
The impact of the development of digital technologies on consumer behavior

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Abstract. Digital space, in accordance with today's trends, has become an essential part of every individual's everyday life. Social media has emerged as an effective tool in promoting marketing strategies. In a digital ecosystem where companies must understand their users and consumers online, the fundamental basis of online business models must include strategies such as user experience, influencer marketing, user-generated content or digital word-of-mouth. The development of mechanisms for influencing the audience is based on the analysis of consumer behavior in the digital environment. After the application of innovative marketing technologies, the activity of consumers undergoes changes. The purpose of the work is research and analysis of methods of digital adaptation to market conditions and development of a system of techniques for improving digitalized service in all spheres of life. To achieve the goal, the method of system analysis, comparison and modeling was applied. It has been determined that over the past decades, digital technology and social media have led to an evolution of consumer behavior that correlates with the actions that users take through the digital channels in which they invest their time. Consumer behavior in the digital age, digital marketing strategies, digital business models such as mobile applications or the sharing economy are explored. Concepts of digital strategies are revealed: content marketing, user experience, influencer marketing, user-generated content, digital word-of-mouth. The practical value of the work is to clarify the elements that should be developed into a quality security model and improve data management at each stage of work

Keywords: digital economy, strategies, content, social sources, brand loyalty

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INTRODUCTION

The popularization and development of digital technologies, the use of the Internet, social networks, and mobile applications have become part of the everyday life of billions of people. For example, the current rate of Internet use among adults is around 87% and closer to 100% for demographic groups such as adults with higher education and higher income. Young people – the next generation of mass consumers – have the same high levels. In the UK, for example, the number of hours adults spend online has more than doubled over the past decade and now averages 20.5 hours per week [1; 2]. In Ukraine, this figure is 18.3 hours per week. Part of this growth is fueled by social media: worldwide, more than 2 billion people now use social media, with Facebook alone having about 1 billion daily active users.

Social media has been largely implemented as an effective mechanism that advances the marketing objectives and strategies of firms, especially in aspects related to customer engagement, customer relationship management and communications. Internet strategies have developed rapidly over the past decade. In response to modern challenges, users have adapted their behavior on the Internet. These changes have led to the development of new user habits and behaviors in a digital environment that is increasingly characterized by personalized strategies to attract new consumers. Therefore, research on consumer behavior should be aimed at studying and analyzing consumer behavior in the digital environment. The researches of L. Ziaran, K. Antonil, O. Lakatsi, O. Merlo, A. Yesingerich, L. Sandys are devoted to the processes of development of digital technologies.. The theoretical and methodological foundations of the formation of the interaction of the subjects of the consumer market in the conditions of the digital transformation of the economic systems of Ukraine are highlighted in the studies of O. Baranova, A. Dzyubinoi, K. Kopets, G. Dzyubinoi, N. Kraus, O. Sienkovych and others. It should be noted that most of the research is focused on digital consumer behavior issues. However, the impact of digital technologies on consumer behavior needs further research, especially given the ever-changing nature of social media and mobile environments in which consumers

of different companies are and interact. This article summarizes current facts and events regarding the development of the impact of digital technologies on interaction with consumers and organizations, based on research on consumer behavior and psychology.

The purpose of the article is to analyze, systematize, and justify the relevance of the processes of digital transformation of business entities, the impact of digital technologies on changing consumer behavior, and the formation of recommendations for business interaction with consumers in the field of digital technology development in all spheres of society.

Analysis of factors that determine the purchasing behavior of users in the digital segment

Data generated by users as a result of their activities on their social media profiles, websites, digital platforms or interactions with multimedia elements that belong to companies' digital marketing strategies create data points that contain important information about demographics, geographic data, interests or lifestyle habits of users. All this data must be analyzed by companies in order to properly segment advertising and propose digital segmentation strategies that can adapt to user behavior in this digital ecosystem [3].

Based on the analysis of such data and the behavior of Internet users, companies are increasingly trying to understand the factors that influence users' online decision-making. These factors can be determined by users' online exposure, feedback or opinions, personal experiences of close friends, and a host of other factors and interactions that can occur in digital environments such as social media.

