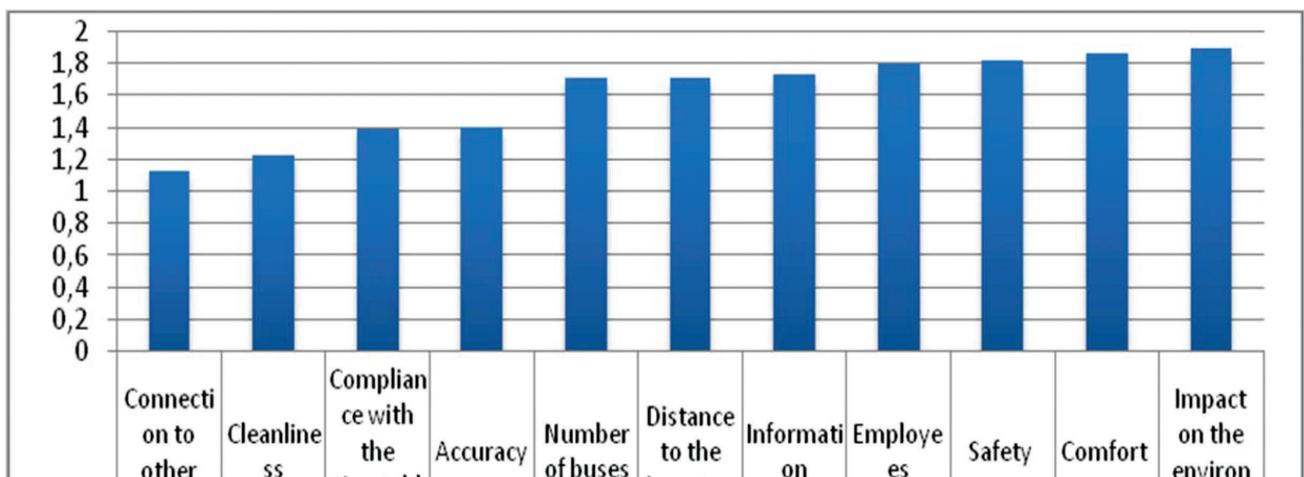


Figure 1 The overall modern warehouse areas

Source: [24]

Determine Sample Size

Confidence Level: 95% 99%

Confidence Interval:

Population:

Sample size needed:

Figure 2 The development of storage facility areas in the Slovak Republic

Source: [24]

square meters in 2013. Almost 80% of them were located in the market 1, i.e. within 40 km from Bratislava.

On the one hand, we can positively evaluate a slightly increasing trend in the modern area of storage facilities during the past six years, but on the other hand, the greater fluctuations have occurred due to the economic crisis, in terms of the rental of warehouse areas. The rent is the sum of warehouse areas in square meters, which were sold and leased to lessees. Among these leases, Cushman & Wakefield classifies new leases as the expansion of lessees, but they are also the extension of the lease (figure 3).

According to Cushman & Wakefield, the total area of the leased premises (including extension of existing leases) was recorded at 37,718 square meters in Slovakia in the first quart of 2014, which represents only half in comparison with the previous quarter and below the average level of all the quarters of the year 2013. On the other hand, new leases representing the lease of premises that were previously available were entered into the area of 19,437 square meters, which is a positive sign since the developers rent vacant space to new lessees or to the existing lessees who are expanding [24].

The same fluctuating trend is specific for the construction

of storage facilities. The following graph (figure 4) includes the sum of newly built and inspected modern building and warehouse areas in square meters for the given period in Slovakia.

The developers do not tend to bring new constructions to market as much as they did in 2007 or 2008, which results in the significant decline in the vacancy rate [25], [26]. The low vacancy rate usually motivates developers to start new constructions, which were very limited in the first quarter of 2014. There was only one construction work completed in Žilina where the Point Park Properties Developers Company built a new industrial hall of approximately 6,000 square meters in the Strečno region [24].

