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EVOLUTION OF THE CONCEPT OF DIGITAL MARKETING IN THE CONTEXT OF CHALLENGES IN THE FOURTH INDUSTRIAL REVOLUTION

РОЗВИТОК КОНЦЕПЦІЇ ЦИФРОВОГО МАРКЕТИНГУ В КОНТЕКСТІ ВИКЛИКІВ ЧЕТВЕРТОЇ ПРОМИСЛОВОЇ РЕВОЛЮЦІЇ

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Чукурна О.П., Конак Є.І. Розвиток концепції цифрового маркетингу в контексті викликів четвертої промислової революції. Оглядова стаття.

В статті проведено критичний аналіз наукової думки щодо розвитку концепції цифрового маркетингу. Визначені поворотні моменти у вигляді глобальних мегатрендів, які формують майбутній цифровий світ в контексті четвертої промислової революції. Зроблені висновки щодо векторів розвитку цифрового маркетингу в умовах когнітивної економіки, яка складатиме базис сьомого технологічного укладу. Запропоновано поняття когнітивного маркетингу та обґрунтовані основні напрямки розвитку концепції когнітивного маркетингу. Обґрунтовано виникнення концепції когнітивного маркетингу у майбутньому на базі концепції цифрового маркетингу. Визначені дванадцять правил розвитку концепції цифрового маркетингу, які мають трансформуватися у вектори розвитку майбутньої концепції когнітивного маркетингу. Зроблено порівняльний аналіз концепції традиційного та цифрового маркетингу та сформовані вектори розвитку когнітивного маркетингу.

Ключові слова: цифровий маркетинг, четверта промислова революція, когнітивна економіка, когнітивний маркетинг

Chukurna O.P., Konak E.I. Evolution of the concept of digital marketing in the context of challenges in the fourth industrial revolution. Review article.

The article is content critically analyzes the scientific idea of developing the concept of digital marketing. It was determined turning points in the form of global megatrends, which shape the future digital world in the context of the fourth industrial revolution. It made conclusions about the vectors of the development of digital marketing in a cognitive economy, which will form the basis of the seventh technological order. It was proposed the concept of cognitive marketing and substantiated the main directions of development of the concept of cognitive marketing. It was justified the emergence of the concept of cognitive marketing in the future based on the concept of digital marketing. It have been defined twelve rules for the development of the concept of digital marketing, which will be transformed into vectors for the development of the future concept of cognitive marketing. It have been made f comparative analysis of the concept of traditional and digital marketing and formed the vectors for the development of cognitive marketing.

Keywords: digital marketing, the fourth industrial revolution, the cognitive economy, cognitive marketing

To date, the modern world is developing at a great rate. Developing a modern smart economy, the information society requires new, more convenient digital solutions.

There is an increase in the production of goods, the pace of development in scientific and technological progress. All these processes take place against the background of the achievements of the Fourth Industrial Revolution, which takes place on the transformation of the concept of digital marketing. Thanks to the development of new technologies, the world is becoming more global, which requires the use of digital marketing tools to be competitive in a modern, so innovative society that is changing rapidly.

Analysis of recent researches and publications

The problems of using digital marketing, its tools and methods on the Internet are dealt with by many foreign and Ukrainian scholars such as: L. Weber [1], T.P. Danko [3], O.O. Karpishchenko [4], I.V. Lilyk [5], M.A. Oklander [6], M. Steelsner [7], M. Heyatt [9], R. Hollywood [10]. Taking into account the significant contribution of these scientists to the theory and practice of digital marketing, this problem requires constant research, due to the dynamism of its development. The achievements of scientists are the basis for further consideration of the development of the concept of digital marketing in the face of the challenges of the Fourth Industrial Revolution. Megatrends, which arose as a result of the Fourth Industrial Revolution, made changes in the technical and economic conditions of the developed countries of the world, which in turn caused a change in the vectors of the digital marketing concept's development. This contributes to the actualization of the research issues of the trend, contributing to the transformation of the concept of digital marketing.

The aim of article is to study the vectors of digital marketing concept's development in the conditions of transformations caused by the achievements of the Fourth Industrial Revolution.

The main part

For The high pace of scientific and technological progress and the expansion of the production of consumer goods are demanding new approaches and transforming the views on marketing management. The development of the information society, smart economy, globalization processes necessitate the use of digital marketing, while the paradigm of digital marketing is constantly evolving itself, creating conditions for the successful development and competitive positioning of business.

