

DEVELOPMENT OF THE E-COMMERCE MARKET IN UKRAINE IN THE CONTEXT OF MODERN CHALLENGES

Iryna Maksymenko¹, Andrii Akimov², Damir Bikulov³

Abstract. Over the past few decades, the use of e-commerce in business has increased significantly. More and more companies that used to focus exclusively on offline operations are beginning to consider e-commerce as a promising area of strategic development. As a result, studying the state of the e-commerce market in Ukraine, as well as trends and barriers to its development, will allow to develop an understanding of the peculiarities of the functioning and growth of business entities in the context of the Ukrainian online environment. In this regard, it is worth paying special attention to the study of the specifics of the development of the e-commerce market as a strategic recovery of the Ukrainian economy. The *subject* of the study is the process of development of the Ukrainian e-commerce market in the conditions of war. The *purpose* is to research and analyse the state of the e-commerce market in Ukraine in the context of growing instability caused by the war, as well as to identify key issues and trends in the development of the e-commerce system in an unstable and changing environment. The questions of this study require the use of a combination of general scientific and modern research methods, among which the most important are the method of system analysis (when studying the approaches and points of view of Ukrainian and Western scientists), economic and statistical analysis (to determine the trends in the development of e-commerce in Ukraine), analysis and synthesis (when studying the types and models of e-commerce), graphic analysis (to visualize a number of theoretical and practical provisions of the article). The article examines the state of the e-commerce market in Ukraine during the war. It finds that until 2022 there was a significant increase in the volume and growth rate of the e-commerce market. With the outbreak of the war, the market experienced a dramatic drop in volume, but from 2023 significant stabilisation processes took place. The importance of further development of the e-commerce market not only during the war, but also to overcome its consequences during the post-war recovery period is determined. **Conclusions.** Ukrainian e-commerce is experiencing high growth rates. The barriers to entering the online market are relatively low and the benefits of e-commerce for users and entrepreneurs are tangible. However, at the current stage, the Ukrainian e-commerce market has many unresolved issues that hinder its development. If the key issues are effectively addressed, the development of e-commerce in Ukraine will have a future.

Keywords: e-commerce, e-commerce market, retail, digitalisation, digital technologies.

JEL Classification: F01, F20, F29, F42, H56

1. Introduction

One of the most promising forms of product promotion during the global lockdown is the use of online resources. Although the COVID-19 pandemic has hit the global economy hard, Russia's war against Ukraine has proved that the pandemic was not the catastrophe it was imagined to be.

Over the past few decades, the use of e-commerce has increased significantly. More and more customers, who used to focus exclusively on offline functioning, are beginning to consider e-commerce as a promising area of strategic development. As a result, a study of the state of the Ukrainian e-commerce market, as well as trends and barriers to its development, will provide

¹ National University Zaporizhzhia Polytechnic, Ukraine (*corresponding author*)

E-mail: max.irinay@gmail.com

ORCID: <https://orcid.org/0000-0002-2362-6183>

ResearcherID: C-6530-2018

² Zaporizhzhia National University, Ukraine

E-mail: anticor1770@gmail.com

ORCID: <https://orcid.org/0009-0000-0445-7452>

ResearcherID: IUN-4291-2023

³ Zaporizhzhia National University, Ukraine

E-mail: elcoronelnotiene1974@gmail.com

ORCID: <https://orcid.org/0000-0001-9188-7310>

ResearcherID: KIB-8542-2024



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an idea of the peculiarities of the functioning and development of business entities in the context of the Ukrainian online environment.

Russia's full-scale military aggression has caused significant damage to the Ukrainian economy, manifested in a decline in the production of key products, a significant reduction in foreign trade, the destruction of transport, logistics, social and engineering infrastructure of entire regions, and an exodus of personnel abroad. The post-war accession of Ukraine to the EU's Digital Single Market could open new opportunities for the development of Ukrainian e-business, therefore there is a need to study issues related to assessing the state of e-commerce in Ukraine and finding ways to reform it.

E-commerce is a promising component of the national economy. All this makes it necessary to study the state of e-commerce as an integral part of the national economy. Taking into account the current conditions of economic functioning, it is also particularly important to determine the directions of e-commerce development in Ukraine.

