

THE E-COMMERCE MARKET IN CONDITIONS OF UNCERTAINTY – DEVELOPMENT PERSPECTIVES. CASE STUDY

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Purpose: The aim of the article is to present the development perspective of the e-commerce market area and courier services, taking into account the time of uncertainty (the prospect of a pandemic), based on selected data from the Pointpack company and secondary data.

Design/methodology/approach: The topic includes an analysis (case study) based on the example of Pointpack and data that has been examined by experts, as well as secondary data, a report on the state of the e-commerce market in Poland.

Findings: The analysis showed a significant development of the e-commerce market and consumer activity despite the times of uncertainty (pandemic, war).

Research limitations/implications: The research has been limited to data obtained from a single source and limited resources (a selected segment of the market and consumers), hence future research can be extended to different levels and theoretical areas. It is important to conduct further research in this area to increase their universality. An interesting comparative study would be an analysis of consumer behavior in the perspective of sending and receiving parcels in selected regions of the country.

Practical implications: The described data and case study analyzes may indicate to organizations that the introduction of courier services to points of sale (or service) is today a necessity and a future in acquiring new customers.

Social implications: The development of the e-commerce market associated with sending and collecting parcels in stores contributes to the development of CSR attitudes of the organization by reducing carbon dioxide to the environment and building responsible customer attitudes.

Originality/value: Case study.

Keywords: e-commerce, management, business management, enterprise.

Introduction

Today, the Internet is an essential aspect of the daily lives of consumers around the world. With the development of technology, recipients can communicate efficiently, maintain interpersonal relationships and express their opinions more than ever before (Carvalho, Fernandes, 2018). Taking into account the needs and requirements of consumers, the rapid

growth and development of the e-commerce market was only a matter of time. E-commerce is the use of the Internet for marketing, identification, payment and delivery of goods and services. Through E-Commerce technology, the Internet has revolutionized the mode of business transactions by providing Producers, Whole sellers, Retailers and Consumers with the ability to Bank, Invest, Purchase, Distribute, Communicate, Explore, and Research from virtually anywhere, anytime where there is Internet access. Most importantly, it has created electronic markets and provided opportunities for businesses to reach out from the producers to the consumers in a very direct way. Also by virtue of the Technology and Logistics, it has enabled Producers, Wholesalers, Retailers and consumers' immediate access to these electronic markets. E-commerce is powered by the internet, where customers can access an online store to browse through, and place orders for products or services via their own devices (Anup, 1997). On the other hand, Brzozowska-Woś believes that e-commerce is primarily "(...) business ventures focusing on individual electronic transactions, for which networks are a place for the exchange of information, services and goods, including the company's relations with its market environment" (Brzozowska-Woś, 2014, p. 5). Thanks to the digital technologies used, e-commerce provides a direct connection of business partners, and also increases the attractiveness of the business environment and new opportunities for consumers (Hajli, 2014).

The development of sales platforms could not exist without globalization. The globalization of markets is related, on the one hand, to the phenomenon of popularization of tastes, preferences, lifestyles and decision-making criteria by buyers, and on the other hand - to open trade and business investments. Both of these factors contribute significantly to sales and product development on an international scale (Allaire, Firsirotu, 2000; Bolkunow, 2019; Dethine, 2020). However, it should be remembered that in the environment of each organization there are constant changes that affect its functioning to a greater or lesser extent. In this aspect, can talk about the uncertainty of the environment, which is defined as the relationship between the variables of complexity and the rate of changes in the elements of the environment (Hatch, 1997). Analyzing the concept of uncertainty, it is worth paying attention to the interesting phenomenon described in the world literature "Black Swans" (Taleb, 2005). Nassim Nicholas Taleb, the creator of this term, believes that "Black Swans" mean events and phenomena that are unpredictable, unreal. They don't seem to happen, but they do happen anyway. The opposite to this definition is the phenomenon of "White Swans", i.e. events that are understandable and orderly for the overall development strategy of the company. Unfortunately, companies are often unable to prepare for unpredictable events. The contemporary "Black Swan" was the COVID-19 pandemic (Kotnis, 2014).

