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THE ROLE OF DIGITAL TECHNOLOGIES IN MODERN TRADE: A STUDY OF GLOBAL TRENDS AND PROSPECTS FOR UKRAINE

РОЛЬ ЦИФРОВИХ ТЕХНОЛОГІЙ У СУЧАСНІЙ ТОРГІВЛІ: ДОСЛІДЖЕННЯ ГЛОБАЛЬНИХ ТЕНДЕНЦІЙ І ПЕРСПЕКТИВ ДЛЯ УКРАЇНИ

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Vorobiova V.V., Krupskiy O.P., Stasiuk Yu.M. Роль цифрових технологій у сучасній торгівлі: дослідження глобальних тенденцій і перспектив для України. Науково-методична стаття.

Цифрові технології стають необхідним інструментом у сучасній торгівлі, сприяючи її розвитку та зміні. Ця стаття розглядає глобальні тенденції у використанні цифрових технологій у торгівлі та їх потенційний вплив на український ринок. Дослідження показують, що електронна комерція, мобільний торговельний досвід, розумні технології та аналітика даних є ключовими напрямками, які впливають на споживачів та бізнес-процеси. Автори статті аналізують вплив цифрових технологій на споживачів, вказуючи на зростання електронної комерції та зручності онлайн-покупок. Розумні технології, такі як розпізнавання обличчя, чат-боти та віртуальна реальність, стають все більш поширеними у торговельних процесах. Автори обговорюють потенційні переваги використання цифрових технологій для українського ринку та вказують на необхідність адаптації та впровадження цих інновацій.

Ключові слова: цифрові технології, електронна торгівля, перспективи, цифровізація торгівлі, штучний інтелект

Vorobiova V.V., Krupskiy O.P., Stasiuk Yu.M. The Role of Digital Technologies in Modern Trade: a Study of Global Trends and Prospects for Ukraine. Scientific and methodical article.

Digital technologies are becoming an essential tool in modern trade, contributing to its development and change. This article examines global trends in using digital technologies in trade and their potential impact on the Ukrainian market. The research shows that e-commerce, mobile shopping experience, smart technologies, and data analytics are key areas that affect consumers and business processes. The authors of the article analyze the impact of digital technologies on consumers, pointing to the growth of e-commerce and the convenience of online shopping. Smart technologies such as facial recognition, chatbots, and virtual reality are becoming increasingly common in trade processes. The authors discuss the potential benefits of digital technologies for the Ukrainian market and point out the need to adapt and implement these innovations.

Keywords: digital technologies, e-commerce, prospects, trade digitalization, artificial intelligence

Digital technologies development was due, in particular, to the growth of Internet availability, the increase in the amount of data that can be stored and processed, and the spread of mobile devices [11, 28]. These technologies contribute to faster and more efficient information exchange between people; allow companies to use data and automate production and supply processes, which helps reduce costs and increase product quality [27].

Digital technologies are becoming one of the most important factors in global economic development. In this regard, questions arise more and more often about how exactly they affect trade development, as well as what prospects open up for Ukraine in this context. However, the unconscious use of digital technologies can have negative consequences for trading enterprises, which adds importance to the study of the impact of digital technologies on trade.

The first steps in trade digitalization can be traced back to the emergence of the first electronic cash registers in the 1970s. However, with the spread of the Internet and the rise in popularity of online shopping in the 1990s, commerce digitalization received a significant boost. Since then, digital technology has developed rapidly, allowing retail companies to implement new tools and solutions: electronic payments, online catalogues, loyalty programmes, digital marketing and data analytics. Digital technologies development significantly changes the

ways of conducting trade and promotes the emergence of new forms and directions. E-commerce [31] is becoming more and more widespread, which combines various forms of trade and opens new convenient opportunities for entrepreneurs and consumers' cooperation. These days, digital technologies are increasing their impact on commerce and promoting its development in various areas: from traditional stores to online stores, from B2C to B2B segments, and from small businesses to corporations

In Ukraine, trade is actively moving to an online format, which creates new opportunities for business and consumers (the number of users in the e-commerce market is expected to reach 24.84 million by 2027 [17]). However, most Ukrainian companies, especially small and medium-sized businesses, still have limited knowledge and experience in the field of digital technologies, which hinders the effective development of trade in Ukraine, taking into account modern realities. In order to more effectively implement digital technologies in trade, national entrepreneurs should take into account global trends and use foreign experience.

Analysis of recent researches and publications

The information and communication technologies development contributed to the emergence of the term "digital economy", which was first introduced by Don Tapscott in 1994. After the publication of his book "The Digital Economy. Promise and Peril in the Age of Networked Intelligence," the following definition was clearly formulated: the digital economy is an economic activity that, unlike the traditional economy, is determined by network consciousness and dependence on virtual technologies [39]. The main features of the new society, the emergence of which was caused by digital technologies development, include knowledge orientation [36], digital representation of objects [7] and territories [8], production virtualization [22] and the artificial intelligence involvement [1], innovative nature of technological processes [18] and business processes [30], integration and convergence of systems of all levels [32], intermediaries elimination [21] and simplification of the "producer-consumer" chain [34], dynamism [10] and communications globalization [9].

According to A. Barska and Yu. Voytsekhovska-Solis, now e-commerce plays the role of not only a means of finding new sales markets but also provides new ways of production, redistribution, and sale of goods and services, which makes it an increasingly significant share in the national and world economy [12].

Digital technologies are becoming increasingly sophisticated and deeply integrated into all economic processes, which leads to the society and the economy transformation as a whole [14]. Despite the large number of scientific studies on the digital economy development and its impact on modern trade, not enough attention has been paid to determining the role of digital technologies in domestic trade and the prospects for this industry development for Ukraine, taking into account the changes that the economy undergoes under the influence of digitalization.

The aim of the article is to study the impact of digital technologies on trade, as well as to analyze the prospects of their use for enterprises in Ukraine.

The main part

The digital economy development brings significant changes to the course of business processes. The digital economy is considered a new type of economy or a model of economic development that combines the features of the innovation economy and the knowledge economy [6]. Several main segments of the digital economy can be identified:

- the sector of information and communication technologies, the electronic business infrastructure (e-business infrastructure), which combines networks, software, computers, etc.;
- digital production and electronic business, including industry (business organization processes using computer networks);
- e-commerce (retail sales of goods on the Internet) [6].