A number of scientists have studied the theoretical, methodological and practical aspects of the organisation and development prospects of e-commerce in Ukraine. Theoretical aspects of the nature and content of e-commerce are studied by such scientists as O. Yatsenko, A. Hriazina, O. Shevchyk (Yatsenko, Hriazina, Shevchyk, 2019). The scientific school of scientists like M. Dubyna, O. Sheremet (Dubyna, Sheremet, 2019) studies the development of financial services in the e-business system. Concepts proposed by such scientists as Kolupaeva I., Bezsonov S. (Kolupaeva, Bezsonov, 2023), L. Berezovska, A. Kyrychenko (Berezovska, Kyrychenko, 2022), represent a study of the state of e-commerce and the identification of trends in its further development. The development of digital e-commerce is considered in the works of foreign scientists, such as Sun Hongbo, Li Xin, Liu Yi, Chai Yueting (Sun Hongbo, Li Xin, Liu Yi, Chai Yueting, 2016), Wu Pei-Ju, Lin Kun-Chen (Wu Pei-Ju, Lin Kun-Chen, 2018), Karazijiene Zaneta, Cernikovaite Migle Eleonora (Karazijiene Zaneta, Cernikovaite Migle Eleonora, 2022).

Identification of previously unresolved parts of the overall problem. E-commerce in Ukraine is currently facing a large number of unresolved problems that have arisen due to military aggression on its territory. All forecast values in the e-commerce sector generated before February 24, 2022, have now become irrelevant due to a large number of new challenges, including the loss of territories, outflow of human capital, destroyed infrastructure, and many others. Given the state of martial law in Ukraine and the uncertainty of the national economy, the issue of e-commerce as a promising component needs to be studied. Identifying current challenges and shaping

development directions is important to ensure the future competitiveness of the national economy.

Considering the relevance of this issue, the purpose of this study is to analyse e-commerce trends in Ukraine and identify ways of further development in the context of current challenges.

2. Economic Essence of the Development of the E-Commerce Market in Ukraine

The digitalisation of the economy is characterised by the introduction of digital technologies aimed at optimising and automating business processes, improving communication with consumers and increasing the efficiency of business activities. The use of information technology is becoming a prerequisite for ensuring the competitiveness of individual companies and organisations as well as of countries as a whole. The quality of goods and services is improving and production costs are decreasing, leading to increased competition between companies, which in turn leads to the restructuring of production and economic processes.

The development of e-commerce systems is radically transforming the Ukrainian market, causing significant changes both at the national level and at the level of individual business entities. According to O. Yatsenko (Yatsenko, 2019), "e-commerce is now becoming a catalyst of economic growth, an imperative for the transition of the national economy to a qualitatively new level of development", thereby emphasising the role of e-commerce in stimulating the development of the national economy, creating new opportunities for all participants in economic relations and ensuring their well-being.

In accordance with the Law of Ukraine "On Electronic Commerce", e-commerce is a relationship aimed at generating profit arising from transactions for the acquisition, modification or termination of civil rights and obligations carried out remotely using information and telecommunication systems, which result in the parties to such relationships having property rights and obligations.

E-commerce has a set of features, in particular:

- Digital technologies are becoming an intermediary between businesses and consumers, which simplifies interaction without the need for direct contact;
- the traditional mechanism of selling goods is changing;
- distribution of web-based platforms for implementing key business processes;
- changes in the behaviour of e-commerce entities.

In their works, I. Kolupaeva, S. Bezsonov (Kolupaeva, Bezsonov, 2023) argue that digitalisation contributes to the development of e-commerce in Ukraine, increasing the share of online sales, increasing the

profit of business entities and increasing customer satisfaction.

S. Kolyadenko (Kolyadenko, 2016) considers e-commerce, along with e-business, as a component of the digital economy. In his work, the author notes that the digital economy is based on the production of electronic goods and services by high-tech business structures and the distribution of these products through e-commerce.

The authors of this study have formed their own definition of e-commerce and propose that e-commerce is understood as relations arising in the course of conducting business activities, providing services for profit, in the field of electronic purchase and sale of goods remotely through information and communication systems.

Hence, e-commerce is one of the key drivers of world trade development in the modern global economy. Among the means contributing to the competitiveness of international business units, the formation of global value chains, the expansion of clusters and integration into the virtual environment are at the forefront. In assessing the latter trend, it should be noted that the role of electronic platforms for the exchange of goods and services is constantly growing. In today's market economy, the main task is not to optimise trade relations, but to strategically increase the efficiency of a country through the use of electronic technologies.

Russia's full-scale military aggression has caused significant damage to Ukraine's economy, manifested in a decline in the production of key products, a significant reduction in foreign trade, the destruction of transport, logistics, social and engineering infrastructure in entire regions, and the outflow of personnel abroad. The accession of Ukraine to the EU's

Digital Single Market in the post-war period could open new opportunities for the development of Ukrainian e-commerce, so there is a need to study issues related to assessing the state of e-commerce in Ukraine and finding ways to reform it.