Global pandemics have escalated significantly over the years, e.g. SARS in 2003, H5N1 in 2006 and H1N1 in 2009, each of which hampered economic activity and economic growth (Chung, 2015). Currently, researchers are observing the effects of the global COVID-19 and the war in Ukraine, which introduced a state of chaos, uncertainty in business and paralyzed many sectors of socio-economic life for a long time, stopping trade, tourism and closing borders

between countries (Soto-Acosta, 2020). Many scientists have long predicted that global pandemics could force entrepreneurs to take new business actions. The COVID-19 crisis has significantly accelerated the expansion of e-commerce towards new companies, customers of the sales offer (Hudecheck et al., 2020). It gave customers access to a significant variety of products, taking into account the convenience and security associated with contactless delivery of parcels. This solution has been introduced by the largest e-commerce providers Alibaba, Amazon and JD, using automated technologies such as self-driving cars, robots and drones to safely deliver “contactless” deliveries to customers (Lin, 2020). Many companies have moved their activities to the Internet, selling on sales platforms, e.g. Marketplace (Facebook), OLX, Allegro, Vinted and others. It should be noted that the economic, social and geopolitical situation affects the moods and habits of consumers. Brands, both local and global, in the face of the challenges of war had to change their plans and existing schemes of marketing activities. Since the pandemic, can see that consumers' expectations towards business have increased - brands are expected to take a specific position, active social assistance and solidarity, especially with the Ukrainian society. Research shows that the COVID-19 crisis has led people in many OECD countries to significantly reduce their physical interactions. For example, in the United States, retail and food service sales fell by 7.7% in February-April 2020 compared to the same period in 2019. However, sales in grocery stores and non-store retailers (mainly e-service providers) increased by 16% and 14.8%, respectively. In the EU, retail sales via mail order houses or online in April 2020 increased by 30% compared to April 2019, while overall retail sales decreased by 17.9%. The resulting shifts from traditional retail to e-commerce are likely to be significant across countries (OECD, 2020).

Due to the growing number of customers in Poland who have become active participants in the e-commerce market, the study of their behavior and habits has become an important area of consideration not only for academics, but also for many business organizations. Knowledge about buyers is extremely important for the company's operations and affects the building of sales strategies (Karczewska, 2010). Customer preferences are constantly changing, which is why it seems advisable to study and analyze customer behavior related to sending and receiving shopping shipments, which are presented in the methodological part of the article.

E-commerce: development perspectives

Decision making in enterprises under conditions of uncertainty is much more difficult and requires different actions in risky situations and conditions (Tyszka, 2010). It should be noted that uncertainty increases primarily with the volatility and speed of events, which are difficult to predict and at the same time control from the management of the organization. The geopolitical crisis (today the war in Ukraine, previously the pandemic) has also contributed

to the formation of a new type of customer, who is characterized by greater uncertainty of tomorrow, purchasing/financial restrictions and increased price sensitivity, as well as environmental (awareness of nature protection, care of the environment). Contemporary literature defines the importance of e-commerce platforms that facilitate virtual interactions and provide informative and insightful product information (Chandna, Salimath, 2018; Li et al., 2020) that consumers can recognize as economic benefits (Zhang et al., 2017). Customers use e-commerce platforms to interact and buy products from retailers, while retailers can provide consumers with various online shopping opportunities, maintain relationships and support (Wagner et al., 2020). The most common and popular transaction models are presented in Table 1.

Table 1.

The most popular types of e-commerce

TYPE	DESCRIPTION
B2B	Business to business Businesses sell products/services to other businesses
B2C	Business to consumer Businesses sell products/services to non-business customers (online retail store)
C2C	Consumer to consumer Consumers sell to other consumers (e.g. marketplaces)
C2B	Consumer to business Consumers sell to businesses (e.g. influencer marketing services)

Source: Own analysis based on *Techtarget* Wesley Chai, Brian Holak.

Depending on the type of goods and services, the appropriate channel should be selected. The e-commerce market is very wide and is directly related to both the end customer and the business customer (partner). An important part of the e-commerce market is the Marketplace. This is a site where many online retailers offer to sell their products. Marketplace allows you to search for products and their purchases directly in one place (website). Sellers using marketplace platforms can more easily observe their customers' traffic on the site, thanks to which they can better adapt the way they sell online (e.g. Allegro, OLX, Alibaba, AliExpress, eBay, Erli, Etsy, Vinted or social media: Facebook marketplace). Depending on the products, there are two types of marketplace platforms: vertical and horizontal. On vertical platforms, sellers offer a wide range of products, while on the vertical market it is important to focus on selected, often specialized products (Jiang Jui-Chin, Chun-An, Chih-Chien, 2008).