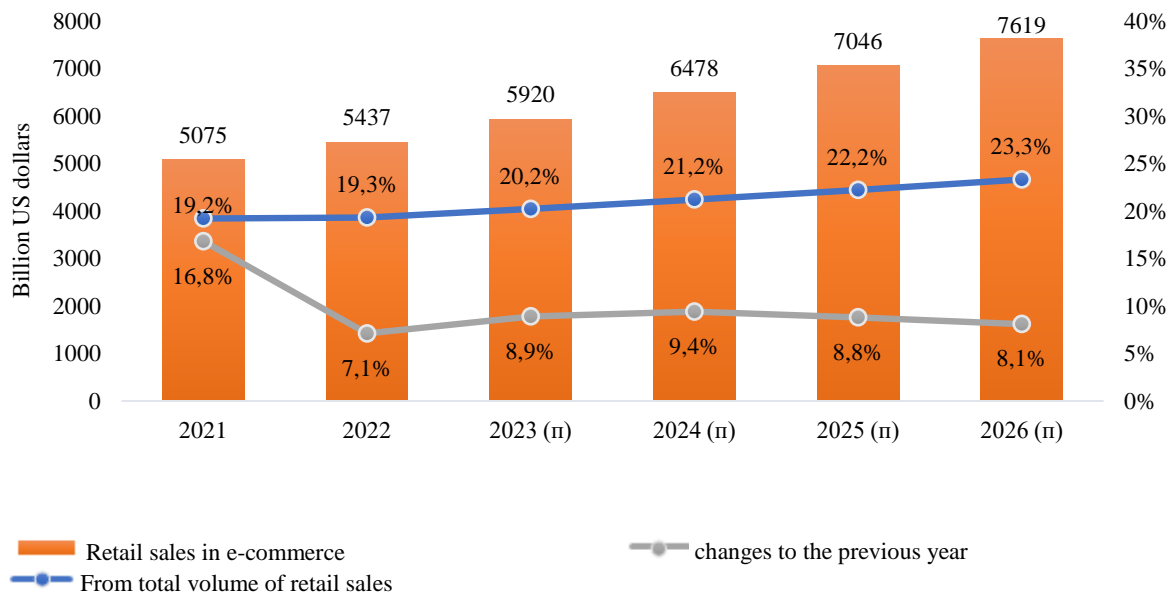
According to V. Mekedon and his colleagues [26], the world is currently experiencing another industrial revolution, which is determined by the emergence of the digital economy, which is a consequence of the digital technologies development and globalization processes acceleration. The global digital economy is growing at a rapid pace and is constantly evolving. According to forecasts of the Boston Consulting Group, the volume of the digital economy may reach 16.1 trillion US dollars by 2030 [38]. The challenges faced by the economy as a result of the COVID-19 pandemic have influenced the pace of acceleration of its digitalization. In the modern world, digital transformations can be considered the main criteria of economic development [3]. The crisis triggered a powerful wave of innovation and launched a new generation of entrepreneurs. During the COVID-19 crisis, the greatest growth was observed precisely in the field of digitization, which combines many areas from online customer service to remote work, rethinking the supply chain, and the use of artificial intelligence (AI) and machine learning to facilitate many operations [35].

The pandemic became a catalyst for digitalization of both the global economy and the national economies of individual countries [42]. Applying the quarantine restrictions during the COVID-19 pandemic caused an increase in the number of online purchases and an increase in the level of use of social networks. This, in turn, led to a sharp increase in sales to end consumers (B2C) and an increase in business-to-business (B2B) e-commerce.

During the pandemic, the need to develop appropriate measures to support the economy and implement effective strategies for conducting trade in new conditions increased. Countries whose governments responded in time to the challenges and prioritized e-commerce development suffered less damage due to the pandemic. The

consequences of introducing the quarantine restrictions provoked consumer shock and affected the structure of demand. Due to this, the share of digital services and online trade consumption has increased. The COVID-19 pandemic has triggered the digitalization acceleration and an increase in the volume of e-commerce in the trade sector.

In recent years, e-commerce has become an integral part of global retail (Figure 1). In 2021, online retail market share was 19.2% (ie, for every 100 US dollars spent by consumers, 19.2 US dollars were spent online). In 2022, this figure increased to 19.3%, and amounted to 5.4 trillion US dollars. Analysts predict that the share of global e-commerce in retail sales will continue to grow and will reach 23.3% by 2026 [43]. Like most other sectors of the economy, commerce has undergone significant changes with the advent and development of the Internet, and due to accelerated digitalization, consumers around the world are able to enjoy the benefits of online transactions. The number of people making purchases online is constantly increasing due to the increase in the share of Internet users in the world. As of April 2023, there were 5.18 billion Internet users worldwide, which is 64.6% of the global population, of which 4.8 billion US dollars, or 59.9% of the global population, were users of social networks [16]. It can be argued that the most significant world market is currently on the Internet [20]. Consumers and entrepreneurs increasingly prefer online shopping over traditional shopping, as it saves money, time, and energy, and makes it possible to satisfy mutual interests as conveniently as possible.



Notes: it includes goods or services ordered over the Internet, notwithstanding the method of payment or fulfillment; it does not include travel and event tickets, payments such as bill payments, taxes or money orders, restaurant sales, catering, gambling or other sales

Figure 1. Global E-Commerce Retail Sales in 2021-2026
Source: compiled by authors on materials [43]

According to the latest industry estimates, Brazil will take first place among the 20 countries in the world for retail e-commerce development in 2023-2027 with a compound annual growth rate of 14.6% [1]. Argentina and Turkey are also among the fastest growing e-commerce markets in the world with an average annual growth rate of over 14%. The average annual growth rate of global retail e-commerce over the same period is estimated at 11.3% (Figure 2).

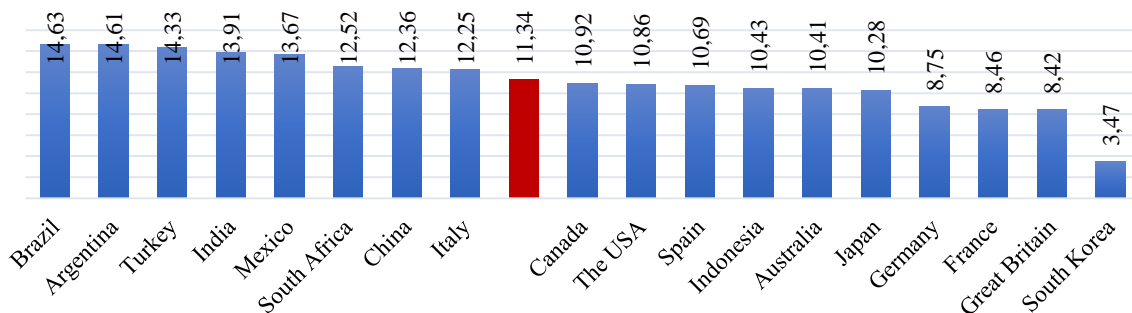


Figure 2. E-Commerce Retail Sales Compound Annual Growth Rate (CAGR) from 2023 to 2027 by the Country
Source: compiled by authors on materials [43]

Digital transformation covers most sectors of the economy, and retail trade is no exception. As today's customers expect a more personalized approach and greater convenience, digital transformation in retail has become necessary for companies to remain competitive in the market. By applying new technologies such as artificial intelligence and data analytics, retailers can use them to improve interactions with customers and optimize any operations. Digital literacy is becoming an integral part of the professional culture of modern management [1]. Nowadays, there are still challenges associated with the implementation of software solutions in commerce, covering the process of direct implementation and security issues.

