Storage Areas and the Development of E-commerce Sector Based on the Example of Poland

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The popularity of e-commerce sector in Poland is increasing each year. Thus, it determines the need for market observation and analysis of the changes taking place. This article aims to examine if the dynamics of the development of e-commerce in Poland significantly affects the development of the offer of modern warehouse space. Based on available market sector reports the article identifies major factors which stimulate storage management on the one hand, but are certain challenges on the other hand. The article is undoubtedly a good starting point for further tests to examine the model on a sample of entities operating in the industry. E-commerce industry in Poland is growing very rapidly. Retail chains are introducing more and more multi-channel solutions, numerous start-ups are being created, there is increasing interest in internet shopping, which, undoubtedly, enhances the development of the sector. Poland online sales represents only a small percentage in total retail sales and has a lot of catching up to do compared to the mature European markets. However, the situation is clearly more dynamic and the differences are decreasing. More and more companies are operating in the industry, which translates into demand for modern warehouse space. The purpose of this article is to present the dynamic changes taking place in the Polish market, closely linked to the development of e-commerce and an attempt to define their role in shaping the offer of modern warehouse space. E-commerce plays a key role in building global supply chains, in which storage can significantly affect their efficiency and agility. The article highlights the changes in the market warehouse in their many aspects, however, it clearly emphasizes the impact of e-commerce sector. E-commerce is revolutionizing supply chains by rebuilding existing links, such as marketing, payment system, distribution, inventory management, and storage. What important, therefore, is the research problem presented in the article, because it presents current trends and market changes.

Keywords: warehouse, logistics, logistics operator, market, e-commerce, retail, omnichannel, consumer

Changes to the E-commerce Market in Poland

E-commerce in Poland is the largest growth among European countries. The number of companies operating in the e-commerce is going up each year, thus, increasing the demand for modern adapted warehouse space. Innovation is definitely conducive to the development of e-sales, because mobile devices and applications, or the ability to pursue non-cash payments favor the growth of online transactions. The increasing availability of the internet in Poland and the growing number of its customers interested in e-shopping make the

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market far more dynamic. Automatic storage and advanced information systems allow effectively managing the available assortment and monitoring the completion of orders. The variety of entities operating in e-commerce, as well as their ongoing operations, contributes to assigning specific functions to warehouses in the supply chain. Therefore, the implemented innovations determine the operation of enterprises, clearly shaping the demand for warehouse real estate market.

Undoubtedly, online sales have changed trade and logistics activities that are undertaken, increasing the need for versification for many existing business models (Filiciak & Polak, 2012). We have to deal with numerous areas of increased transformation, because the existing supply chains are being configured, logistics processes are evolving, and the expectations of companies with respect to inventory are increasing. Sales went the omnidirectional (omnichannel model¹) way integrating sales channels in order to improve customer service. These changes undoubtedly contribute to the development of e-commerce.

For a long time, retail chains in Poland did not run e-sales, seeing it as another marketing activity. Currently, the situation is somewhat different. The need for parallel development of sales in multiple channels has been recognized. Prologis² and JLL³ (2015) are companies which conducted studies in the Polish market, which, among other things, show that retailers offering multichannel sales are struggling with how to process and complete e-orders. These institutions have several alternatives to choose from—starting from a central warehouse that supports traditional sale, ending up with one single channel dedicated to e-objects. The decisions are determined by many factors, which include, for example, the size of trading revenue or the company's location. It is worth noting, however, that the range and the number of customers of a traditional channel may be quite different than those dealt with in the e-channel. Alma⁴ is a good company example. At the beginning of its operations, when they were launching online sales, the shop offered online services exclusively from stationary stores. However, the growing popularity of e-sales facilitated the creation of a new warehouse and logistics infrastructure in the Warsaw agglomeration. A new distribution center warehouse Alma24.pl dedicated to the various needs of e-customers was created there. Currently, in the Internet channel, Alma runs 8% of annual sales, and it is continually growing. This shop offers mainly groceries and introduces to the market more and more solutions in line with customer expectations. The latest service is the model of “click and collect”, in which the customer decides about the place and time of receipt of order. Their project partner is the company Coolomat⁵ (Michalski, 2015). Their fridge machines have been located in different places, resembling the very popular self-service post machines PaczkomatyInPost⁶, which have been present on the Polish market for some time already.