The rapid development of the e-commerce market is also associated with the constant transfer of the sale of goods and services from a stationary position to the online space (marketplace). The Polish e-commerce market is currently experiencing a boom. In 2021, 87% of Poles shopped online compared to 68% in 2020 (*Research Gre Scale Study - 4th wave*, 2021).

Researchers of the e-commerce and related markets predict that by 2027 the share of sales platforms in the entire market area will increase (Fig. 1.)

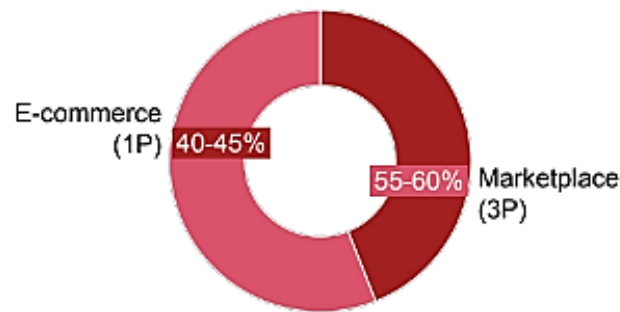


Figure 1. Share of the platform model in online sales in 2027.

Source: Strategy&, report *Prospects for the development of the e-commerce market in Poland 2018-2027*

It is worth mentioning that despite the development trend in the area of sales platforms, not all new proposals are popular among Polish consumers. A good example is the foreign Shopee platform, the potential of which was not sufficient to compete with the domestic Allegro brand (Dąbrowska-Cydzik, 2023).

Methods and Results¹

As already mentioned in the earlier parts of the article, research on selected consumer behavior and trends in the e-commerce market comes from Pointpack's own sources. The Pointpack company is closely related to the e-commerce market, which undoubtedly grows along with the development of this sector. The company is one of the most important technological partners in the country, building IT solutions and maintenance services for the commercial and courier industries in the area of infrastructure of the first and last mile of city logistics. The company focuses on building synergies and scale resulting from the integration of many partners by creating a business space for cooperation in traditional and online trade, logistics and on-demand services. As an integrator, it enables sending and receiving shipments at points (PUDO)² and courier machines (APM) through technological cooperation of retail chains, courier companies and payment partners (e.g. PEP). In addition, Pointpack enables partners to create new and additional services, increase profits and attract new customers, strengthening the position of their brands in the market. The company also supports the development of a network of shared courier machines (APM). Currently, Pointpack cooperates with over 17 000 points throughout Poland (including the largest retail chains), the largest couriers (Poczta-Polska, DHL, DHL Express, DPD, FedEx, Orlen Paczka, GLS). Since the

¹ The material presented in this section comes from the company's own research.

² PUDO point (Pick Up and Drop Off point) - collection of the parcel outside the place of residence (e.g. chain of stores).

beginning of its operations (2011), the company has handled over 48 million shipments. Each month, on average, it handles about 2.5 million shipments throughout Poland (Pointpack, 2023).

In order to present the development of the e-commerce market, this article adopts the case study research method based on selected data from the Pointpack company. Some researchers postulate the importance of increasing the share of qualitative methods in research on management sciences (Sławińska, Witzczak, 2012, p. 108; Czakon, 2006, p. 9; Czakon, 2009, p. 13). The subject of the case study method may be the process implemented by the enterprise (Dyer, Nobeoka, 2000, pp. 345-367). The process adopted by Pointpack is the integration of retail chains and courier companies, which ensures sending and receiving courier parcels in selected stores during everyday shopping. In this case, it is important to ask research questions about how quickly the company has developed in recent years (Q1) and how consumer behavior regarding sending and receiving parcels has changed (Q2).

The data analysis comes from the enterprise production base³. The data was extracted with an SQL script and analyzed in Excel. To study the behavior of consumers related to sending and receiving parcels, data from the first six months of active PUDO points were compared.

Active points (from January to June)⁴:

- 2020 - 6735 PUDO points,
- 2021 - 9768 PUDO points,
- 2022 - 16015 PUDO points.

In order to determine information on trends related to the collection of parcels by consumers (the time of the day) and distance from PUDO points, the focus was on 2022.

Active points in 2022⁵:

- 2022 – 16457 PUDO points.