Digital transformation in retail aims to use digital technologies to create new or change existing business processes, customer experiences and organizational structures. The aim of digital transformation in the field of retail trade is to provide customers with enhanced opportunities to make purchases, as well as to increase the trade activities profitability. In order to achieve this, businesses must implement a range of digital tools such as e-commerce platforms, mobile apps, artificial intelligence and machine learning, analytics software, cloud computing services, and much more.

Using artificial intelligence technologies, blockchain and other innovative solutions opens up new opportunities for conducting trade and ensuring improvement in the quality and efficiency of processes. Artificial intelligence is increasingly being used in various aspects of commerce. Its algorithms can be used to analyze supply and demand data, predict market trends, enable more accurate inventory planning, and track consumer behaviour.

Blockchain technology also has great potential for wide application in trade. Blockchain is a secure distributed ledger that allows transactions to be stored and processed without intermediaries. This technology application will make it possible to reduce the costs of payment operations, simplify the delivery process and ensure the security of transactions.

Other innovative technologies such as the Internet of Things (IoT), virtual reality (VR) and augmented reality (AR) also have the potential to be used in commerce. For example, IoT can enable the data collection on demand for goods and the prediction of market price changes, and VR and AR can be used to create virtual stores and virtual spaces, which will provide a more realistic and interactive experience for consumers

Every year there is an increase in the degree of commercial use of the Internet, which becomes an integral part of the business life of everyone who wants to build a successful business [13]. In modern conditions, introducing information and communication technologies contributes to the economy development as a whole, in particular trade. Most trade enterprises are moving to the electronic market, focusing on the use of new technologies and innovations. An important factor is the high-tech business development that uses modern digital technologies. To achieve global economic growth, it is necessary to develop digital technologies that match the rapidly changing global market. In the digitalization conditions, electronic commerce is gaining more and more development, the conduct of which requires the use of effective tools of influence on the market, taking into account the competitive advantages and resources of enterprises [24].

Electronic commerce (E-commerce) is a field of the digital economy, which includes all financial and trade transactions conducted using computer networks, and business processes related to these transactions [23]. The main components of electronic commerce are electronic information exchange (Electronic Data Interchange, EDI), electronic movement of capital (Electronic Funds Transfer, EFS), electronic trade (E-Trade), electronic money (E-Cash), electronic marketing (E-Marketing), electronic banking (E-Banking), electronic insurance services (E-Insurance), etc. [23].

Electronic commerce development took place in several stages (Figure 3). Each of the stages covers a certain period of time and has certain features [37].

The emergence period of e-commerce

- The initial stage (before the Internet), covers 1964-1969.

The period of initial commercialization of the Internet.

- Includes the following stages: the e-mail commerce emergence (1971-1991), the television commerce emergence in the form of Teletext (1979-1991), the beginning of B2B e-commerce (1981-present), the beginning of using e-commerce systems within logistics development (1990 - present time).

The period of intense commercialization of the Internet

- Includes the following stages: the appearance of the first modern website (1991 - present), the beginning of the era of Internet trade (1992 - present), the emergence of the concept of "digital economy" (1995), the beginning of e-commerce functioning for C2C (1995 - present).

The period of modern e-commerce development

- The beginning of mobile commerce (1997-present), the online electronic money processing systems emergence (1998-present), the social media commerce emergence (2005-present), the voice e-commerce emergence (2011-present), the innovation of delivery methods in e-commerce (2013-present).

Figure 3. Characteristics of the Periodization Stages of the E-Commerce Development

Source: compiled by authors on materials [43]

E-commerce has characteristics such as accessibility, availability of large amounts of information, interactivity, the possibility of personalization and using social technologies. It provides many advantages both for consumers and entrepreneurs and for the economy as a whole (Fig. 4).

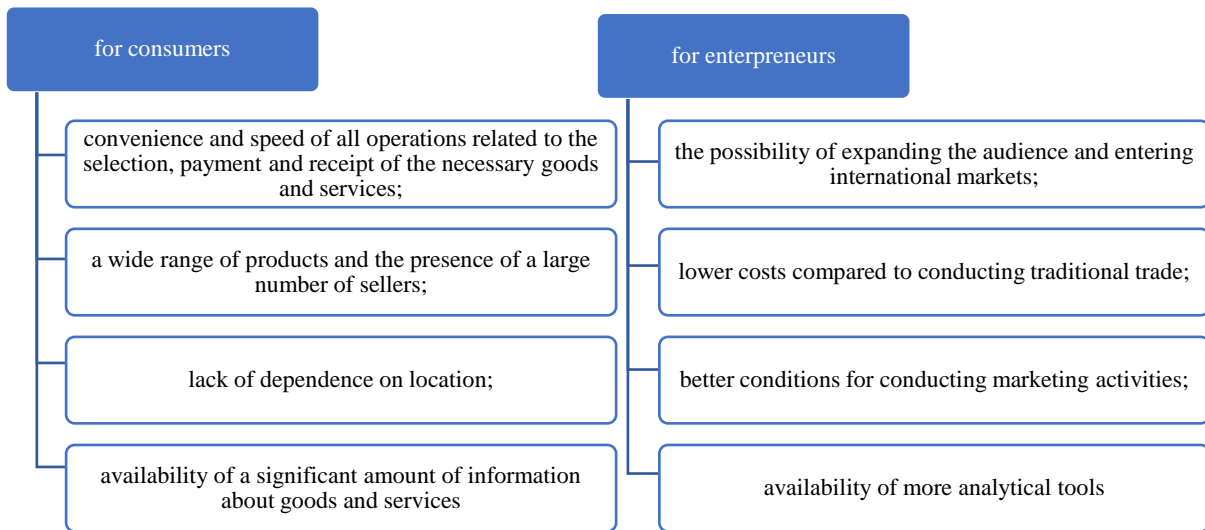


Figure 4. E-Commerce Benefits for Consumers and Entrepreneurs

Source: authors' own elaboration

Ukraine's economy also receives several significant benefits from e-commerce development. These include the following:

- promoting economic growth by increasing the sales volume and creating new jobs;
- access to the world market, which contributes to foreign trade development;
- creating new business opportunities and driving innovation.

All the listed advantages that e-commerce provides for individuals and the economy as a whole have a positive effect on its development. For several years in a row, there has been a steady increase in sales in e-commerce around the world:

During the COVID-19 pandemic, the digital economy has played an extremely important role in overcoming the difficulties of conventional commerce. Due to this accelerated adoption of technology during the pandemic, almost all e-commerce has grown. EY's Reimagining Industry Futures 2022 study confirms how external factors have driven the pace of retail's digital transformation. 75% of retailers surveyed said that the COVID-19 pandemic has accelerated their digital transformation plans [19].

Technology is blurring industry boundaries and opening up new opportunities in all aspects of retail, i.e. marketing, purchasing, sales, planning, logistics and cross-functional support such as finance, HR, and real estate. The COVID-19 pandemic has accelerated the transition to online platforms and caused digital alternatives to gain more recognition [19]. With this in mind, many trade workers will need support to navigate the challenges that technological disruption will bring and successfully transition into new roles. With automation threatening more than 40% of consumer goods jobs and at least 20% of retail jobs in the next ten years, workers need to be supported in learning new technological, analytical, and collaborative skills. So companies, in addition to the approach to doing business, will have to change their approach to training and hiring [41].