The term "digital marketing" (digital or interactive marketing) refers to the use of various types of digital channels for the promotion of goods for target customers and business [14]. Another definition provided by Danko T.P. is interpreting digital marketing as marketing, which provides interaction with clients and business partners with the use of digital information and communication technologies and electronic devices, in a broader sense, this... is implementation of marketing activities using digital information and communication technologies [3].

Karpishchenko O.O. under digital marketing understands the use of all possible forms of digital channels to promote the company and its product. Television, radio, the Internet, social media – all these are digital marketing tools [4].

Oklander M.A. provides several definitions of digital marketing and views it as a form of marketing for mass individualization, a 21st century marketing model. He argues that digital marketing is "a kind of marketing activity that, through digital channels and digital methods, allows addressing to interact with target market segments in virtual and real environments" [11]. Identifying that the main strategic direction of digital marketing is a personalized attitude towards users, and promotion channels are: the Internet, local area networks, computers, mobile phones, digital TV, advertising displays, interactive screens, POS terminals. He substantiates the concept of digital marketing, as a result of the evolution of Internet marketing development [11].

Given the significant contribution to the theory and practice of developing the concept of digital marketing by outstanding scholars of our time, it should be noted that digital technology extends not only to the marketing activities of enterprises, but also to other areas. The development and dissemination of information and communication tools contributed to the emergence of an unprecedented phenomenon – the economy of common consumption. This approach involves not just the use of digital technologies, through which the individualization of consumer relations is achieved, it is a new type of economic relations that changes not only the marketing concept but also promotes the transformation of economic laws.

The phenomenon of a common consumption economy is the technological opportunity for individuals or legal entities to share goods or services at a level that was previously impossible at all. Such a distribution of goods or services became possible through the use of digital technologies, especially the emergence of virtual platforms and mobile platforms. They allowed them to reduce transaction costs in the system to the extent that all its participants receive economic benefits.

The economy of common consumption contains a certain number of components and characteristics, which are as follows: availability of a specific technological component; the advantages of ease of access to the product before owning it; interaction between two equal subjects; sharing of personal assets; ease of access to the market; strengthening social interaction; Consumption in cooperation and feedback from consumers in the open access. The most successful examples of the common consumption economy already exist in the transport sector. For example, Uber and Lyft offer efficient taxi services through a mobile application.

The economy of shared consumption is already a consequence of the development of digital marketing and the impact of globalization, which promotes the unification of consumers and producers of goods and their joint production and consumption. In this aspect, globalization, as a phenomenon that promotes the unification of people, without the creation of integration unions between national economies, completely erases the boundaries of not only national economies but also consumer markets. That is why the phenomenon of the economy of common consumption refers to the global mega-trends of mankind, about which scientific discussions are being conducted within the framework of the Rome Club and the World Economic Forum.

The ambiguous consequences of the spread and development of the economy of general consumption can include the following: the emergence of new forms of ownership of assets; the blurring of the boundaries between employment and consumption; the complexity of measuring the effectiveness of the main economic indicators; the complexity of income taxation. However, today there are radical changes in the global economy. Examples of these changes are the activities of such companies as: "Amazon", which is the largest retailer of the world, but it does not physically own any retail store; "Airbnb" is the largest supplier of hotel rooms, without having any hotel in its ownership; "Uber" Company is the largest supplier of transport services without having any means of transport. The emergence of this economic phenomenon has become possible thanks to the proliferation of digital technologies. The economy of compatible consumption completely eliminates all the boundaries and delineation inherent in traditional markets. Its origins were influenced by the so-called "Internet of Things and for Things". The basic idea behind the Internet of things is that with the continuous increase in computing power and lower

prices for hardware devices from an economic point of view it is possible to connect all things to the Internet. World Economic Forum experts predict [12] that in the future, every physical thing can be joined to a single communications infrastructure, and commonly used sensors will allow a person to fully perceive the environment. This tendency also refers to global mega-trends, which revolutionize the way of human life. Its distribution will promote: the creation of new types of business; adding digital products to the main functional product; a shift in the labour markets and professional knowledge; generating additional knowledge and values based on connecting to smart things; automation of work related to knowledge; increase of standards of use of complex and technical goods; a digital twin becomes an active participant in information and business processes and provides ongoing monitoring, management and forecasting. Given this mega-trend, it can be argued that digital technology is not only a tool for promoting products, services and ideas, but is also a product that also needs to be sold with the main function of the product, monitor its distribution and software update information. This direction requires the development of methodological tools of commodity policy in the concept of digital marketing or the justification of its new functional in the digital economy.