Additionally, there is evidence that customer journeys are changing over time as customer behavior is increasingly influenced by digital advertising and the ease of shopping in a digital environment. The ease of use of e-commerce websites has changed dramatically over the past decade. In this context, it becomes imperative to know how these changes in user behavior should be adapted – both from the point of view of the users themselves, i.e. taking into account factors related to the privacy and processing of their data, and

from the point of view of companies that must adapt your digital strategies to capture and generate leads to retain customers online.

Accordingly, the role of factors such as user-generated content and digital word-of-mouth has been extensively explored in the literature. With regard to user-generated content, companies can use this type of content to understand the underlying concerns of users and to analyze their comments, opinions, attitudes or any other online activity. This type of content is publicly generated by users and is free of bias caused by companies.

Analyzing such content allows companies to better understand trends in user communities that focus on the company's products and services. By following this line of research, companies can identify user communities and find thought leaders within them who can become influencers (and thus help companies promote their products and services). Likewise, in recent years, digital word-of-mouth has become one of the main strategies for both attracting and retaining users. Users feel comfortable using social networks and their profiles on multimedia platforms to create videos, music or any other type of multimedia content.

In these ecosystems, users are influenced by increased followers or increased involvement in user communities. The opinions of other users – for example expressed through reviews and comments – also play a fundamental role in decision-making. From the point of view of companies, it is necessary to develop a strategy to create positive opinions about products and services on the Internet, so that users can determine a positive reputation for the company and its products on the Internet.

In this context, the study aimed to investigate the factors that influence user behavior in the digital age, with a particular emphasis on the main digital marketing techniques used to promote different types of content published by online users.

A study of consumer purchasing behavior in restaurants through social media analysis found that the restaurant industry and social media have seen an increase in the generation of digital data and publicly available information in recent years. Based on

the results, it can be argued that social media can influence consumers' pre-purchase behavior and online purchase decisions.

Focusing on the Ukrainian restaurant industry, particularly the food sector, the application of the digital word-of-mouth concept and its relationship to social media and online marketing communities was explored. In particular, it was interesting to determine whether greater access to information and an online ordering system could stimulate consumer purchasing behavior.

The author conducted a study using the PLS-SEM analysis methodology, 270 consumers of the restaurant sector were selected for data analysis during three months (September-November 2021), the research indicates that the application of the concept of digital word of mouth transmission, social media advertising and online ordering systems are central factors that determine the purchasing behavior of users. At the same time, it was found that the opinions of other Internet users do not have a significant impact on users' purchase decisions in the restaurant and leisure sector.

This data suggests that companies should focus on monitoring and managing the opinions and reviews that users make online about their products, taking into account the specific industry in which they operate. In other words, it is not enough to have a well-designed digital platform, the product or service itself must also provide touch points with the user.

So, although negative opinions and comments from users can significantly affect the strategy of online companies, a well-designed digital platform is not the key to increasing purchases, these actions do not affect the behavior of users before purchase, but influence the opinion of users about the process of purchasing a product.

A. Reyes-Menendez and others. [4] argue that to study user behavior online, companies should adapt their strategies to include mobile applications. Mobile applications, understood as a new channel of communication and sales, have forced many users and consumers to change their behavior in the digital ecosystem, as the mobile phone is a new means of purchase.

According to the research of the previously named author and his team, the differences between the answers to the questionnaire and the eye tracking analysis, when the respondents saw for themselves the stimuli and motivation presented in the questionnaire, were determined.

The results of this study demonstrate that it is possible to predict user responses simply by observing the items in the questionnaire. The results of this study can be used in mobile applications to improve both the design of such applications and the user experience.

Implications are presented, focusing on measuring the relevance that a biometric approach has for analyzing user behavior for the creation or design of future mobile applications. The results of this study highlight the importance of avoiding distractions in ecosystems where there is a lot of “noise” to implement marketing strategies when we are moving around using mobile phones, for example.

The results published by the authors A. Reyes-Menendez [4] & J. Saura [5] can help to improve aspects of navigation related to visualization and user concentration, as well as provide a deeper understanding of how users browse the Internet and how to change user behavior. The iconographic and visual elements identified in this study can inform companies’ identity strategies and guide the design of their social media platforms and profiles.