Digital retailers have benefited from the shift to digital shopping during the pandemic. The Global Powers of Retailing 2023 report shows 250 leading companies, among which the TOP-10 are those retailers that have actively increased their digital capabilities either through the technology implementation in the store or through the expansion of their omnichannel offerings [15].

In recent years, the number of digital retailers in Ukraine has increased. Small entrepreneurs are also actively involved in e-commerce activities due to the opportunity to increase sales, attract new customers and expand the audience for relatively small investments. Currently, there are several online trading platforms in Ukraine that allow small entrepreneurs to create their online stores. Such platforms as OLX, Prom.ua, Rozetka and others primarily include marketplaces.

Ukraine is the 58th largest e-commerce market with a projected revenue of 2,759.1 million US dollars in 2023. The Compound Annual Growth Rate (CAGR) in 2023-2027 will be 13.79%, which allows us to forecast the market volume in 2027 at the level of 4,625 million US dollars; the number of users in the e-commerce market will be 24.84 million users by 2027 [17]. Figure 5 shows the structure of the e-commerce market by category in Ukraine in 2023.

The forecast for 2023-2027 regarding the of the Ukrainian e-commerce market development is presented in Figure 6.

Table 1. TOP-10 retailers according to Global Powers of Retailing

Place in Global Powers of Retailing Ranking	Name of the company	The country of origin	Retail revenue, million US dollars	Growth of revenues from retail trade, %
1	Walmart Inc.	The USA	572.754	2.4
2	Amazon.com, Inc.	The USA	239.150	12.0
3	Costco Wholesale Corporation	The USA	195.929	17.5
4	Schwarz Group	Germany	153.754	5.5
5	The Home Depot, Inc.	The USA	151.157	14.4
6	The Kroger Co.	The USA	136.971	4.1
7	JD.com, Inc.	China	126.387	25.1
8	Walgreens Boots Alliance, Inc.	The USA	122.045	3.7
9	Aldi Einkauf GmbH & Co. oHG and Aldi International Services GmbH & Co.	Germany	120.947	-0.4
10	Target Corporation	The USA	104.611	13.2

Source: compiled by authors on materials [15]

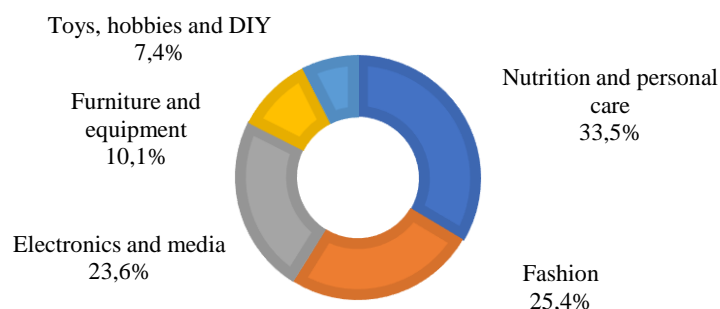


Figure 5. The E-Commerce Market Structure by Category in Ukraine in 2023, %

Source: compiled by authors on materials [45]

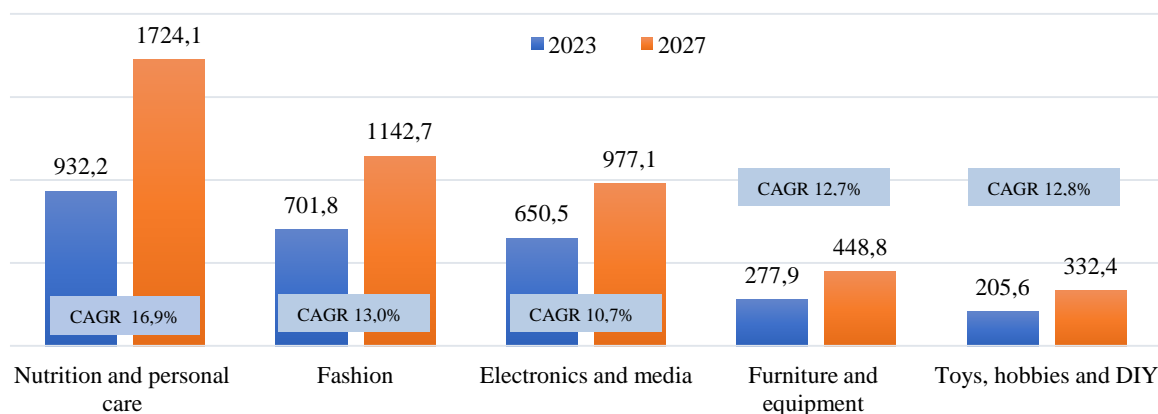


Figure 6. Forecast of the Ukrainian E-Commerce Market Development in Ukraine for 2023-2027, million US dollars

Source: compiled by authors on materials [45]

The largest player on the Ukrainian e-commerce market is rozetka.com.ua (Table 2). In 2022, the store's revenue was 246.2 million US dollars. Rozetka.com.ua is followed by apple.com and makeup.com.ua as the second and third largest stores with 92.8 million US dollars and 46.3 million US dollars, respectively. In general, the three leaders account for 40.1% of the revenue of the top 100 online stores of Ukraine [45].

In order to successfully implement their business on the Internet, small entrepreneurs should pay attention to several key aspects:

- 1) Creating a convenient online store with easy navigation that allows you to easily find the necessary product;
- 2) Promoting the product or service on social networks, search engines and other online platforms;
- 3) Establishing convenient methods for payment and delivery of goods;
- 4) Timely and effective customer support.

Table 2. TOP-5 of Online Retailers in Ukraine by Income Level in 2022

Place	Internet-shop	The country of origin	Retail turnover, million US dollars	Category
1	rozetka.com.ua	Ukraine	246.2	Toys, hobbies and DIY
2	apple.com	The USA	92.8	Electronics and media
3	makeup.com.ua	Ukraine	46.3	Nutrition and personal care
4	comfy.ua	Ukraine	34.8	Furniture and equipment
5	foxtrot.com.ua	Ukraine	31.6	Nutrition and personal care

Source: compiled by authors on materials [45]

Integration into the international system of electronic trade, or electronic commerce, remains relevant for Ukraine. For Ukraine to enter international e-business, it is necessary to meet the following requirements:

- ensuring the proper level of infrastructure development and improving the population's computer literacy;
- promoting the network infrastructure development, which consists in the creation of large Internet portals, network business structures, and online stores;
- ensuring mastery of Internet work skills for representatives of all positions;
- raising the population's living standard and, accordingly, its purchasing power, which will positively affect consumer market development [4].