In general, the development of digital marketing is influenced by the fourth industrial revolution, which has a complex effect on the economic and technological systems of the countries of the world and contributes to their transformational shift. According to the Report of the World Economic Forum for 2015, the following turning points in the form of global mega-trends that shape the future digital world have been highlighted [2]:

- Implanted technologies (implantable mobile phone, smart tablet, pacemakers, unique chips, smart tattoos) can have ambiguous implications for development, which can include the following: increasing life expectancy; change in the nature of the relationship between people; real-time identification; cultural changes; increase in the effectiveness of treatment; access to personal data; violation of a person's personal life. It is predicted that by 2025 this technology will become so widespread that it will reach a technological shift, that is, it will be adopted by the majority of society. This megatrend will influence the development of digital technologies, their distribution, as a product and total informatization and control of all processes. The spread of such technologies is exacerbated by the moral and ethical principles of relations in society and makes use of the principles of social and ethical marketing in the context of the dissemination of the concept of digital marketing. In these conditions it becomes impossible to consider the tools of digital marketing without taking into account moral and ethical norms and monitoring their compliance.

- Digital presence is due to the availability of the person to the Internet and its activity in the virtual space. Experts from the World Economic Forum predict that by 2025 this mega-trend will achieve a technological shift and an irreversible point. Today, due to the proliferation of digital technologies, a society of common consumption is created, which affects the reduction of logistics chains and logistics costs. This economic phenomenon came about thanks to the Fourth Industrial Revolution, and contributed to the fact that consumers can simultaneously be producers of products and services that contribute to the quality of life standards. In addition, thanks to digital technology, the consumer has free access to information on consumption of goods and services, with the cost of storing this information in the present time is zero (for example, the cost of storage 1GB today is \$0.03 per year compared to \$10000 twenty years ago) [12]. The ambiguous results of this mega-trend development are as follows: more targeted advertising, information and news; constant identification of the person; the convenience of creating and developing a social movement in the on-line mode.
- Digital, as a new interface. The technology of direct access to Internet applications and databases using digital view (digital glasses) will increase the functionality of connecting people with another virtual environment. Today, this technology is already presented in the field of 3D design and 3D graphics, but the turning point will be its distribution of more than 10% market share. Ambiguity of the development of this direction can be the creation of a new segment of entertainment and increased instantaneous dissemination of information.
- The mobile Internet will facilitate changes in personal relationships and image recognition and access to personal data.
- Distributed computations using computer calculations that are rapidly becoming widespread and accessible. Today, 43% of the world's population is connected to the Internet, which surpasses any media channel in terms of distribution, it is expected that in just a few years, three quarters of the planet's population will have regular Internet access. In the future, regular access to the Internet and information will not be the advantage of advanced economies, since wireless technologies require less relevant infrastructure. This megatrend will promote: the dissemination of free access to education, medicine, public services from remote areas and areas with poorly developed infrastructure; free access to information and increased democratization of society. At the same time, the presence of closed platforms can limit the areas of access to the Internet and develop a system of manipulation of public opinion.