The results of the database analysis are presented in the infographic (see Fig. 2).

³ The limitation in the analysis is the number of PUDO points and a selected part of consumers who use the courier service.

⁴ It should be added that the exact number of active PUDO points is approximate due to the dynamics, volatility of the market and cooperation with partners.

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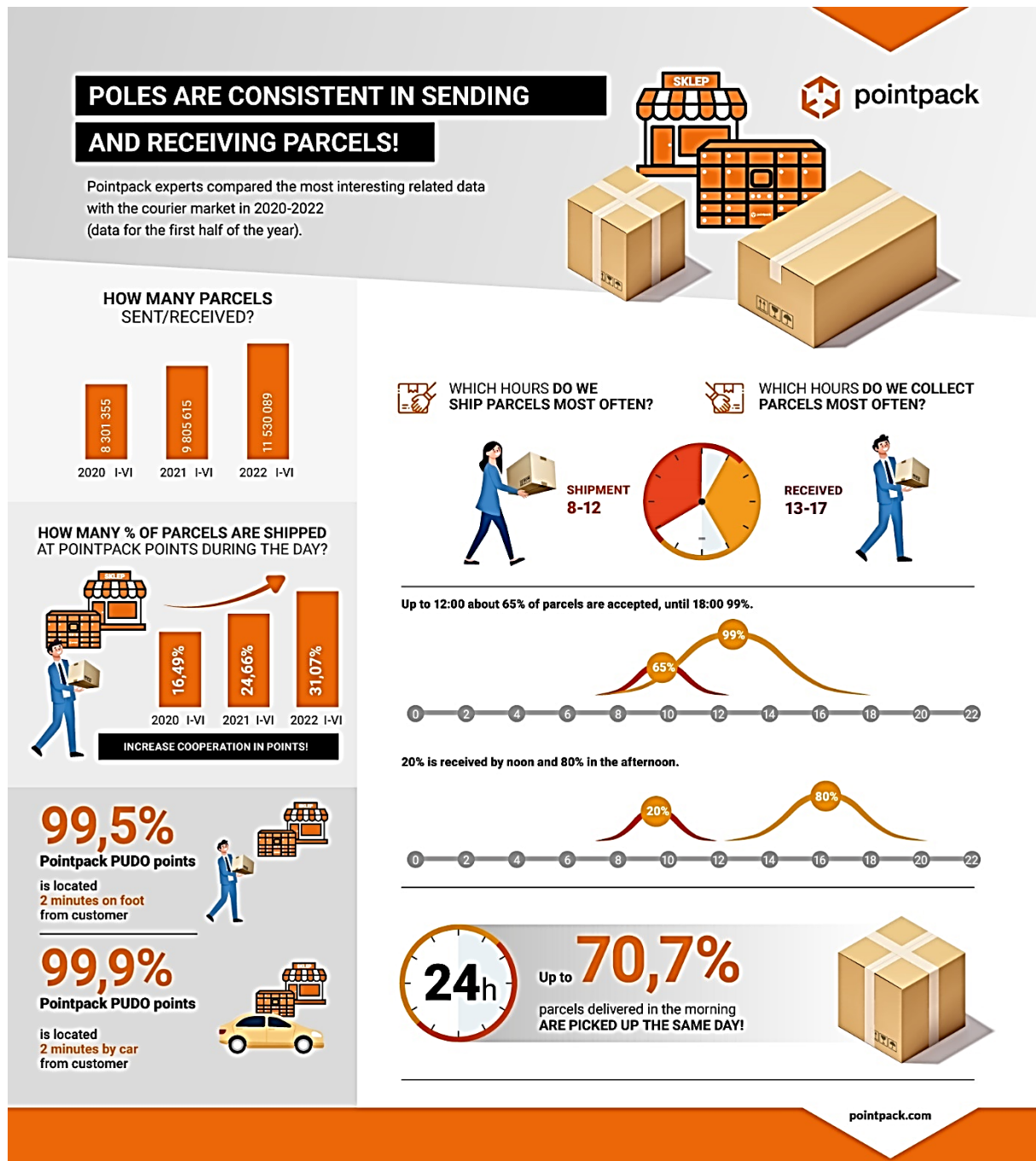


Figure 2. Consumer behavior: sending and receiving parcels.

Source: Pointpack own analyzes (internal data).