Despite the fact that e-commerce in Ukraine is constantly developing, there are a number of issues associated with trading on the Internet. Most of them are due to difficulties in the economy and insufficiently developed infrastructure. Due to the population's low living standard of the compared to European countries, the instability of the national currency and the high level of inflation, the purchasing power of the population falls, which negatively affects the development of online trade. Another problem is the insufficiently developed system of electronic payments and the lack of trust in them by the majority of potential customers [4].

Despite the existing problems and shortcomings, the e-commerce market in Ukraine has all the prospects for development. The trends that are already successfully developing in the USA, China, and European countries and primarily concern increasing the level of customer orientation in trade [5] will gain relevance.

If we analyze the experience of foreign countries, we can highlight further trends and prospects for e-commerce development in Ukraine.

First, mobile commerce will gain popularity. Due to smartphones proliferation and the increase in the number of useful applications, commercial activities will increasingly be carried out using mobile devices.

The second trend is the e-commerce technologies and tools development that will simplify most operations related to product selection, payment, order processing, inventory management, and e-commerce channels expansion [5].

Another trend is personal brands development. According to the latest studies, among modern consumers, goods associated with individual personalities are gaining more and more popularity [25, 29, 40]. That is why personal brand creation is an important and relevant direction in modern business. One of the most important elements of the successful development of a personal brand is authentic and unique image creation. In order to develop a personal brand in e-commerce, it is also important to have an effective marketing strategy that will allow to clearly communicate the message to the audience. Social networks, blogs and other online channels can be used to support a personal brand and increase its influence [5].

Conclusions

In recent years, digital technologies have become one of the most important factors in the economic development of the global economy and the national economies of individual countries. The prerequisite for the spread of digital technologies around the world was the increase in Internet availability, the spread of mobile devices and the increase in the amount of data suitable for storage and processing. Due to applying digital technologies, modern companies have gained new opportunities for the automation of production and supply processes, which contributed to a significant reduction in costs and an increase in product quality.

The digital technologies development led to the digital economy formation, which significantly influenced the ways of conducting trade and the emergence of new forms and directions. The biggest impetus for the transition of trade to the Internet was the COVID-19 pandemic because the quarantine restrictions application led to an increase in the number of online purchases and an increase in the level of use of social networks. This contributed to the accelerated development of e-commerce, which combines various forms of trade and offers more convenient opportunities for trade and financial transactions.

In order to remain competitive, almost all business is moving to the Internet, as it is currently the largest global market. E-commerce is becoming an increasingly important part of the national and global economy due to the many benefits it provides to consumers and businesses and features such as universal accessibility, interactivity, personalization, and convenience.

The electronic economy development in the world is taking place at a rapid pace, especially in Western and Asian countries. In Ukraine, there is also an increase in the share of e-commerce, but due to the presence of certain economic problems, it is happening at a less rapid pace. Integration with the international electronic trade system is relevant for Ukraine. For the successful entry of Ukraine into the international electronic business, care

should be taken to ensure the proper level of the necessary infrastructure development, increase the level of the population's computer literacy and master the working skills with gadgets, expand the network infrastructure and increase the purchasing power in the country. Overcoming the economic and technical problems hindering the e-commerce development in Ukraine is a prerequisite for the country's integration into the international system of online trade.

Despite all the difficulties, Ukraine has great potential for e-commerce development, and in this context, the domestic market can rightly be called promising. To see how the domestic e-commerce further development will take place, you should refer to the examples of countries such as the USA, China, and most European countries. The trends observed in the electronic trade of the listed countries will become relevant for Ukraine. These trends include mobile commerce development, e-commerce tools and technologies development, the spread of personal brands, and increased levels of personalization and customer orientation.

Solving existing economic problems, promoting general digitalization, improving the necessary infrastructure, improving payment systems, raising the level of public awareness and taking into account foreign experience by entrepreneurs are mandatory conditions for the e-commerce development in Ukraine and the full realization of the domestic market potential.

Abstract

Digital technologies are becoming a necessary tool in modern trade, contributing to its development and change. The unconscious use of digital technologies can have negative consequences for trade enterprises, which makes it important to study the impact of digital technologies on trade. The purpose of the article is to study the impact of digital technologies on trade, as well as to analyze the prospects for their use by enterprises in Ukraine. In Ukraine, trade is actively moving to an online format, which creates new opportunities for businesses and consumers, but most Ukrainian companies, especially small and medium-sized businesses, still have limited knowledge and experience in digital technologies, which hinders the effective development of trade in Ukraine in the light of current realities. Research shows that e-commerce, mobile shopping experiences, smart technologies, and data analytics are key areas that are impacting consumers and business processes. Smart technologies, such as facial recognition, chatbots, and virtual reality, are becoming increasingly common in trade processes. During the COVID-19 pandemic, the digital economy has played a crucial role in overcoming the difficulties of conventional trade. This accelerated adoption of technology during the pandemic has led to the growth of almost all e-commerce. In recent years, the number of digital retailers has increased in Ukraine. Small entrepreneurs are also actively engaging in e-commerce activities because of the opportunity to increase sales, attract new customers, and expand their audience with relatively small investments. As of 2022, Ukraine is the 58th largest e-commerce market. Despite the fact that e-commerce in Ukraine is developing steadily, there are a number of problems associated with online commerce. Most of them are caused by difficulties in the economy and underdeveloped infrastructure. Despite the existing problems and shortcomings, the e-commerce market in Ukraine has all the prospects for development. Trends that are already successfully developing in the US, China, and European countries and relate primarily to increasing the level of customer focus in trade will become more relevant. Solving existing economic problems, promoting general digitalization, improving the necessary infrastructure, improving payment systems, raising public awareness and taking into account foreign experience by entrepreneurs are prerequisites for the development of e-commerce in Ukraine and the full realization of the domestic market potential.

Список літератури:

1. Волкова Н.П. (Ред.). (2021). Моделювання компетентнісної професійної освіти в контексті євроінтеграції. Дніпро: Університет імені Альфреда Нобеля. 356 с. [Електронний ресурс]. – Режим доступу: <http://elibrary.kdpu.edu.ua/xmlui/handle/123456789/4274>.
2. Воробйова В., Чернявська Т. (2023). Вплив штучного інтелекту на торгівлю: можливості та виклики для українського ринку. Виклики та проблеми сучасної науки: зб. наук. пр. Т. 1. Дніпро: ДНУ. [Електронний ресурс]. – Режим доступу: <https://fti.dp.ua/conf/2023/05227-1324>.
3. Крупський О.П., Стасюк Ю.М. (2010). Формування інформаційної компетентності майбутнього менеджера-економіста в сучасному освітянському просторі. [Електронний ресурс]. – Режим доступу: <https://philarchive.org/archive/KRU-20>.
4. Одарченко А.М., Сподар К.В. (2015). Особливості електронної комерції та перспективи її розвитку в Україні. Бізнес Інформ. (1), 342-346. [Електронний ресурс]. – Режим доступу: http://nbuv.gov.ua/UJRN/binf_2015_1_57.
5. Сак Т.В., Ховхалюк Д.О. (2020). Електронна торгівля в Україні: стан, тенденції і перспективи розвитку. Маркетинг і цифрові технології, 4(3), 73-85. [Електронний ресурс]. – Режим доступу: <https://mdt-opu.com.ua/index.php/mdt/article/view/112/105>.