The importance of new sharing economy platforms should also be considered and analyzed. These platforms are focused on understanding and influencing user behavior. There are various digital strategies to attract and retain users who like such platforms. In their study, Polanco-Diges & Debasa [6] analyze the strategies, methods and tactics implemented on sharing economy platforms and derive added value from the analysis of user-generated data.

The authors show that sharing economy platforms influence online user behavior and explain how digital platforms link the supply and demand of internet users. Likewise, these types of platforms offer transactions related to the purchase and rental of real estate, as well as collaborative ways to build relationships online. Using such platforms, brands can create

experiences to create consumer trust and an emotional connection between users and companies.

In an effort to understand how users develop their behavior and actions online, Polanco-Diges & Debasa [6] review a total of 13 relevant articles on the collaborative economy and digital marketing. Based on the results of the review, eight digital marketing strategies were identified, namely:

- user experience;
- marketing in search engines;
- SEO (search optimization);
- SMM (marketing in social networks);
- Freemium strategies;
- content marketing;
- CRM (Customer Relationship Management) or influence marketing.

The authors also identify and analyze 12 key factors needed to understand user behavior on sharing economy platforms.

In addition, using an exploratory approach, Muniesa & Giménez [7] investigate digital marketing strategies in the fashion industry and measure their effectiveness. This study also analyzes how fashion brands use digital media and social media to retain their consumers.

The authors point out that companies should create quality content to identify and analyze specific audiences. Millennials are the most active generation in fashion, so fashion brands must use digital media and social media to retain their consumers. An effective digital strategy often used in the fashion industry is influencer marketing.

Through influencers in the fashion sector, brands try to change the way users think about their products and services. Through the content that influencers share through digital channels, brands build trust among consumers.

In their study, Muniesa & Giménez [7] reviewed a total of 11 articles on digital marketing in the fashion industry focusing on user behavior online. The authors explore different options for developing digital marketing strategies that focus on user loyalty, investing in influencers and other digital strategies to increase engagement.

Based on the results of the study, Muniesa & Giménez [7] argue that one of the ways to effectively convey a message from a brand to its customers is through creativity. Creativity increases brand awareness, so communication should be spontaneous and through appropriate channels.

According to Muniesa & Giménez [7], the most frequently used tools in the fashion sector to retain users and influence their online behavior are SEO and SEM, as well as channels such as Instagram, Facebook and Twitter. The authors also highlight the importance of information systems such as CRM to manage customer data, the use of QR codes to convey to users the channels through which companies develop their strategies, and the analysis of big data to understand how users create content.

In recent years, the topic of how the social media environment affects consumer behavior is still relevant. We can observe how different informational and social characteristics of the social environment, such as the influence of other consumers' opinions or choices (such as bidding on online auctions), or even the lives of friends through social networks, can influence subsequent behavior.

Scientists have investigated how people respond to how Facebook use affects their self-control. They found that when in contact with their closest friends on Facebook, consumers subsequently demonstrated lower levels of self-control when choosing, for example, a healthy lifestyle (choosing a healthier food instead of an unhealthy option) [1; 2; 6].

However, this was only for people who knew their closest friends on Facebook. Consumer behavior in mobile settings is becoming increasingly important as consumers use mobile devices more often. This is especially interesting in the context of shopping. Researchers have analyzed how consumers respond to mobile offers in brick-and-mortar stores, finding that mobile coupons can influence consumer journeys. In an online store, consumers focus on shopping on mobile devices (such as tablets) and, in particular, how touching products (rather than clicking on them) can increase their sense of belonging. This is an interesting

research topic because the study of how consumers physically interact with mobile devices and how this affects decision-making is poorly defined.

Social media can strategically improve two-way communication between firms and customers and, consequently, connect more customers to organizations. This fact becomes another possibility to what can already be done through social media business, namely social media represents content that is published visually, verbally or textually, or using a combination of text, visual and verbal content. In various contexts, firms have looked forward to using social media in many aspects of their customer interactions, such as facilitating information retrieval, interactivity, promotion, and improving customer purchasing behavior.

People are showing themselves more and more in social networks. This is done for many purposes, including their role as consumers as they search for information about products, buy and consume them, and communicate with others about their experiences. Marketers have responded to these fundamental shifts by increasing their use of digital marketing channels. In fact, in 2019, about a third of global ad spending was on digital channels. Thus, consumer marketing is beginning to focus on the digital environment, especially on social media and mobile devices.