Percentage of storage facilities in the Slovak Republic is shown in figure 5. <http://www.slovak-industrial.sk/statistika-sr>

The CBRE group updates the statistics regarding the total area of approximately 1,200,000 square meters with the current number of vacancies for storage purposes. According to these data, there were about 189 vacant warehouse areas in Slovakia. Most of them were situated in Bratislava (120). There were 41 vacant warehouses in West Slovakia, 16 warehouses in East Slovakia and only 12 were located in Central Slovakia.

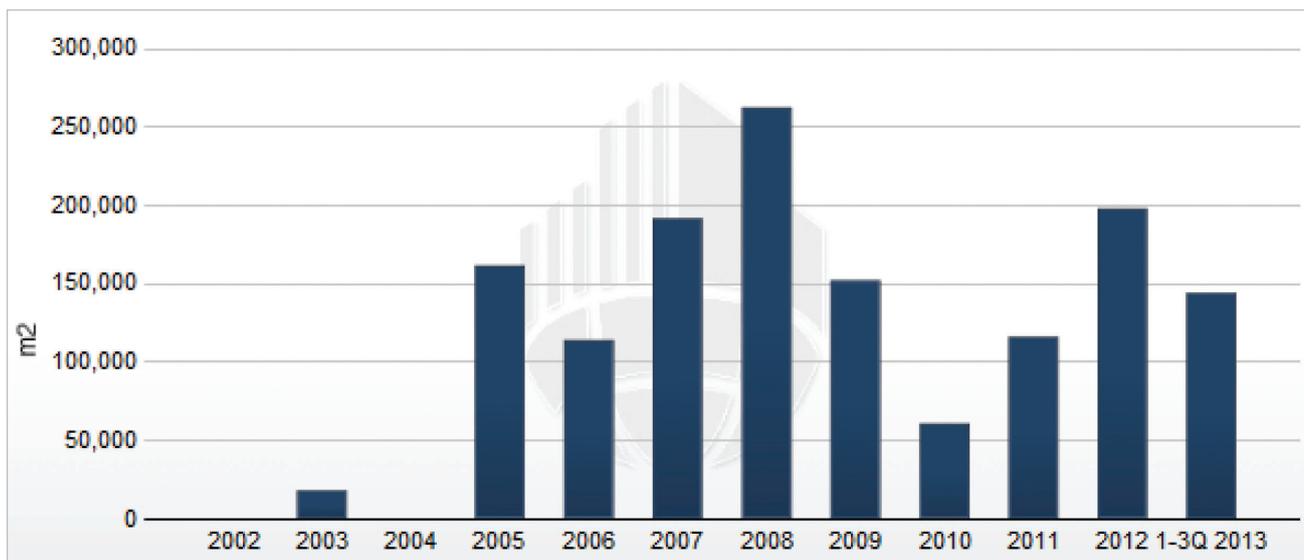


Figure 3 The rental of storage facilities

Source: [24]