6. Цифрова трансформація економіки: мікро- та макроаспекти: колективна монографія / за заг. ред. Н.А. Мазур. Кам'янець-Подільськ. нац. ун-т ім. І. Огієнка. Чернівці: Чернівець. нац. ун-т ім. Ю. Федьковича, 2022. 440 с
7. Aheleroff S. et al. (2021). Digital twin as a service (DTaaS) in industry 4.0: an architecture reference model. *Advanced Engineering Informatics*, 47, 101225. DOI: 10.1016/j.aei.2020.101225.
8. Aleinikova O.V. et al. (2023). Digital technologies as a reason and tool for dynamic transformation of territory marketing. *Natsionalnyi Hirnychiy Universytet. Naukovyi Visnyk*, 1, 154-159. DOI: 10.33271/nvngu/2023-1/154.
9. Autio E., Mudambi R., Yoo Y. (2021). Digitalization and globalization in a turbulent world: Centrifugal and centripetal forces. *Global Strategy Journal*. 11(1), 3-16. DOI: 10.1002/gsj.1396.
10. Baiyere A., Salmela H., Tapanainen T. (2020). Digital transformation and the new logics of business process management. *European Journal of Information Systems*, 29(3), 238-259. DOI: 10.1080/0960085X.2020.1718007.
11. Bagale, G.S., Vandadi, V.R., Singh, D. et al. (2021). Small and medium-sized enterprises' contribution in digital technology. *Ann Oper Res*. DOI: 10.1007/s10479-021-04235-5.
12. Barska A., Wojciechowska-Solis J. (2020). E-consumers and local food products: A perspective for developing online shopping for local goods in Poland. *Sustainability*, 12(12), 4958. DOI: 10.3390/su12124958.
13. Bhide A. (1996). The questions every entrepreneur must answer. *Harvard business review*, 74(6), 120 [Електронний ресурс]. – Режим доступу: <https://hbr.org/1996/11/the-questions-every-entrepreneur-must-answer>.
14. Carayannis E.G., Morawska-Jancelewicz J. (2020). The futures of Europe: Society 5.0 and Industry 5.0 as driving forces of future universities. *Journal of the Knowledge Economy*, 13(4), 1-27. DOI: 10.1007/s13132-021-00854-2.
15. Deloitte. (February 2023). *Global Powers of Retailing 2023*. [Електронний ресурс]. – Режим доступу: <https://www.deloitte.com/global/en/Industries/consumer/analysis/the-global-powers-of-retailing.html>.
16. *Digital 2023: April Global Statshot Report*. [Електронний ресурс]. – Режим доступу: <https://datareportal.com/reports/digital-2023-april-global-statshot>.
17. *eCommerce market in Ukraine*. EcommerceDB. [Електронний ресурс]. – Режим доступу: <https://ecommercedb.com/markets/ua/all>.
18. *eCommerce – Ukraine*. Statista. [Електронний ресурс]. – Режим доступу: <https://www.statista.com/outlook/dmo/e-commerce/ukraine>.
19. Elia G., Margherita A., Passiante G. (2020). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. *Technological Forecasting and Social Change*, 150, 119791. DOI: 10.1016/j.techfore.2019.119791.
20. EY. (2020). How technology can drive transformation in retail. *EY Deutschland – Home | Building a better working world*. [Електронний ресурс]. – Режим доступу: https://www.ey.com/en_pt/consumer-products-retail/how-technology-can-drive-transformation-in-retail.
21. Faccia A., Le Roux C. L., Pandey V. (2023). Innovation and E-Commerce Models, the Technology Catalysts for Sustainable Development: The Emirate of Dubai Case Study. *Sustainability*, 15(4), 3419. DOI: 10.3390/su15043419.
22. Gielens K., Steenkamp J.B.E.M. (2019). Branding in the era of digital (dis) intermediation. *International Journal of Research in Marketing*, 36(3), 367-384. DOI: 10.1016/j.ijresmar.2019.01.005.
23. *Global Retail Ecommerce Forecast (2023)*. Emarketer. [Електронний ресурс]. – Режим доступу: <https://on.emarketer.com/rs/867-SLG-901/images/eMarketer%20Global%20Retail%20Ecommerce%20Forecast.pdf>.
24. Halenar I. et al. (2019). Virtualization of production using digital twin technology. 2019 20th international Carpathian control conference (ICCC). *IEEE*, 1-5. DOI: 10.1109/CarpathianCC.2019.8765940.
25. Jain V., Malviya B., Arya S. (2021). An overview of electronic commerce (e-Commerce). *Journal of Contemporary Issues in Business and Government*, 27(3), 666-670. [Електронний ресурс]. – Режим доступу: https://www.cibgp.com/article_10898_98b20a1dbfbd8f7084003b4a035911d.pdf.
26. Kitsela V. (February 09, 2023). Benefits, challenges, and best practices for digital transformation in retail. *Software Development Company – N-iX*. [Електронний ресурс]. – Режим доступу: <https://www.n-ix.com/digital-transformation-in-retail>.
27. Krupskiy O., Stasiuk Y. (2023). Organization of the corporate style of the medical institution: functions and components. *Time Description of Economic Reforms*, (1), 87-95. DOI: 10.32620/cher.2023.1.11.
28. Makedon V. et al. (2022). Arrangement of digital leadership strategy by corporate structures: a review. *Economic Studies*, 31(8), 19-40. [Електронний ресурс]. – Режим доступу: https://www.iki.bas.bg/Journals/EconomicStudies/2022/2022-8/02_Nataliya-Krasnikova.pdf.