Based on the analysis of selected data (January to June in 2020, 2021, 2022), it can be observed that the number of parcels sent and received in stores is increasing. The value of the Polish postal services market is also confirmed by the report of the Office of Electronic Communications. According to it, in 2021 the value of the Polish postal services market reached approx. PLN 12.89 billion compared to PLN 11.6 billion in 2020. The volume of postal items also increased (*Report on the state of the postal market in 2021, 2022*). Almost all Pointpack PUDO points in 2022 were 2 minutes away from the customer, which confirms that the development process of the courier market is determined by the needs of individual recipients

(proximity and convenience). These results also show that Pointpack is consistently expanding its offer with new collection points, which customers can use for everyday shopping. It is also important from the perspective of a retail chain partner - with the increase in sending or receiving parcels, co-buying increases, which has a significant impact on the store's profit⁶.

Internal analysis also shows that most parcels are collected by customers on the same day after delivery to the point (70.7%), which is also the result of the increase in electronic sales, as in the previously cited „Research Gre Scale Study – 4th wave”. Due to the fact that Pointpack is the only company of this type in Poland that integrates retail chains and courier companies on such a large scale, the obtained data cannot be compared with other similar companies. Therefore, information on the behavior of consumers sending or collecting parcels at PUDO points at selected times of the day constitute internal analyzes of the company and may indicate a certain trend related to the collection of parcels during the hours of returning from work and doing shopping in stores on the occasion.

Summarizing the presented Pointpack data and market data, it should be noted that the growth trend of the company's development in recent years by entering into cooperation with new partners is related to the development of the e-commerce market (Q1). The dynamic development of the e-commerce sector has become one of the key purchasing channels for consumers and determines the growth of demand for this type of services. As experts from the „Polish CEP Report 2022” emphasize, the market for courier, express and postal items (CEP) in Poland has been recording uninterrupted, double-digit growth for several years, and its value has already exceeded PLN 17 billion. According to forecasts, in the years 2021-2023 it will maintain a double-digit growth rate both in terms of quantity (14.1%) and value (19.9%) (Last Mile Experts, 7R and the Cushman & Wakefield consulting agency, 2022). In the perspective of the presented data, the attitudes of consumers have changed significantly (Q2), because more courier parcels are sent and collected at PUDO points (despite the time of the pandemic), while doing shopping. Analyzes also show that e-consumers are increasingly adopting pro-ecological attitudes. The behavior and needs of consumers are also part of the ecological trend, because the deliveries of parcels to points or courier machines are part of the pro-ecological solutions (Dataplace, 2021), presented in more detail in the last part of the article.

⁶ Pointpack analyzes indicate about 30% of co-buying when sending and receiving parcels at PUDO points.

Discussion and Conclusion

According to the information from the scientific reports and opinions of specialists, as well as Pointpack's own analysis, in 2020-2022 there was a high growth rate of the e-commerce market. Today, it can be observed that the current rate of growth is no longer so rapid. After the pandemic, consumers started buying offline on a regular basis, and the current social problems (inflation) may discourage them from spending more money. However, according to the researchers in the report „Prospects for the development of the e-commerce market in Poland 2018-2027”, the declining economic situation on the Polish e-commerce market in 2022-2023 may be stimulated primarily by two factors:

- an influx of 2 million refugees from Ukraine, who can buy online on the Polish e-commerce market,
- a decrease in the purchasing power of money, which will make the Internet a source of lower prices for consumers (Strategy..., 2022).

Taking into account the data analysis, it should be noted that the e-commerce market is the sector of the economy that is in a development trend. The information obtained from the analysis of scientific sources and the Pointpack case study are both important for the development of science and useful in the societal perspective:

1. Key implications for science:

- thanks to the analysis of Pointpack data, it is possible to supplement the knowledge on the development of the courier, express and parcel (CEP) market, which contributes to the development of the e-commerce sector.
- due to the fact that Pointpack is the only enterprise of this type in Poland that integrates courier companies and retail chains on such a large scale, the obtained results cannot be compared with similar results, and they cannot be related to the general public. However, due to the state of knowledge of various experts on the development of the e-commerce market presented in the article, as well as the Pointpack data, it can be concluded that the development of the e-commerce market (despite times of uncertainty) is accelerating from year to year, which is also due to the change in consumers and their needs. Further research and analysis are needed in this area, which can provide more information on the customers' purchasing motivations and the development trends of the entire e-commerce sector.