Consumers rely on information from social sources. Image language in online surveys positively influenced consumer attitudes and hedonic product choices. T. Kumar et al. [8] reviewed explanatory language in online surveys, finding that what consumers attribute to actions or responses influenced perceived usefulness. Consequently, businesses with small resources and personnel must develop quickly, implement new marketing channels and skills, and be innovative in order to continue to function effectively. T. Kumar [8] investigated that the use of softening vocabulary in expressing negative thoughts increases the trust and attractiveness of the consumer.

J. Saura [5] considered two types of neutral language, mixed (positive and negative) and indifferent, showing that neutral language enhances the direct effect of positive and negative affect on purchase when mixed.

Development and rapid growth of the social network market

Another important topic that has recently begun to be researched is the difference between online and offline so-called “word of mouth” [4]. Online word of mouth is determined by the social and functional characteristics of a brand, while offline is determined by

the emotional characteristics of a brand based on a large set of brand data.

The number of users of social networks is growing every day. Compared to 2016, the number of Internet users worldwide increased by more than 1.5 billion, or 52% in five years. (Fig. 1).

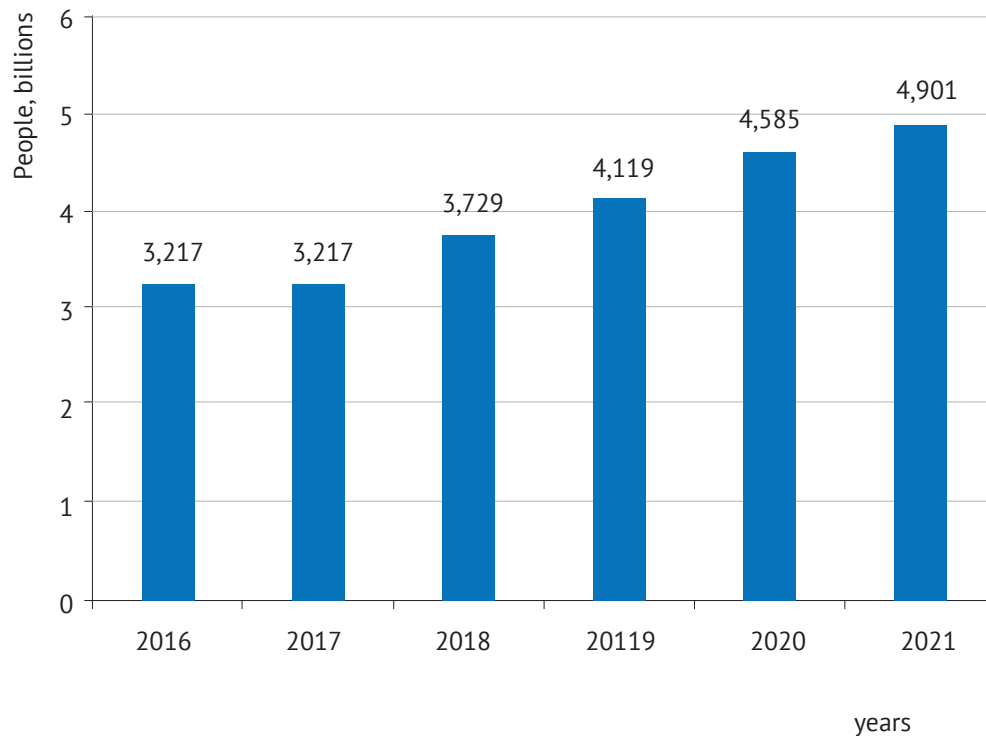


Figure 1. Growth dynamics of the Internet audience from 2016 to 2021

Source: built by the author based on data [9]

According to the International Telecommunication Union, it took 16 years to reach the first billion Internet users. The second billion joined the network in just 6 years. Today, the Internet is growing at a rate of 1 billion new users in 2.7 years. The dynamics of the growth of the audience of social networks over

the past 5 years is even more impressive than the data on the use of the Internet for the same period – since 2016, the total number of users of social networks in the world has almost doubled. The indicator for 2021 is 4.62 billion users of social networks – 2 billion more than in January 2016 (Fig. 2).