29. Makedon, V., Mykhailenko, O., & Dzyad, O. (2023). Modification of Value Management of International Corporate Structures in the Digital Economy. *European Journal of Management Issues*, 31(1), 50-62. DOI: 10.15421/192305.
30. Makedon, V., Mykhailenko, O., & Vazov, R. (2021). Dominants and Features of Growth of the World Market of Robotics. *European Journal of Management Issues*, 29(3), 133-141. DOI: 10.15421/192113.
31. Miller C. (2022). How modern witches enchant TikTok: Intersections of digital, consumer, and material culture (s) on# WitchTok. *Religions*, 13(2), 118. DOI: 10.3390/rel13020118.
32. Nikolaiev M., Cherniavska, T. (2021). Operation Algorithm of the Adaptive Mechanism for Managing the Strategy Implementation in Digital Business Environment. *European Journal of Management Issues*, 29(3), 142-150. DOI: 10.15421/192114.
33. Pasquali M. (February 27, 2023). Topic: E-commerce worldwide. Statista. [Електронний ресурс]. – Режим доступу: <https://www.statista.com/topics/871/online-shopping>.
34. Pirola F. et al. (2020). Digital technologies in product-service systems: a literature review and a research agenda. *Computers in Industry*, 123, 103301. DOI: 10.1016/j.compind.2020.103301.
35. Retail e-commerce sales CAGR by country. Statista. [Електронний ресурс]. – Режим доступу: <https://www.statista.com/forecasts/220177/b2c-e-commerce-sales-cagr-forecast-for-selected-countries>.
36. Sardak S. et al. (2021). Life cycle: formation, structure, management. *Economic Studies (Ikonomicheski Izsledvania)*, 30(6), 126-142. [Електронний ресурс]. – Режим доступу: https://www.iki.bas.bg/Journals/EconomicStudies/2021/2021-6/7_Krupskyi_f_f.pdf.
37. Singh V.D. (2021). Digital transformation changes in the producer consumer relationship. *South Asian Journal of Marketing & Management Research*, 11(11), 121-127. DOI: 10.5958/2249-877X.2021.00119.3.
38. Sneader K., Singhal S. (January 4, 2021). The next normal arrives: Trends that will define 2021 and beyond. McKinsey & Company. [Електронний ресурс]. – Режим доступу: bit.ly/438YIX2.
39. Stachová K. et al. (2020). Use of digital technologies for intensifying knowledge sharing. *Applied Sciences*, 10(12), 4281. DOI: 10.3390/app10124281.
40. Subba Rao S., Metts G., Mora Monge C.A. (2003). Electronic commerce development in small and medium sized enterprises: A stage model and its implications. *Business process management Journal*, 9(1), 11-32. DOI: 10.1108/14637150310461378.
41. Suresh R. et al. (2022). Relevance of On-chain Asset Tokenization in 'Crypto Winter'. BCG. [Електронний ресурс]. – Режим доступу: <https://www.bcg.com/publications/2022/relevance-of-on-chain-asset-tokenization>.
42. Tapscott D. (ed.). (1999). *Creating value in the network economy*. Harvard Business School Press.
43. Top stores in Ukraine. EcommerceDB. [Електронний ресурс]. – Режим доступу: <https://ecommercedb.com/ranking/stores/ua/all?page=1&pagesize=50&specialist=all¤cy=USD>.
44. Törnberg P., Uitermark J. (2022). Tweeting ourselves to death: the cultural logic of digital capitalism. *Media, Culture & Society*, 44(3), 574-590. DOI: 10.1177/01634437211053766.
45. WEF (n.d.). *Future of Retail*. World Economic Forum. [Електронний ресурс]. – Режим доступу: <https://www.weforum.org/projects/future-of-retail>.
46. Xiarewana B., Civelek M. E. (2020). Effects of covid-19 on China and the world economy: Birth pains of the post-digital ecosystem. *Journal of International Trade, Logistics and Law*, 6(1), 147-157. [Електронний ресурс]. – Режим доступу: <https://ssrn.com/abstract=3611537>.

References:

1. Volkova, N.P. (ed.). (2021). *Modeling of competence-based vocational education in the context of European integration*. Dnipro: Alfred Nobel University. 356 p. Retrieved from: <http://elibrary.kdpu.edu.ua/xmlui/handle/123456789/4274> [in Ukrainian].
2. Vorobiova, V., & Cherniavska, T. (2023). The impact of artificial intelligence on trade: opportunities and challenges for the Ukrainian market. *Vyklyky ta problemy suchasnoyi nauky research papers collection*, Vol. 1. Retrieved from: <https://fti.dp.ua/conf/2023/05227-1324> [in Ukrainian].
3. Krupskyi, O.P., & Stasiuk, Y. (2010). Formation of information competence of the future manager-economist in the modern educational space. Retrieved from: <https://philarchive.org/archive/KRU-20> [in Ukrainian].
4. Odarchenko, A.M., & Spodar, K.V (2015). Features of Electronic Commerce and Prospects of its Development in Ukraine. *Business Inform*, (1), 342-346. Retrieved from: http://nbuv.gov.ua/UJRN/binf_2015_1_57 [in Ukrainian].
5. Sak, T., & Khovhaliuk, D. (2020). E-commerce in Ukraine: status, trends, development prospects. *Marketing and Digital Technologies*, 4(3), 73-85. Retrieved from: <https://mdt-opu.com.ua/index.php/mdt/article/view/112/105> [in Ukrainian].

6. Mazur, N.A. (ed.) (2022). Digital transformation of the economy: micro and macro aspects: collective monograph. Kamianets-Podilsk. National University named after I. Ohienko. Chernivtsi: Chernivtsi. National University named after Yu. Fedkovicha [in Ukrainian].
7. Aheleroff, S., Xu, X., Zhong, R.Y., & Lu, Y. (2021). Digital twin as a service (DTaaS) in industry 4.0: an architecture reference model. *Advanced Engineering Informatics*, 47, 101225. DOI: 10.1016/j.aei.2020.101225 [in English].
8. Aleinikova, O.V., Datsii, O.I., Kalina, I.I., Zavgorodnia, A.A., Yeremenko, Yu.O., & Nitsenko, V.S. (2023). Digital technologies as a reason and tool for dynamic transformation of territory marketing. *Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu*, 1, 154-159. DOI: 10.33271/nvngu/2023-1/154 [in English].
9. Autio, E., Mudambi, R., & Yoo, Y. (2021). Digitalization and globalization in a turbulent world: Centrifugal and centripetal forces. *Global Strategy Journal*, 11(1), 3-16. DOI: 10.1002/gsj.1396 [in English].
10. Baiyere, A., Salmela, H., & Tapanainen, T. (2020). Digital transformation and the new logics of business process management. *European Journal of Information Systems*, 29(3), 238-259. DOI: 10.1080/0960085X.2020.1718007 [in English].
11. Bagale, G.S., Vandadi, V.R., Singh, D. et al. (2021). Small and medium-sized enterprises' contribution in digital technology. *Ann Oper Res*. DOI: 10.1007/s10479-021-04235-5 [in English].
12. Barska, A., & Wojciechowska-Solis, J. (2020). E-consumers and local food products: A perspective for developing online shopping for local goods in Poland. *Sustainability*, 12(12), 4958. DOI: 10.3390/su12124958 [in English].
13. Bhide, A. (1996). The questions every entrepreneur must answer. *Harvard business review*, 74(6), 120. Retrieved from: <https://hbr.org/1996/11/the-questions-every-entrepreneur-must-answer> [in English].
14. Carayannis, E.G., & Morawska-Jancelewicz, J. (2022). The Futures of Europe: Society 5.0 and Industry 5.0 as Driving Forces of Future Universities. *Journal of the Knowledge Economy*, 13(4), 3445-3471. DOI: 10.1007/s13132-021-00854-2 [in English].
15. Deloitte. (February 2023). Global Powers of Retailing 2023. Retrieved from: <https://www.deloitte.com/global/en/Industries/consumer/analysis/the-global-powers-of-retailing.html> [in English].
16. Digital 2023: April Global Statshot Report. Retrieved from: <https://datareportal.com/reports/digital-2023-april-global-statshot> [in English].
17. eCommerce market in Ukraine. EcommerceDB. Retrieved from: <https://ecommercedb.com/markets/ua/all> [in English].
18. eCommerce – Ukraine. Statista. Retrieved from: <https://www.statista.com/outlook/dmo/e-commerce/ukraine> [in English].
19. Elia, G., Margherita, A., & Passiante, G. (2020). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. *Technological Forecasting and Social Change*, 150, 119791. DOI: 10.1016/j.techfore.2019.119791 [in English].
20. EY. (2020). How technology can drive transformation in retail. EY Deutschland – Home | Building a better working world. Retrieved from: https://www.ey.com/en_pt/consumer-products-retail/how-technology-can-drive-transformation-in-retail [in English].
21. Faccia, A., Le Roux, C.L., & Pandey, V. (2023). Innovation and E-Commerce Models, the Technology Catalysts for Sustainable Development: The Emirate of Dubai Case Study. *Sustainability*, 15(4), 3419. DOI: 10.3390/su15043419 [in English].
22. Gielens, K., & Steenkamp, J.B.E. (2019). Branding in the era of digital (dis) intermediation. *International Journal of Research in Marketing*, 36(3), 367-384. DOI: 10.1016/j.ijresmar.2019.01.005 [in English].
23. Global Retail Ecommerce Forecast (2023). Emarketer. Retrieved from: <https://on.emarketer.com/rs/867-SLG-901/images/eMarketer%20Global%20Retail%20Ecommerce%20Forecast.pdf> [in English].
24. Halenar, I., Juhas, M., Juhasova, B., & Borkin, D. (2019). Virtualization of Production Using Digital Twin Technology. 2019 20th International Carpathian Control Conference (ICCC). 1-5. DOI: 10.1109/carpathiancc.2019.8765940 [in English].
25. Jain, V., Malviya, B., & Arya, S. (2021). An overview of electronic commerce (e-Commerce). *Journal of Contemporary Issues in Business and Government*, 27(3), 666-670. Retrieved from: https://www.cibgp.com/article_10898_98b20a1dbf8f7084003b4a035911d.pdf [in English].
26. Kitsela, V. (February 09, 2023). Benefits, challenges, and best practices for digital transformation in retail. Software Development Company – N-iX. Retrieved from: <https://www.n-ix.com/digital-transformation-in-retail> [in English].
27. Krupskiy, O., & Stasiuk, Y. (2023). Organization of the corporate style of the medical institution: functions and components. *Time Description of Economic Reforms*, 1, 87-95. DOI: 10.32620/cher.2023.1.11 [in Ukrainian].