3. Analysis of the Development of the E-Commerce Market in Ukraine in the Context of Instability Caused by the War

The war with the aggressor country has become a huge challenge for the society and economy. The full-scale invasion has affected all aspects of Ukrainian life. And business, including e-commerce, is no exception.

Despite the difficult circumstances, many business segments managed to achieve record results in 2023. E-commerce in Ukraine has not just taken off – for the second year in a row, on the eve of the war, an important trend has been observed: online growth rates are twice as high as offline.

The e-commerce market has almost tripled since 2016, and analysts predict that it will double in the coming years.

The outbreak of the war proved to be a challenge for the e-commerce market. As of February 22, 2023, the average market level of store visits fell by 82.7%, while revenue fell by an average of 92%. In February-March 2022, there was a downward trend in revenue per customer. Although there are some positive forecasts for the recovery of market incomes in 2023, at 52% compared to the pre-war period, it is expected that by the end of 2027 the level of incomes will only be able to exceed the indicators of 2020 (Figure 2).

As of 2023, the share of e-commerce is 11%, which indicates that the market continues to grow.

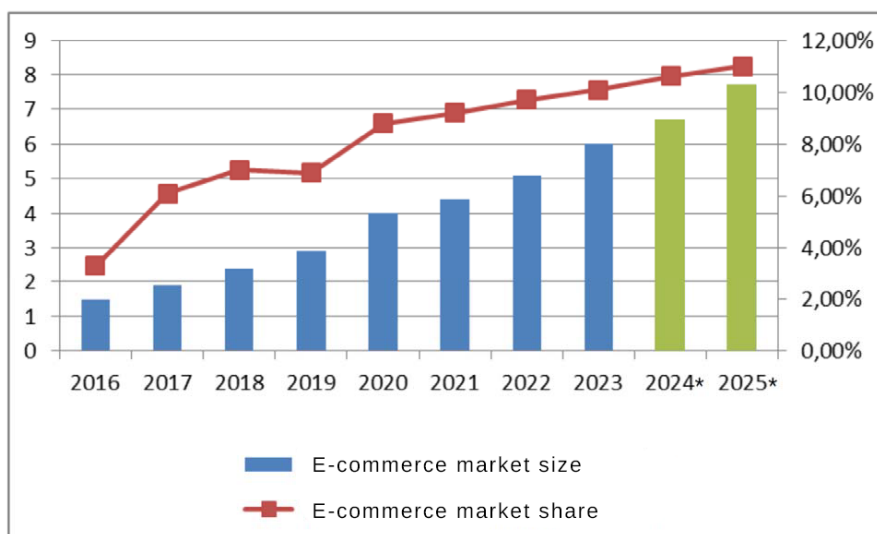


Figure 1. E-commerce market dynamics and its share in retail trade

Source: Statista

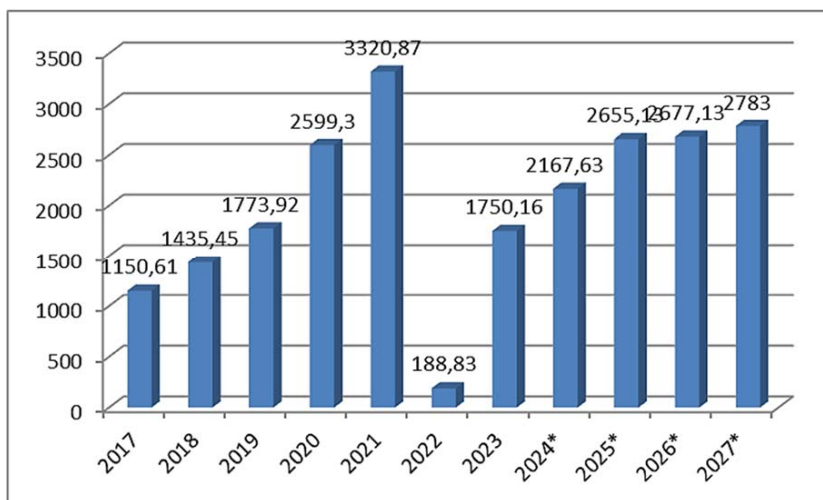


Figure 2. Revenue of the e-commerce market in Ukraine in 2017-2027, million USD

Source: Statista

As noted by L. Berezovska and A. Kyrychenko (Berezovska, Kyrychenko, 2022), "e-commerce experienced first a shock drop, then a surge in demand for certain categories of goods, and finally some stabilisation after the mass movement of people, relocation of warehouses and production facilities". A certain level of market stabilisation was achieved at the expense of those categories of goods where consumers experienced the greatest shortages.