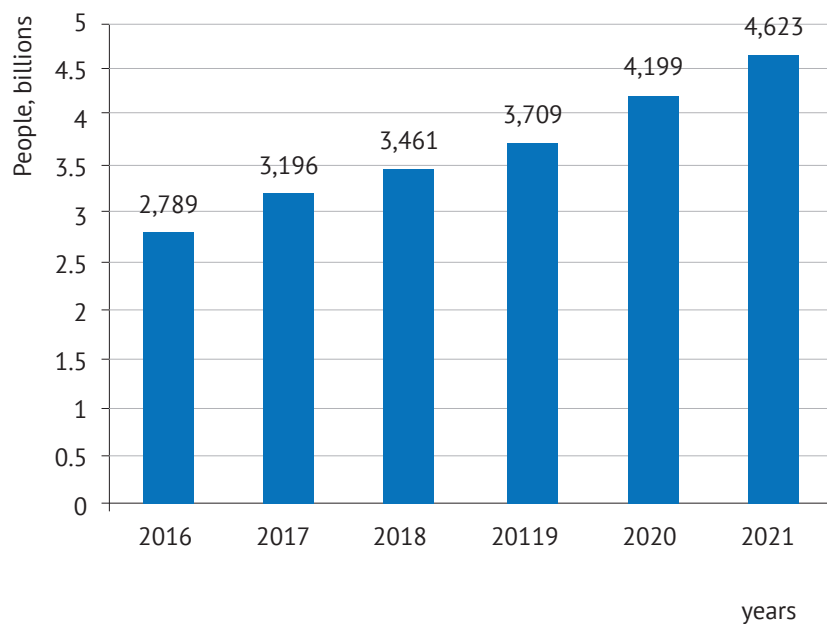


Figure 2. Growth dynamics of social networks from 2016 to 2021.

Source: built by the author based on data [10]

This year, the amount of time people spend on social media has increased again, albeit slightly. The Digital 2022 Global Overview Report reports that today the average user (globally) spends 2 hours and 16 minutes on social platforms every day, up from 2 hours and 15 minutes in 2018. That's about a third of all internet time and a seventh of total waking time. It is worth noting that the amount of time spent on social networks varies significantly between cultures – in Japan, for example, Internet users spend only 36 minutes a day on social networks. On the other side of the spectrum are Filipinos, who (like last year) are the most active on social media platforms. This year, the average for the Philippines is 4 hours 12 minutes, up 15 minutes per day (6%) from last year.

The global social networking market is valued at USD 192.950 billion in 2019 and is projected to grow at a CAGR of 25.38% to reach a market size of USD 939.679 billion by 2026.

The market for social media platforms is growing exponentially. The increase in demand is not only from millennials, but also due to significant adoption by all age groups. In addition, the use of social media platforms has grown significantly due to demand from

companies that also use the platforms for marketing purposes. In June 2020 alone, one app in the Apple App Store (LINE) generated \$6.78 million in global app revenue. The main factors expected to drive the growth of social media are increasingly recognized as a platform that helps drive search keywords to company websites, resulting in increased website traffic and brand popularity/exposure. The proliferation of smartphones is also playing an important role in the growth of the market. Social media apps designed for smartphones regularly track activity and make social media marketing even more relevant.

In addition, the exponential rate of data generated from social media platforms has led companies to make marketing and customer-related decisions based on customer data. The analytics performed with the help of these online platforms are considered to be an important business and marketing tool in today's business scenario. To gain real-world insights into consumer perceptions and improve their services and product portfolios, companies around the world are using social media analytics. Rising popularity of social media platforms by various end users for multiple purposes is expected to drive the market over the next 5 years.

For example, according to Facebook, it had 1,562 million daily active users as of the first quarter of 2019. Twitter claims that 500 million tweets are sent every day and that 9% more people are using Twitter every day, resuming the growth of social media penetration globally.

It should be determined that the increase in available electronic devices connected to the Internet, smartphones, phones and tablets, leads to an increase in the time spent on websites and social networks.