28. Makedon, V., Krasnikova, N., Krupskiy, O. P., & Stasiuk, Y. (2022). Arrangement of digital leadership strategy by corporate structures: a review. *Economic Studies*, 31(8). Retrieved from: https://www.iki.bas.bg/Journals/EconomicStudies/2022/2022-8/02_Nataliya-Krasnikova.pdf [in English].
29. Makedon, V., Mykhailenko, O., & Dzyad, O. (2023). Modification of Value Management of International Corporate Structures in the Digital Economy. *European Journal of Management Issues*, 31(1), 50-62. DOI: 10.15421/192305 [in English].
30. Makedon, V., Mykhailenko, O., & Vazov, R. (2021). Dominants and Features of Growth of the World Market of Robotics. *European Journal of Management Issues*, 29 (3), 133-141. DOI: 10.15421/192113 [in English].
31. Miller, C. (2022). How modern witches enchant TikTok: Intersections of digital, consumer, and material culture (s) on# WitchTok. *Religions*, 13(2), 118. DOI: 10.3390/rel13020118 [in English].
32. Nikolaiev, M., & Cherniavska, T. (2021). Operation Algorithm of the Adaptive Mechanism for Managing the Strategy Implementation in Digital Business Environment. *European Journal of Management Issues*, 29(3), 142-150. DOI: 10.15421/192114 [in English].
33. Pasquali, M. (February 27, 2023). Topic: E-commerce worldwide. Statista. Retrieved from: <https://www.statista.com/topics/871/online-shopping> [in English].
34. Pirola, F., Boucher, X., Wiesner, S., & Pezzotta, G. (2020). Digital technologies in product-service systems: a literature review and a research agenda. *Computers in Industry*, 123, 103301. DOI: 10.1016/j.compind.2020.103301 [in English].
35. Retail e-commerce sales CAGR by countries. Statista. Retrieved from: <https://www.statista.com/forecasts/220177/b2c-e-commerce-sales-cagr-forecast-for-selected-countries> [in English].
36. Sardak, S., Britchenko, I., Vazov, R., & Krupskiy, O.P. (2021). Life cycle: formation, structure, management. *Economic Studies (Ikonomicheski Izsledvania)*, 30(6), 126-142. Retrieved from: https://www.iki.bas.bg/Journals/EconomicStudies/2021/2021-6/7_Krupskiy_f_f.pdf [in English].
37. Singh, V.D. (2021). Digital transformation changes in the producer consumer relationship. *South Asian Journal of Marketing & Management Research*, 11(11), 121-127. DOI: 10.5958/2249-877X.2021.00119.3 [in English].
38. Sneader, K., & Singhal, S. (January 4, 2021). The next normal arrives: Trends that will define 2021 and beyond. McKinsey & Company. Retrieved from: bit.ly/438YIX2 [in English].
39. Stachová, K., Stacho, Z., Cagaňová, D., & Stareček, A. (2020). Use of Digital Technologies for Intensifying Knowledge Sharing. *Applied Sciences*, 10(12), 4281. MDPI AG. DOI: 10.3390/app10124281 [in English].
40. Subba Rao, S., Metts, G., & Mora Monge, C.A. (2003). Electronic commerce development in small and medium sized enterprises: A stage model and its implications. *Business process management Journal*, 9(1), 11-32. DOI: 10.1108/14637150310461378 [in English].
41. Suresh, R., Kumar, S., Liu, D., Kronfellner, B., & Kaul, A. (2022). Relevance of On-chain Asset Tokenization in 'Crypto Winter'. BCG. Retrieved from: <https://www.bcg.com/publications/2022/relevance-of-on-chain-asset-tokenization> [in English].
42. Tapscott, D. (Ed.). (1999). *Creating value in the network economy*. Harvard Business School Press.
43. Top stores in Ukraine. EcommerceDB. Retrieved from: <https://ecommercedb.com/ranking/stores/ua/all?page=1&pagesize=50&specialist=all¤cy=USD> [in English].
44. Törnberg, P., & Uitermark, J. (2022). Tweeting ourselves to death: the cultural logic of digital capitalism. *Media, Culture & Society*, 44(3), 574-590. DOI: 10.1177/01634437211053766 [in English].
45. WEF (n.d.). *Future of Retail*. World Economic Forum. Retrieved from: <https://www.weforum.org/projects/future-of-retail> [in English].
46. Xiawana, B., & Civelek, M.E. (2020). Effects of covid-19 on China and the world economy: Birth pains of the post-digital ecosystem. *Journal of International Trade, Logistics and Law*, 6(1), 147-157. Retrieved from: <https://ssrn.com/abstract=3611537> [in English].

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