Although doing grocery shopping online is still a small percentage, it is a phenomenon, there are different

¹ The phenomenon of merging stationary business with e-commerce, in which the basic requirement of customer service functionality is the need of all sales channels functioning in the same way (with the same price).

² Prologis is the world leader in the industrial real estate market. The company plays an important role as the owner or a real estate investor and developer in different projects in 21 countries.

³ JLL is an international consulting company providing comprehensive services in real estate, classified on the Fortune 500 ranking list. Their range of operation includes management and services for portfolios of objects with large surface. The company carries out transactions all over the world.

⁴ Alma is a Polish chain of delicatessens and supermarkets belonging to the Krakow's ALMA MARKET SA.

⁵ Coolomats is an innovative, available 24 hours a day device that allows customers of grocery stores to collect online orders in a convenient location without having to wait for a courier in the house.

⁶ Inpost is a private postal operator in Poland, operating on a national scale since November 2006. The company launched Paczkomaty, which allow receiving the consignment in a convenient location 24 hours a day, seven days a week in specific mailboxes. The company belongs to the group Integer.pl S. A.

phenomena which favor its further development. It is, for instance, a considerable convenience for online purchase in winter, when access to the store is not easy. The online shopping cart is usually not small, which can encourage free delivery at a specific amount. Another incentive is the lack of having to move heavy products around the retail outlet, putting them on a cash register tape, and then packing into the car in the parking lot. Therefore the customer makes an assumption that if they place an order via the Internet and it is delivered to their place of residence, it is worth shopping in one place, eliminating the physical effort in the purchasing process. In this context, It can be seen that a benefit for the development of food sales in the coming years (Dunnhumby, 2015; Gemius, 2015a), which will undoubtedly determine the demand for logistics service of these orders and the demand for warehouse space dedicated to multi assortment nature that is characteristic for the food industry.

Observation of the Market Challenges in the Era of E-commerce

E-commerce in Poland has the largest increase among the EU countries, and its value is estimated at about 34 billion zlotys⁷. The number of e-stores is increasing as fast as the growth of the entire market. This situation is conducive to rapid development of mobile devices and applications, and cashless transactions.

The consumer himself has changed, too. At the moment, the most important stimuli to make purchases online for him include: availability at a convenient time and place, delivery and the possibility to compare prices (Gemius, 2015a). However, Gemius⁸ monitors the market from the point of view of the consumer and their expectations of the industry. For the purpose of the presented considerations, it is necessary to look from the other side-entities operating in this market. Prologis and JLL conducted research related to the development of e-commerce, in which the target group was among others, logistics operators. They indicated some features as crucial for the development of the industry in 2020, which allows specifying the characteristics of the sector (Figure 1). Thus, it is possible to illustrate the challenges that the entities operating in the e-commerce sector in the coming years will be forced to face. All companies participating in the survey indicated delivery on the same day as the greatest challenge that the logistics industry will have to cope with. Today, completing the order on the same day can be a competitive advantage and determine the success of the company. Companies such as Komputronik⁹, Venezia, Swiss, or Minuta.pl¹⁰ successfully implement this service, while still recognizing that the supply is also part of brand building. To meet this challenge, one should definitely seek locations for storage facilities which will be situated as close as possible to their recipients. Such actions enhance the need to increase supply chain efficiency and effectiveness of warehouse operations.

Therefore, to meet the expectations of our clients, it determines the need for the availability of goods, which may increase the need to change their business model to one that will optimally manage the inventory management of the company.

The existing law on online consumer rights promotes the development of electronic commerce. It enables buyers to return goods without giving a reason. However, apart from growing e-sales, it should be stressed that

⁷ On the market there are many entities doing research one-market and there is no unanimity among them in determining the market value and its share.

⁸ Gemius is a Poland internet research agency operating in the markets of Central and Eastern Europe.

⁹ Komputronik is a Polish retailer chain, offering, among others, computer equipment and home appliances and electronics. The company was founded in October 1996, when the first store was opened in Poznan.

¹⁰ Minuta.pl is a Polish specialist shop with watches and jewelry.

there is a need to increase the effectiveness of sales processes. As many as 60% of respondents see return policies as a big change and challenge for the e-commerce industry. Thus, for example, the company Zalando¹¹ is building its competitive advantage of its online store by offering returns of purchased goods within 100 days. This German company is one of the most popular purchase platforms on the Polish market with about 2.6 million users. Therefore, the policy of returns can be a big challenge for the logistics operator, who must collect the goods from the customer and put them back to stock and resell them.