The emergence of COVID-19 has had a diverse impact on the global social media market. The market was heavily impacted during the first few months as businesses were disrupted by the lockdowns imposed by governments around the world. Measures taken by national governments to contain the spread of the infection have led to a decrease in economic activity and restrictions on the movement of goods and services with countries that are in a state of quarantine. Although e-commerce businesses operating only through social media platforms were negatively affected, the overall use of such platforms increased significantly during this period. According to the Digital 2022 Global Overview Report, 43% of consumers spent more time on these platforms, 54% watched more shows and movies on streaming services [10]. It should be noted that the many new digital behaviors that people have adopted during the quarantine restrictions have led to a significant increase in a variety of digital activities.

The growth of the market for social media platforms is helping to increase the number of e-commerce platforms that use these platforms for various purposes. Average revenue per user - ARPU (Average Revenue per User) is one of the most important indicators for large social media companies such as Facebook, Instagram, Twitter and TikTok. ARPU is how much revenue a company makes per user and is an important measure of how successful a business is, especially when it comes to leading social media sites.

In Tab. 1 presents the average revenue per user of the world's largest social networking platforms.

Analyzing the information, we can say that, firstly, such an amount of investment indicates that these are not fleeting investments, and secondly, many people want to promote their product or service on a social network that they like, this is confirmed by psycho-emotional communication in tongue. The purpose of advertising is to win the market through brand loyalty. Consequently, companies around the world are increasingly investing in social media marketing to achieve business goals. Also, if the company wants to enter completely different markets, for example, Spain, it can advertise in the country's popular social network, thereby effectively presenting its products to the target audience. If the goal of the business is to attract as many customers as possible, a presence on social networks is necessary. Social media marketing is the most economical way to advertise any product.

Table 1. Average revenue per user and number of users of the top 10 largest social networks in the world in 2021

Nº n/n	Name of the social network platform	Average revenue per user, USD USA	Number of social network users, billion people
1	TikTok	46.86	0.732
2	Facebook	30.75	2.8
3	Linkedin	25.97	0.310
4	Twitter	9.39	0.396
5	YouTube	8.64	2.3
6	Instagram	5.28	1.3

Table 1, Continued

Nº n/n	Name of the social network platform	Average revenue per user, USD USA	Number of social network users, billion people
7	Pinterest	3.69	0.459
8	WhatsApp	2.75	2
9	Snapchat	1.73	0.528
10	Reddit	0.49	0.430

Source: built by the author based on data [10]

CONCLUSIONS

The article provides an in-depth overview of user behavior in the digital age. Through the use of different methodologies, the contributions to this topic aim to understand how users behave online. It is important to point out that online user behavior is related to the actions users take through the digital channels in which they invest their time. The results of the research in this article show that the actions of online users depend on the field of operation. Pre-purchase and post-purchase user behavior, as well as user engagement and user interaction in online communities, are important factors to understand in this ecosystem.

Social media advertising, while not without its drawbacks, is an effective way to build brand loyalty in the digital economy, especially since it allows businesses to interact directly with potential customers on a regular basis. The demand in social networks is significantly expanding due to the information field of people and enterprises, the costs of searching, exchanging and storing information are reduced, the role of information as a resource in the economic management system is strengthened, which helps the enterprise to reach a larger number of consumers, increase

the amount of income and increase competitiveness. The use of marketing technologies allows for the promotion and realization of joint resources of enterprises, including goods and services, and to choose effective methods of promotion of each product separately. It also contributes to increasing the efficiency of their activities. Using social media in marketing builds brand loyalty directly and on a regular basis to interact with potential customers in the digital economy, so many companies understand the importance and necessity of using social media in marketing.

Data management and protection are the main issues that companies need to adequately address so that users feel safe when browsing digital platforms.

Future research will need to analyze how users make decisions online, as well as which digital marketing methods are perceived as safer by users.

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Вплив розвитку цифрових технологій на поведінку споживачів

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Анотація. Визначено, що за останні десятиліття цифрові технології та соціальні медіа призвели до еволюції поведінки споживачів. Досліджено поведінку споживачів у цифрову епоху, стратегії цифрового маркетингу, цифрові бізнес-моделі, такі як мобільні додатки або спільна економіка. Розкрито поняття цифрових стратегій: контент-маркетинг, користувацький досвід, маркетинг впливових осіб, контент, створений користувачами, цифрова передача «з вуст в уста»

Ключові слова: поведінка споживачів, цифрова економіка, цифрові технології, стратегії