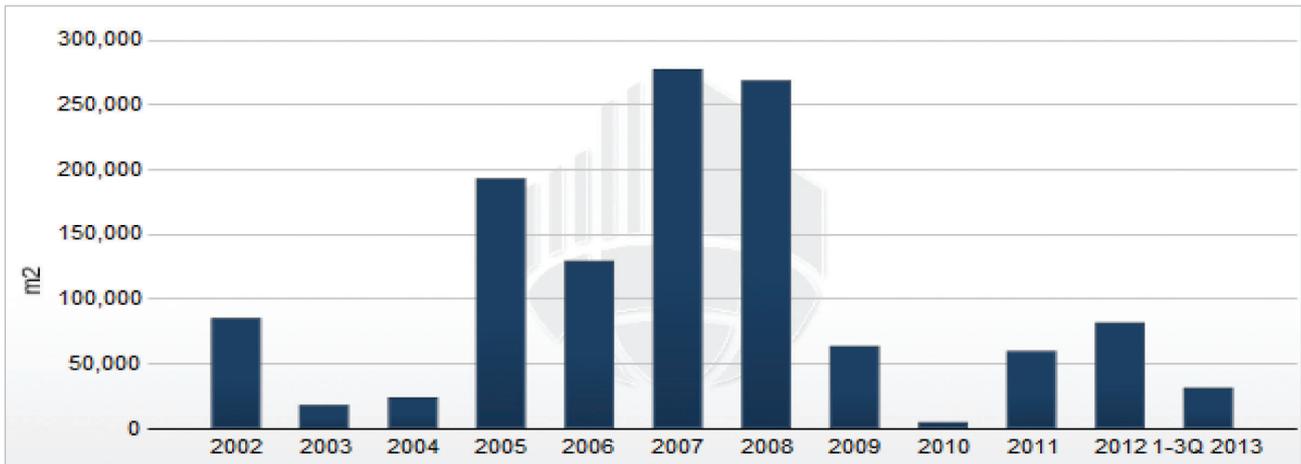


Figure 4 The construction of storage facilities

Source: [24]

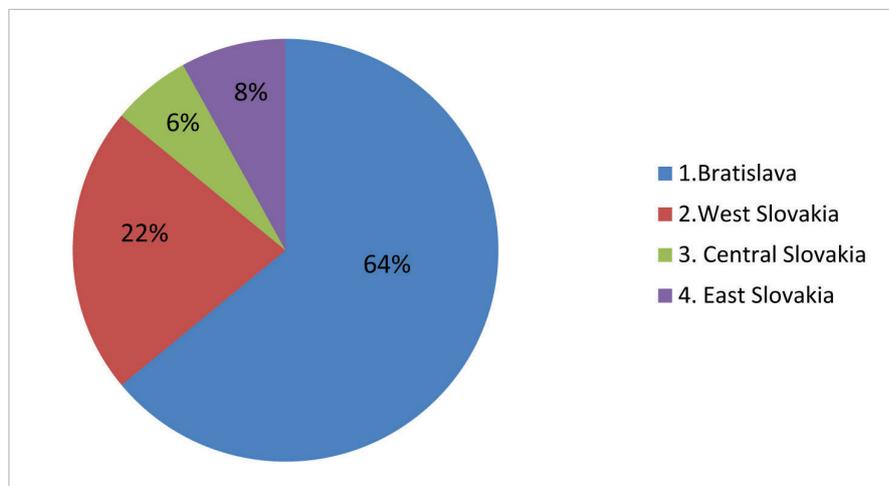


Figure 5 Percentage of storage facilities in the Slovak Republic

Source: [24]

As follows from the above graph (figure 5), more than 60% of all storage facilities are currently situated in Bratislava. Therefore, in the detailed surveillance CBRE divided Bratislava into five areas by its districts. The most significant site with the greatest number of storage facilities is the Bratislava III District with 77 warehouses. It is the fourth greatest area with a good

strategic position within the city and good transport links in terms of the land area of Bratislava. There are no storage facilities in the Bratislava I District because it is the historic city center.

Storage facilities in Bratislava districts are shown in the following table 2.

Table 2 Storage facilities in Bratislava districts

District	Boroughs	Number of storage facilities
Bratislava I	Staré Mesto	0
Bratislava II	Podunajské Biskupice, Ružinov, Vrakuňa	22
Bratislava III	Nové Mesto, Rača, Vajnory	77
Bratislava IV	Devín, Devínska Nová Ves, Dúbravka, Karlova Ves, Lamač, Záhorská Bystrica	8
Bratislava V	Čunovo, Jarovce, Petržalka, Rusovce	13

Source: [24]

Based on the standard of the buildings, warehouses are classified into three groups, which are the types A, B, and C. There are in total 81 new modern warehouses in Slovakia, which is more than 42 %. The developers offer tailored constructions in these kinds of areas. In addition to the buildings intended for logistics and light manufacturing purposes, there is the possibility of renting other offices throughout the site. Type A objects allow 24-hour access, 7 days a week; they are monitored by a camera system and also by a security service (24/7). Ramps, cranes and other techniques are commonplace. The warehouses are heated by gas infra-red heaters; there is a car park with parking spaces, catering for lessees and other services.

The most common standard of warehouses in Slovakia is type B. There are almost 60 % (105) of them in total. These types of warehouses mostly allow 24-hour access, seven days a week, but the access could be time-limited depending on a particular warehouse. Some warehouses typically offer

security guards as well as a surveillance camera system. Some of them may offer only one of these services.