Figure 1. The challenges associated with the development of e-commerce by 2020. Source: based on (Prologis and JLL, 2015).

About 40% of respondents mentioned the importance of cross-border sales. The interest in purchasing outside the country will be still growing. Experts of Gemius (2015b) think that one in eight Polish Internet users does shopping on foreign sites. Online shopping platforms are becoming more and more popular in Poland, although the market is still dominated by Allegro¹². Others include: Aliexpress.com or Wish.com. It can therefore be assumed that cross-border sales will gain popularity, despite the problem of high costs of delivery.

Logistics operators also draw attention to work safety as a factor in the development of the industry (20% of responses). In the context of administrative costs incurred by entities operating in the e-commerce sector, relatively high labor costs will remain an important question, because the number of staff employed in electronics sale sector is higher than in traditional retail sector.

The duration of the lease agreements can also be a factor preventing the development of the sector, for instance, in a situation when it is not possible to expand the storage infrastructure within the leased in the

¹¹ Zalando is a German shipping online store based in Berlin. Its sales focus primarily on shoes and clothing. They also offer a wider range of products including: decorative products, home accessories and even furniture.

¹² Allegro.pl is the largest on-line trading platform in Poland. The portal is part of the Allegro Group, which is part of the South African Naspers Group media agency.

timeframe of the contract. Therefore, it is reasonable to search for such locations that will guarantee future extension within the existing facility.

The availability of warehouse space dedicated to the specific needs of e-business can be a challenge in the coming years (10% of responses). Monitoring and analysing of warehouse space market in Poland show, however, that inventory management is prepared to deal with the growing number of e-stores, changing patterns of the existing companies, and increasing interest in e-commerce industry among customers.

The Analysis of the Specific Nature of Storage Space for E-commerce Sector

More and more foreign companies are becoming aware of the growing potential of Poland, manifesting itself among other things, in lower operating costs, combined with a highly qualified staff. The standard of offered storage space, as well as continued investment in the development of transportation infrastructure attracts more operators to invest in Poland, with a view to processing orders to European countries. This location allows them to quickly complete orders, while reducing operational costs. The report of EY¹³ (2015, p. 2) confirms the attractiveness of Poland for foreign direct investment in the region of Central and Eastern Europe. In 2014 Poland moved up three places—from 10th to 7th position in terms of number of new foreign investment among all European countries. The country saw the highest (23%) increase, thus becoming the leader in this group in Central Europe.

The warehouse space market in Poland takes into account the increasing requirements of customers and the specific characteristics of e-commerce. Some of the foreign e-operators have already recognized the potential of Poland and moved their businesses here (Amazon or Chinese e-commerce leader Light in the Box). The growing interest in shopping online is undoubtedly a stimulant for the demand for warehouse space. The need to generate providers of multichannel sales, companies only e-sales, as well as retail chains investing in a dedicated warehouse that supports online orders. It is important for the Polish market, to play logistics operators, indicating the characteristics of warehouse space, designed to support e-commerce (Figure 2).

Flexibility in increasing or decreasing the space was indicated by 70% of respondents. The report by Prologis and JLL (2015) shows that for half of the respondents' additional warehouse space, located on the mezzanine plays an important role in e-commerce. It simply allows optimizing storage of goods. De Koster (2013, p. 9) also draws attention to the important issue of the correct location of the warehouse, in order to increase the efficiency of processes carried out there. Other features, such as a high level of security, additional social space, more power, more efficient air conditioning and ventilation (HVAC), more parking space for employees and the quality of their working conditions are also very important, and certainly characterize this sector. Unlike traditional trade, e-commerce does not require advanced automation processes, which would improve the quality of operations (Hamberg & Verriet, 2012), because many of them are performed manually. As for location, the key factor is the availability of personnel, an extensive road infrastructure, as well as the proximity of the end user.

Tastes and preferences in e-commerce are definitely enhanced by creating the built-to-suit (BTS) facilities to provide for the specific needs and particularities of stored products. It must therefore be concluded that the characteristics of storage facilities serving the e-commerce sector will be:

¹³ EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity.