Currently, the share of e-commerce is 11%, and this figure is growing. If the trend continues, Ukraine could reach the level of Sweden, Finland and Canada. But compared to countries where e-commerce is more developed, the share is 46% in China, 36% in the UK, and 32.3% in South Korea. In 2023, the average check for online purchases will amount to 1172 UAH, with a growth rate of +38%.

Consumer spending habits in Ukraine have changed dramatically due to the war. According to the World Bank, Ukraine's GDP shrank by 29.1% in 2023. This led to higher prices, lower incomes, and higher

unemployment. Consumers have changed their values, needs, and expectations of brands, becoming more economical and cautious. They are buying fewer goods and switching to products from more affordable brands.

The authors have identified several key factors that influence the behaviour of Ukrainian consumers and should be taken into account when building a business strategy for e-commerce companies:

Availability of goods and services. Consumers want to easily find and buy the things they need, especially those that meet their daily needs. Therefore, it is important that stores and online resources have a wide range of products, regularly update their positions and offer convenient ways to find and purchase the right product.

Ease of communication. Consumers expect quick communication with the seller, the opportunity to get advice and ask questions. It is also important to have clear, accessible information about products and services.

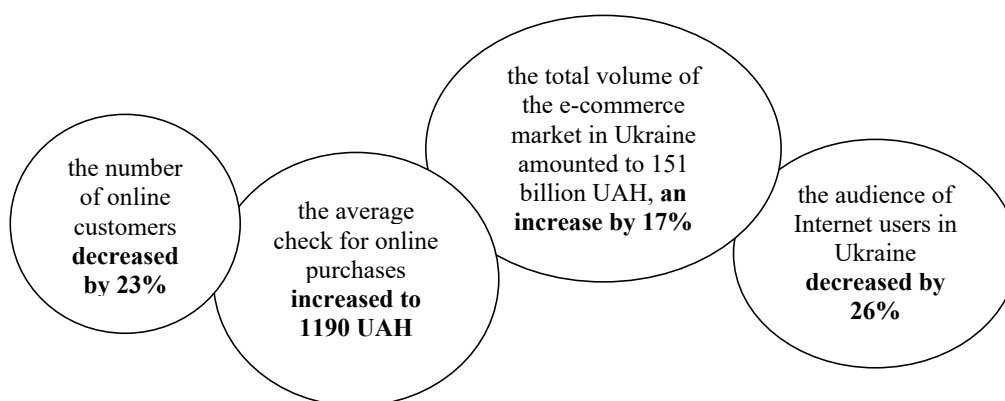


Figure 3. State of the e-commerce market in Ukraine in 2022

Source: compiled by authors

Speed and convenience of delivery. Ukrainians value prompt delivery of goods and the ability to track orders. Companies offering fast and reliable logistics have a competitive advantage.

The Ukrainian e-commerce market is based on 5 main industries, including:

- Food and personal care products are the largest market, accounting for 35.7% of Ukrainian e-commerce revenues;
- electronics and media market (25.8%);
- fashion (19,9%);
- furniture and household appliances (11,1%);
- toys, hobbies and the niche DIY market accounted for 7.6% of the total market.

Due to significant changes in the consumer structure, it can be argued that demand for certain categories of goods may decline, e.g., in the context of electronics and household appliances, which tend to be big-ticket items whose cost is significant and dependent on the exchange rate, while the market for construction materials tends to grow. In general, there will be a tendency to increase the popularity of essential goods, for which consumers have a primary need, as opposed to high-priced goods, for which consumers tend to save without sufficient confidence in the future. An important trend that will allow the development and establishment of a more mature e-commerce market in Ukraine is the growing trend of the online market.

In recent years, more and more companies have been considering e-commerce as a promising area for their business development. This trend is driven by the spread of COVID-19, which has significantly

limited physical retail operations and led to a decline in offline sales, which can be partially offset by online presence tools, including marketplaces, social media and online stores. As a result, businesses will increasingly see an increase in the number of online competitors in the market, which will generally increase the level of pressure from competitors and force businesses to look for alternative ways to remain competitive.