2. Key implications for the economy:

- the presented data, as well as the opinions of specialists and researchers, indicate that the CEP market stimulates the growth of the e-commerce industry, and the implementation of the courier service at PUDO points is important for customers who use the option of sending and receiving parcels while shopping.

- PUDO points that implement courier services provide additional benefits for customers, and thus increase the prestige of the place and are competitive on the market, because the e-commerce industry is constantly developing.
- the implementation of the courier service provides three-way benefits: the customer can send or collect the parcel while shopping (co-buying is increasing), the owner of the point earns a commission for each parcel handled and the courier reduces the number of kilometers traveled (there is no need to deliver parcels to individual locations).
- the development of courier services at PUDO points is conducive to building pro-ecological attitudes among customers as well as business partners (corporate social responsibility).

The preferences of Polish consumers related to the delivery of parcels are also presented in the Gemius report. According to the analysis, offering various forms of delivery is motivating to shop online. Although the development network of PUDO points is constantly developing, only 17% of consumers indicated that the order was shipped to a partner point. Poles invariably prefer delivery to courier machines, which was indicated by 81% of respondents, and 43% choose delivery by courier to their home or workplace (Gemius, 2022).

When analyzing customer behavior and the direction of development of the e-commerce market, it is impossible to ignore the ecological aspects, which are increasingly important in the socio-economic space. Pointpack analytical data indicate that in such a model the achievable level of CO₂ emission reduction is even 30% in the last mile. For every million parcels, the length of the courier's route will be reduced by 82,000 km and the carbon footprint of each million shipments will be reduced by 13 tons of CO₂⁷. Environmental awareness among Poles is also indicated by research. According to the Center for Public Opinion Research, the majority of Poles (as many as 81%) believe that their own behavior and lifestyle have a significant impact on the condition of the natural environment. The ecological awareness of consumers is gradually growing and covers more areas of everyday life (CBOS, 2020).

In addition to the ecological area, other trends on the e-commerce market that are constantly developing can be identified, important from the customer's point of view:

1. M-COMMERCE

Mobile commerce is becoming an integral part of shopping. It is one of the most important shopping channels chosen by customers. mainstream as the preferred shopping channel. Technological solutions make shopping easier, and the popularization of shopping using mobile devices will encourage e-shop owners to build solutions that will provide customers with immediate and personalized shopping.

⁷ Pointpack own analyzes (internal data).

2. Q-COMMERCE

Consumers value the delivery of both parcels and purchases within a specified, fast time. The q-commerce trend assumes the delivery of e-shopping within several minutes after placing the order. So far, this solution has only worked in the e-grocery industry. However, in recent months it has also been seen that popular convenience stores or large grocery chains are expanding their online shopping offer with the q-commerce option. Retail chains often face the challenge of this trend, which also requires the involvement of mini-warehouses (dark stores) to speed up and streamline the sales process.

3. SOCIAL COMMERCE

This is one of the trends that also supports the development of other channels, such as social media. In social media, such as Facebook, Instagram or TikTok, sellers can also directly contact the customer through live commerce, and thus build real-time purchasing relationships (direct to consumer).

4. OMNICHANNEL

Omnichannel is a sales strategy that assumes that all available channels, as well as customer service, should work together to ensure the convenience of shopping in a commercial network and speed up the purchasing process. This strategy combines the experience of stationary, online sales and customer service (call center) to provide customers with convenience and the ability to choose a preferential shopping path (Chen, 2021; Bartosik-Purgat, 2019; Sala, Królewski, 2014).

The e-commerce market is changing along with changes in customer behavior, who are now entering the "post-pandemic customer" phase. This new type of consumer is primarily related to the need for new communication and strategic solutions. Enterprises and organizations, especially in times of uncertainty, should carefully observe the client and listen to his needs. In the area of the e-commerce market, accessibility, operational efficiency as well as rapid growth and profit (both on the part of the customer and the seller) are becoming more and more important. Offered products or services should be culturally up-to-date, adapted to new times and needs. As the analyzes have shown, the development of the e-commerce market is constantly growing, which is why it is necessary to conduct further research in this area, which will provide new knowledge about consumer behavior and directions of development of the socio-economic space, with particular emphasis on the development of enterprises through the implementation of new services.

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