- location near urban areas;
- additional equipment such as: mezzanines, lighting, ventilation, air conditioning, and a greater number of docks;
- combination of manual and automated operations;
- above standard height.

The calculations of Prologis (2014) reported that companies operating in the e-commerce sector report nearly three times the demand for more storage space than companies that support only the traditional sale. In addition, tenants are increasingly interested in urban locations allowing fast delivery. A common phenomenon is the use of distributed order fulfillment strategy, thanks to support from several distribution facilities.

The variety of entities operating in the field of e-commerce and their ongoing operations allow to attribute different functions in the supply chain to storage buildings. Manzini (2012) or Pienaar and Vogt (2012) paid attention to this issue, they highlighted the important role of inventory management in the management of global supply chains. In their opinion, storage systems significantly determine the level of product quality, as well as customer service, which significantly affect the total cost of Logistics. The most popular formats in the developed markets (United Kingdom, France, and Germany) include:

- centers dedicated to handling online orders;
- courierhubs;
- storing centers;
- urban logistics centers;
- return centers;
- warehouses of food products sold electronically.

What essential for Poland is the feasibility of all these activities within the available storage facilities in Poland. E-commerce companies have the specific industry needs which were mentioned above. This, in turn, makes some of the sites better adapted in relation to the needs of tenants. It should be emphasized that in the Polish market the present developers have the experience to meet the expectations of the industry. The Polish market is thus prepared for growing demands and requirements of the tenant e-commerce.

Each one billion zlotys spent on the Internet generate demand for warehouse space amounting to 18.5 thousand m² (Prologis and JLL, 2015). Assuming that the multiplier will remain at this level in the following years, and e-commerce will grow by an average of about 15% per year, in 2020, the industry of e-commerce should generate demand amounting to 700,000 m². Therefore, the important role that e-commerce sector plays in the Polish warehouse market can clearly be seen.

What remain in the area of interest in e-commerce sector are, therefore, not only large-format stores, but also small, cross-docking centers located in the city center. A very important issue, which is characteristic for the sector, is the so-called secondary demand. It is supported by return centers which are often standard high storage warehouses. The main difference between logistic activities carried out in the traditional retail and in the supply chain of the e-commerce sector is, primarily, the speed of delivery, associated with a variety of recipients—B2B rather than B2C (Izakowski, 2015). It is the specific nature of the market then it takes sometimes more time to complete an order, because it is related with increasing costs of supplies. What also matters here is the seasonality of sales, which increases demand for flexible storage space, as pointed out by logistics operators in the survey carried out by Prologis and JLL.

Figure 2. Highlights magazine for the companies with e-commerce. Source: based on (Prologis and JLL, 2015).

Conclusions

The article is a source of knowledge presenting current trends in the warehouse market, based on the analyses of reports and observations. So far, there has been no compact position in this area in the literature on this subject. The information in this field is presented only fragmentarily in available positions.

Therefore, the presented data support the conclusion that the dynamic development of e-commerce poses a number of challenges for all the players operating in the industry.

The dynamic development of e-commerce poses a number of challenges in front of all the players operating in the industry. Storage facilities in the industry are clearly beginning to be specialized. The total resources of modern warehouse space in Poland are now reaching 10 million m². They are mostly objects which meet the expectations of e-commerce tenants. On the basis of the analysis, it must be recognized that in the coming years the sector of e-commerce will play an important role in shaping the demand for warehouse space in Poland. This demand will be generated from several directions. The most important players include:

- leading international companies already present in Poland or considering moving its business;
- stores and traditional chains investing in space dedicated to the e-channel;
- logistics operators serving the orders of external partners;
- omni-channel transactions, in which only part of the space is intended to support e-purchase;
- cross-docks located near urban areas;
- centers exclusively dedicated to handling returns.

It must therefore be concluded that there is no optimal solution dedicated to warehousing in electronic commerce.

There is therefore no optimal solution dedicated to e-commerce warehouse management. E-clients vary in size, there is a large number and variety of items sold online. Apart from Poland's position and constantly

evolving and modernized infrastructure, it is the Polish undeniable asset—the cost attractiveness, which inevitably translates into and will continue to increase the demand for warehouse space in the country.

It is necessary, therefore, to further analyze and examine the phenomenon to observe the changes in the market, and identify the needs that the sector e-commerce increases.

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