Since February 24, 2022, as the Russian-Ukrainian war has spread to the entire territory of Ukraine, preparations for Ukraine's accession to the EU have accelerated. Therefore, it is now necessary to align the Ukrainian e-commerce sector with the European one. European e-commerce companies are developing quite dynamically, so over the past ten years the European Union has seen quite significant changes in the legislation governing e-commerce.

In the EU, mandatory information on websites should include the criteria by which goods are selected for sale, their price and the dynamics of their changes. All buyers should have the same level of rights and this should not be affected by the location of the seller or the buyer. In other words, there should be no geo-blocking and free access to the services of the online shop. In Ukraine, the provision of digital services is not regulated, whereas in the EU such regulation takes place at state level. In addition, in the EU, all sales of goods in online shops should be taxed at destination, with the obligation to apply VAT in the customer's country from the moment cross-border B2C sales exceed 10,000 EUR. The EU also has a "One Stop Shop" (OSS) reporting system for declaring

Table 1

Matrix for the development of Ukrainian e-commerce in the context of cooperation with the EU

Index	E-commerce in 2021	E-commerce in 2030
Digital infrastructures and skills	Low coverage and speed of mobile and fixed internet, as well as poor interoperability of state registers. Low level of basic digital skills.	Coverage by new high-speed communication standards. The technological platform of state registers is in operation. High level of basic and professional digital skills.
ICT	IT education that does not meet business needs. Weak IT sector ecosystem Unfavourable legal and tax regimes Low level of intellectual property protection.	IT faculties have English-language programmes and attract students from all over Europe Ukraine is a European laboratory and platform for the development of new technologies (FinTech, AgriTech, drones, self-driving cars, IoT networks, AI, digital currencies).
Digital transformation of economic sectors and areas of life	5% of public services are available online. Poor quality of statistics, lack of common standards. There is no strategy and standards for the development of Industry 4.0. Legislation does not regulate digital jobs.	Universal digital services are present in key areas of life (education, healthcare, etc.). Industries and businesses are modernising, building high-tech facilities and producing high value-added products. New industries and new professions are creating new prospects for economic growth.
Integration into the EU digital space	There is no cross-border electronic identification. Digital legislation is not harmonised with European legislation. Digital rights of citizens are not regulated.	Digital identification and trust services are harmonised with the EU. Full interoperability of Ukrainian registers. Ethical issues of biotechnology, personal data and cyber technologies are regulated.

Source: compiled by authors based on data from (*The Law of Ukraine "On Electronic Commerce"*)

all cross-border B2C sales through a tax portal in a single Member State. Ukraine has not yet aligned its legislation with the EU in these areas, so many Ukrainian e-commerce businesses operate in the shadows and pose a risk to consumers.

If the above is changed to bring the Ukrainian e-commerce sector in line with the European one, Ukraine could dramatically change the state of affairs in this area by 2030, as Ukrainian e-commerce has already been boosted by the COVID-19 pandemic and is already showing the highest growth rates compared to Eastern European countries.

Thus, the development of the e-commerce market in Ukraine is growing rapidly despite all the obstacles. Provided that the most important issues are effectively addressed, the development of the e-commerce market in Ukraine has high chances of growth.

4. Ways to Develop E-Commerce in Ukraine in the Context of Digitalisation

The development of the e-commerce market in Ukraine requires a global, integrated, market- and customer-oriented approach to develop an intelligent network for cross-border e-commerce. In this regard, the authors propose a mechanism aimed at supporting three components, namely operational, digital

and payment readiness: operational readiness for e-commerce; digital readiness for e-commerce; and payment readiness for e-commerce (Table 2).

The ultimate goal of the e-commerce readiness implementation is to provide online merchants with the right delivery infrastructure to grow their business. The framework creates a comprehensive cross-border e-commerce ecosystem, delivered through physical e-commerce hubs that interact with online e-commerce platforms through a set of innovative standards and tools.

Through the measures included in these core components, the framework helps to deliver a reliable, traceable and affordable comprehensive product portfolio that meets the needs of customers and online merchants and is achievement-oriented (Figure 4).

Digitalisation is changing the delivery channels and buying behaviour of online customers. These innovations bring significant changes to strategic objectives, requiring them to improve their predictive capabilities, transparency, security and efficiency to meet new customer needs. In this context, capacity building and technical assistance are proposed to coordinate and enhance digital capabilities and functionality in the implementation of key e-commerce tools.