Only three warehouses are classified as type C. All of them are located in Bratislava. These are buildings with old standards where only security service is offered, without any other services available.

Storage facilities by the type of building are shown in the following figure 6.

Focusing on the area of Central Slovakia, we have discovered that there are 12 storage facilities available, which represent only 6% of the total storage space in Slovakia and at the same time, that is the lowest number of storage facilities in all of the regions of Slovakia. The storage facilities with the largest areas are located in the Lučenec Region. These three objects provide storage space with a total area of 56,240 square meters.

Storage facilities in the central part of the Slovak Republic are shown in the following figure 7.

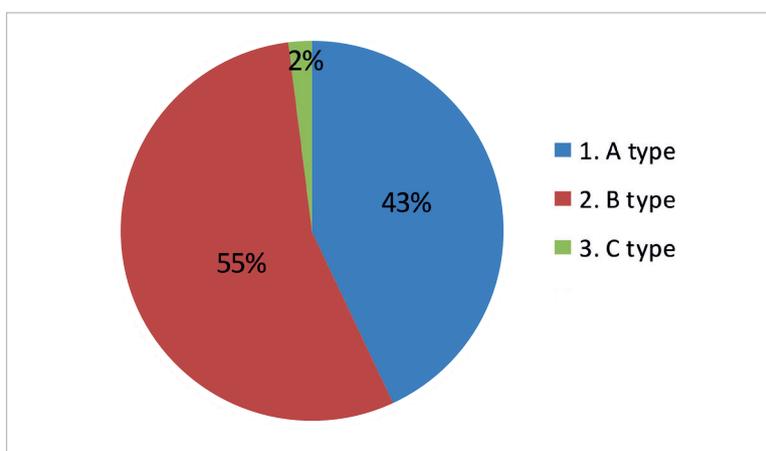


Figure 6 Storage facilities by the type of building

Source: [24]

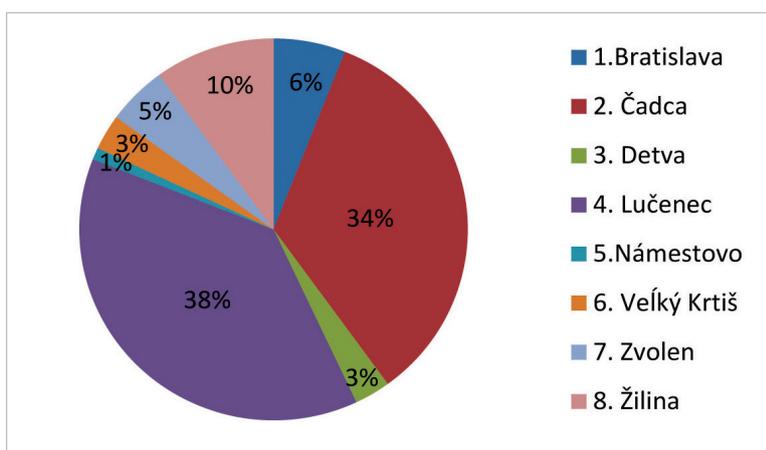


Figure 7 Storage facilities in the central part of the Slovak Republic

Source: [24]

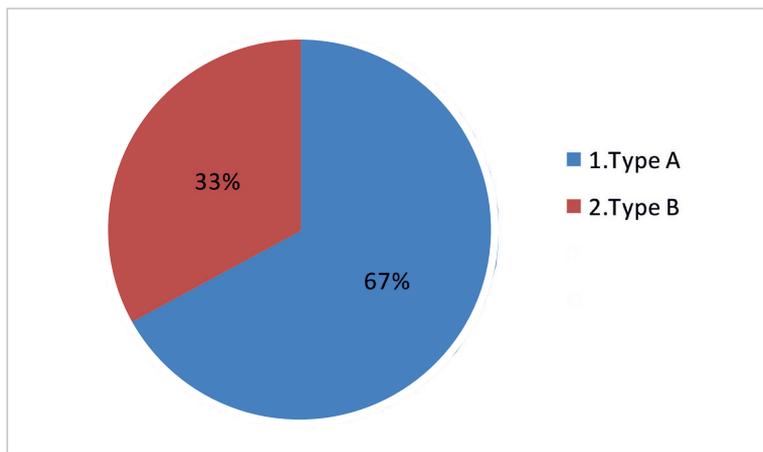


Figure 8 Storage facilities in the central part of the Slovak Republic by the type of building