Table 2

Components of e-commerce

Components of e-commerce	Essence of e-commerce	Main directions
Operational readiness for e-commerce	Modernisation of processes and use of all available standard tools to implement operational solutions that meet e-commerce requirements	Transparency Reliability Supply chain integration
Digital readiness for e-commerce	Enhancing digital capabilities and using all available tools to implement e-commerce-compatible digital solutions	Digital strategy Cybersecurity
Payment readiness for e-commerce	Expansion of payment capabilities and use of all available tools/services to implement electronic payment solutions compatible with e-commerce	Improving the electronic payment system Strategy for the development of electronic payments

Source: compiled by authors based on data from (*The Law of Ukraine "On Electronic Commerce"*)

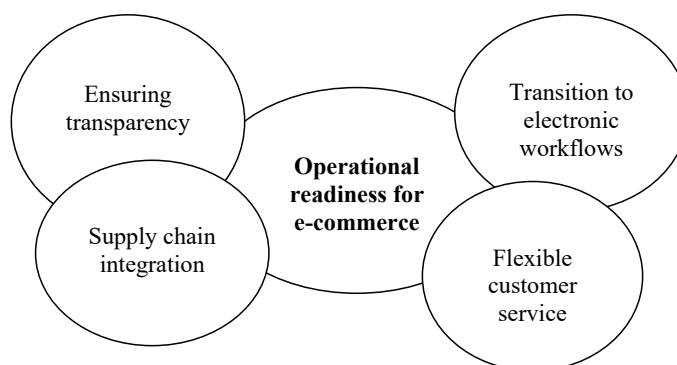


Figure 4. Key components of e-commerce operational readiness

Source: compiled by authors

Digital e-commerce readiness aims to create a cross-border, interconnected e-commerce system delivered through digital marketing, sales and web hosting and interoperable with online e-commerce platforms in accordance with a set of innovative standards and IT tools. The project and action-based approach will support the implementation of a reliable, traceable and affordable comprehensive portfolio of BBC products that meet the needs of customers and online merchants.

The objectives of digital readiness for e-commerce are to create a payment portal/platform that is up-to-

date and connected to online e-commerce platforms through a set of innovative standards and IT tools. Based on the actions included in the key elements, the software will be supported to implement a reliable and affordable comprehensive payment portfolio for the BBC that meets the needs of customers and online merchants (Figure 6).

Given the highly developed and competitive national and international online commercial markets, there is added value for software in providing trusted services to local shoppers making online purchases. In addition, local payment methods such as invoice