Source: [24]

In terms of the types of buildings, storage facilities of the A type prevail in the Central Slovakian area. Out of the total number of 12 storage facilities located in Central Slovakia, eight are situated in the towns of Čadca, Lučenec, Námestovo, Veľký Krtíš, Zvolen, Žilina, and two are in Banská Bystrica.

Figure 8 shows storage facilities in the central part of the Slovak Republic by the type of building.

Four storage facilities of the B type are located in Detva, Lučenec and the other two are in Žilina. All of them allow 24/7 access. There is also a security service available. Three of the warehouses are equipped with ramps.

In the following table we have summarized the absolute frequency (AF) while monitoring the number of warehouses in Slovakia. The relative percentage frequencies are monitored more closely in the breakdown into the relative regional abundance (RRA) and the relative qualitative abundance (RQA) given as a percentage.

The comparison of storage facilities in the Slovak Republic is presented in the table 3.

To sum up, on the one hand, we can say that in the Slovak Republic the B type warehouses are predominant (55.56%) in terms of the standard of the buildings, as the significant number of this type of warehouses is located in Bratislava (91; 86.67 %). After the detailed analysis, focusing on the number of storage facilities within each region, we have found out that the A type warehouses are predominant in each of the regions. Most of them are located in West Slovakia in terms of the A type storage facilities (32; 39.51 %), which means West Slovakia overtakes

Bratislava (26; 32.10 %) by almost 8 % (6; 7.41 %). If we compare the number of warehouses by regions, we can see that the new modern A type warehouses are predominant in Central Slovakia (8; 66.67 %), as well as in East Slovakia (15; 93.75 %), which can definitely be seen as a positive fact.

CONCLUSION

The subject of logistics has been studied by a number of experts and each of them offers their own definitions since its inception. Their common feature is that the objective of logistics is to optimally ensure the movement of the goods and material from the point of origin to the point of consumption and, in some cases, to the place of disposal. Warehouses are used to bridge the period of time between the moment of production and the moment of disposal. It is not easy for the company to decide whether to use its own warehouse or an external warehouse. The company must consider whether it has enough funds not only for the construction of its own warehouse, but also for its operation, staffing and handling of the equipment [25], [26].

Taking all these facts into account, the company may decide to build a warehouse; on the other hand, it may be more cost efficient to use the existing warehouse and thereby saving funds intended for the construction of facilities. There are warehouses currently available worldwide. They are located in every region of the Slovak Republic and there are different types of them, ranging from those in the original state, the standard ones to the new modern warehouses providing various warehouse

Table 3 The comparison of storage facilities in the Slovak Republic

	The A type standard			The B type standard			The C type standard			In total
	AF	RRA	RQA	AF	RRA	RQA	AF	RRA	RQA	AF
Bratislava	26	32.10	21.67	91	86.67	75.83	3	100.00	2.50	120
West Slovakia	32	39.51	78.05	9	8.57	21.95	0	0.00	0.00	41
Central Slovakia	8	9.88	66.67	4	3.81	33.33	0	0.00	0.00	12
East Slovakia	15	18.52	93.75	1	0.95	6.25	0	0.00	0.00	16
In total	81	100.00	42.86	105	100.00	55.56	3	100.00	1.59	189

Source: authors

operations. We can see the growth of the total area of storage space as a positive fact, even though the development in the construction of new storage facilities is not as rapid as it was before the economic crisis. However, the storage facilities are rented to new lessees or the expanding existing lessees and as the analysis shows, there are still enough vacant storage facilities in the Slovak Republic which businesses can use.

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