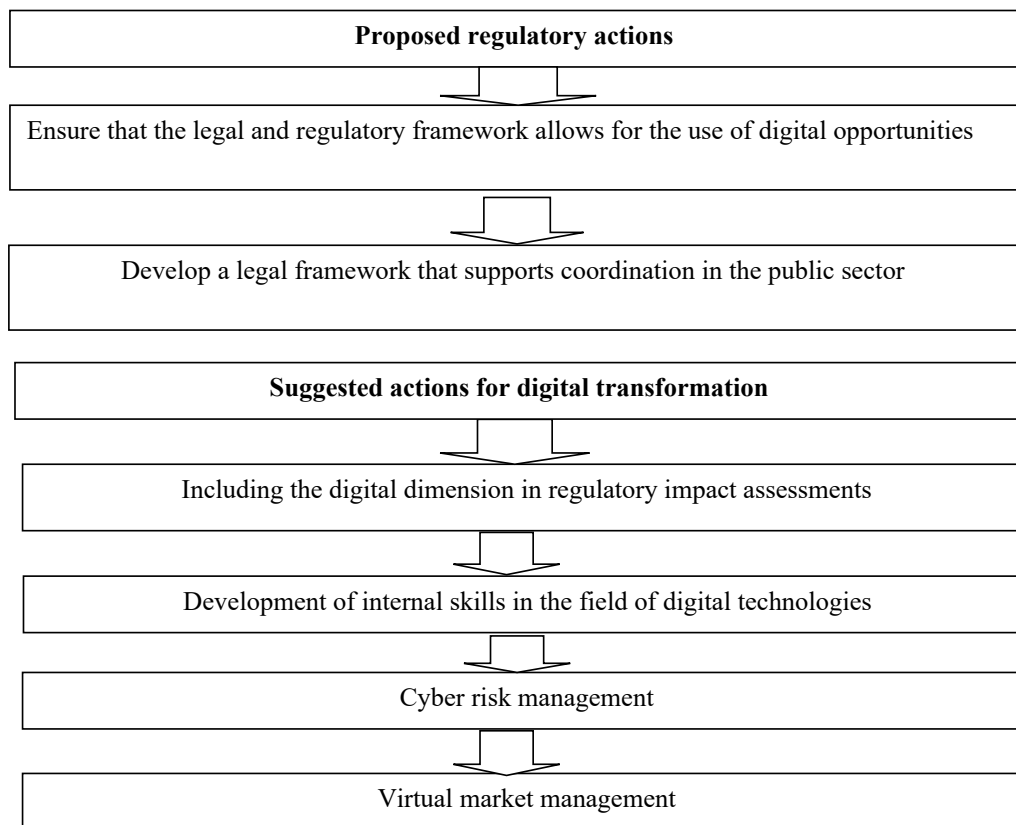


Figure 5. Key actions in the digital readiness system for e-commerce

Source: compiled by authors

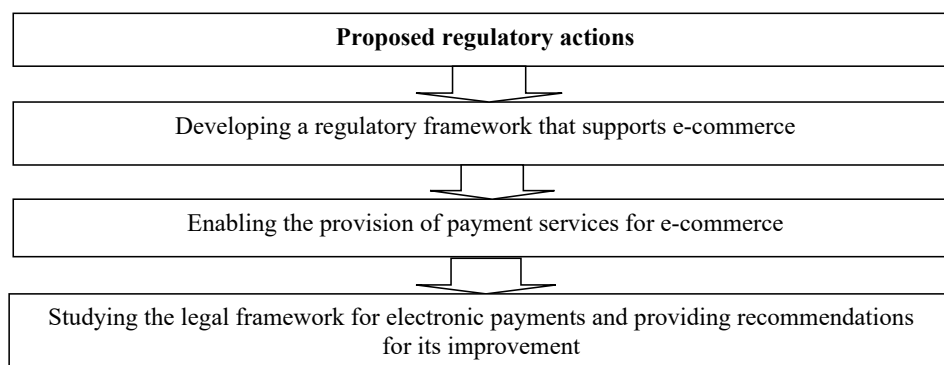


Figure 6. Key actions in the e-commerce payment readiness system

Source: compiled by authors

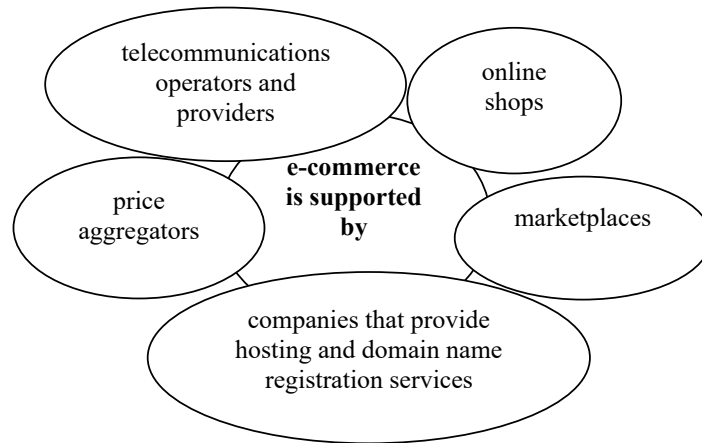


Figure 7. Key components of the e-commerce market

Source: compiled by authors

and cash on delivery are cost effective solutions that provide shoppers with a high level of protection. The ownership or location of an e-commerce site therefore plays an extremely important role in determining the level of customer trust.

The traditional business model is one of promotion. As the situation changes, this means that new ways of doing business must be effectively used to take full advantage of the growth of e-commerce. Once the e-commerce engagement model has been determined, the target group must be identified. Based on the target group, one need to define the customer dossier: geographic location, needs, types of products desired, features and limitations.

The proposed model is important to have a clear understanding of how competitors operate and what opportunities and competitive advantages the post

office has, as well as to determine the market situation (leader, follower, additional or niche market). The identified market situation will be the basis for choosing a business model (Figure 8).

E-commerce encompasses any form of economic activity conducted over the Internet, including the promotion, sale and distribution of products. To better understand and identify the opportunities available to postal services, it is necessary to consider the main components of e-commerce in a more structured and detailed way, in the form of a business model.

Thus, the proposals for improving the components of e-commerce developed in this article are a promising area that should be used to develop the country's digitalisation, which will be especially relevant in the period of post-war recovery. E-commerce

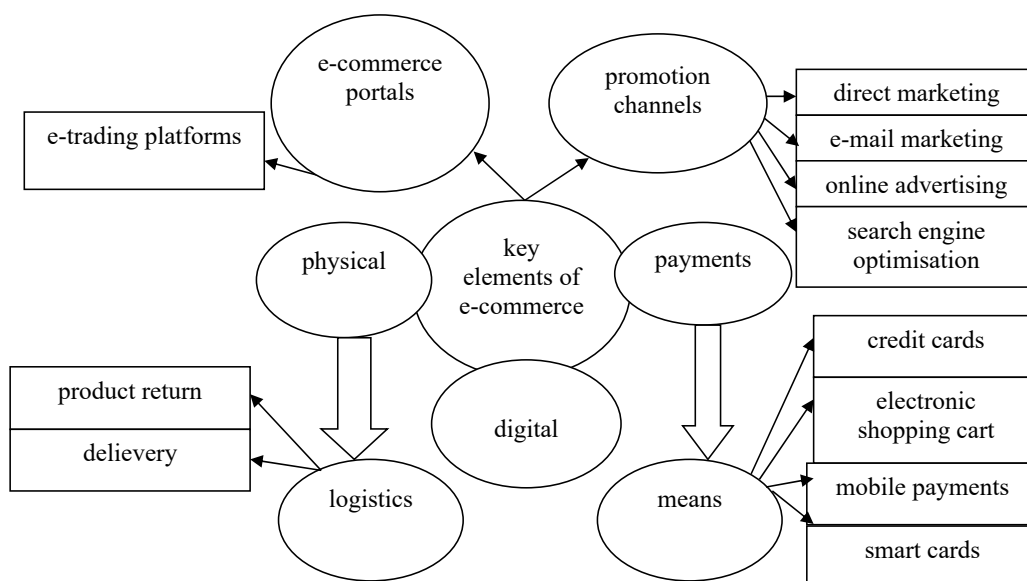


Figure 8. Model of e-commerce components

Source: compiled by authors

allows businesses not only to reduce costs, but also to create new business models to provide consumers with new value.

5. Discussion

Thus, according to the results of the study, it should be noted that the conditions for the development of e-commerce in Ukraine depend on a number of factors that need to be taken into account, both those that facilitate its development and those that "slow down" its implementation.

In addition, the main barriers to the development of the e-commerce market include:

- Problems with consumer safety and trust. Consumer confidence in online shopping may be reduced due to cybersecurity issues, increased online fraud and insufficient data protection during online transactions;
- insufficient level of infrastructure development, as well as its partial damage and destruction as a result of hostilities;
- decrease in consumer purchasing power;
- insufficient funds that can be invested in maintaining the stability of the enterprise;
- significant costs for using marketing tools to promote the company in the online environment;
- unworked consumer return policy;
- problems with consumer protection;
- reduction in service delivery.

One of the trends that will continue to gain momentum in the Ukrainian market is the increase in social responsibility of businesses. Despite a number of obstacles, the e-commerce market continues to stabilise and grow.

6. Conclusions

The conducted research helped to form the authors' understanding of the concept under study: e-commerce is a relationship that develops in the course of economic activity, provision of services for profit, in the field of electronic purchase and sale of goods remotely through information and communication systems.

The study shows that the uncertainty of the external environment caused by the military actions has caused a shock to the e-commerce market in Ukraine. It was found that until 2022, there was a significant increase in the volume and growth rate of the e-commerce market. With the outbreak of the war, the market experienced a shock drop in volumes, but as of 2023, stabilisation processes are noticeable. As a result, changes in consumer behaviour and the behaviour of business entities are noticeable, which increases competition for consumer attention. E-commerce revenues are forecast to show an upward trend starting in 2023, but will not reach pre-war levels over the next 5 years. In recent years, more and more businesses have been considering e-commerce as a promising area for the development of their business, driven by the growth of the online market.

It can be stated that the development of e-commerce during the military operations in Ukraine indicates that the war has imposed certain restrictions on the development of e-business, but in authors' opinion, in such circumstances, it is necessary to focus primarily on achieving short-term goals. It is necessary to identify ways to build effective marketing strategies, in particular:

1. At the micro level: to monitor the market; to save money on developing creative strategies and producing glossy content where possible and reallocate budgets directly to advertising; and to optimise costs.
2. At the macro level: to develop a state regulatory policy in this area in order to overcome barriers and obstacles to cross-border e-commerce, taking into account new challenges, and to create a single state body in the field of e-commerce.

Thus, despite the fact that Russia's full-scale military aggression has caused significant damage to Ukraine's economy, e-commerce can become one of the most powerful segments of the national economy, provided that the Ukrainian consumer market is economically stimulated and customers from other EU countries are attracted after joining the EU's Digital Single Market.

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