- Increase the number of smartphone and other mobile devices users and exceed their number over the owners of the PC. The society is moving toward the development of even more rapid devices that allow solving difficult tasks while remaining mobile. It is highly likely that the number of devices used by each person will grow rapidly not only in terms of new functions that are performed, but also in terms of the specialization of the tasks being solved. At the same time, ambiguous results of the development of this global megatrend are: round the clock use and erase the boundaries between business and personal communication; environmental impact in the production process; increasing manipulation of public opinion at the expense of restrictions on access to information and manipulation of information.
- A repository at all – this means achieving 90% of humanity access to unlimited and unpaid data storage. According to the forecasts of the experts of the World Economic Forum, the turning point in this direction should also take place in 2025. Today, there is a clear tendency to commercialize storage capacity of storage devices and databases. The main reason for this trend is the fact that the price of information storage falls exponentially (about every five years) [13]. This information is very interesting, given that about 90% of all data in the world has been created over the last four years, and the amount of information created by enterprises is doubling every 1.2 years. Information storage services also become a commodity that is owned by such companies as Amazon Web Services and Dropbox [12]. The world is moving to a complete transformation of the storage of information into goods, with the provision of unlimited free access to users. A large number of companies today also provide free cloud storage from 2GB to 50GB. The undoubted disadvantage of this megatrend is the interference with the private life of a person, but at the same time an unconditional positive effect is an increase in content volumes, its eternal storage and overall consumption.
- Connected home. Today there are structural changes and changes in the field of automation of households, which allows a person to manage simultaneously the system of lighting, conditioning, ventilation, audio and video content, security and home appliances. This technology ensures the efficiency of resource utilization, comfort and safety of the person, while making it more vulnerable to cyber attacks and observing her personal life. However, the turning point for technological change will come at a time when 50% of the Internet traffic will fall on devices.
- "Smart cities". World Economic Forum experts predict that by 2025, in most major cities on the planet, all city services (utility services, electricity and communication services, supplies, logistics services, passenger transport, etc.), utilities and roads will be connected to the Internet [2]. Such smart cities will control the flow of energy, materials, logistics and traffic. Progressive cities such as Barcelona and Singapore today are implementing a variety of data-based services, including intelligent parking solutions, intelligent garbage collection and intelligent lighting. Smart cities are constantly expanding their network of sensor technology development and are working on platforms that collect information from sensors. These platforms become the focal point for connecting various technology projects and adding various services to them. Ambiguity of the development of this direction may be the change in the nature of the city's residence and the impact on urban culture. However, the positive effect of this trend is more than negative and manifests itself in the following: the growth of labour productivity; process automation; increasing access to resources and transparency of their use; reducing the cost of services; increase of mobility level; quick access to service markets.
- "Big Data" (large data) for decision making. Using the benefits of "large data" allows faster decisions in a wide range of industries, using mobile applications and the Internet. Automated decision making can simplify the lives of citizens and allows businesses and government to provide real-time services as well as comprehensive support based on customer interaction. The effective use of "Big Data" technology is associated with the creation of consumer confidence in algorithms that take automated solutions. This process will be associated with changing the mentality of a person and creating a security system for access to her personal data. In addition, complete automation of many systems will destroy many professions or replace them with other activities. A definite positive impact of the introduction of this technology is the cost savings, the speed of decision-making and the introduction of innovations.
- Unmanned vehicles. Implementation of this technology will increase the level of safety, reduce the negative impact on the environment, reduce the level of stress and aggressive behavior on the roads. However, it will become an irreversible move to the unclaimed occupation of the driver and a reduction in the total number of cars. In 2012, the United States in Nevada has already passed a law that allows the movement of unmanned vehicles. In 2015, Tesla has already developed cars with a semi-autonomous driving function using upgraded software. Google plans to sell unmanned cars by 2020 on the USA market. Experts believe that the turning point of this technology will come when the distribution of unmanned cars in the USA market will reach almost 10% of the total car market.

- Artificial intelligence and decision making. Scientists have found that artificial intelligence can be used effectively during searching for reproducible combinations and automating processes. In addition, driving with artificial intelligence can draw conclusions from past situations to provide input information and automate the process of making complex decisions in the future, accelerating the receipt of concrete conclusions. This trend will affect the computerization of a number of trades in the future, the complete replacement of human labour with artificial intelligence. The study, which was conducted by the Oxford-Martin School, was aimed at studying the propensity of computerized workplaces through artificial intelligence and robots, which allowed for a number of interesting results. The model used by them for forecasting has shown that up to 47% of jobs in the USA in 10-20 years will become fully computerized. The greatest risks of complete replacement of artificial intelligence are the following areas of activity: management, business and finance; computer equipment, engineering and science; education, jurisprudence, public service, art and the media; physicians and technical staff in health care; service industries; trade; office and administrative activities; agriculture, fishing and forestry; construction and extraction of minerals; maintenance and repair; production; transportation and logistics [15].
- Robotics and services. Robotics starts to affect a large number of professions – from production to agriculture; from retail sales to services. According to the International Federation of Robotics in the world today there are 1.1 million functioning robots, and in the manufacture of cars 80% of work is performed by a robot. In addition, robotics has also gained considerable popularity in the field of logistics, warehouse management, and automation of the transportation of raw materials and materials in inland logistics.
- Blocks chain. The block chain technology is based on the ability to track a trusted transaction system in a certain way. This technology is the basis for the creation of digital currencies. Bitcoin and other digital currencies are created using "block chain" technologies. It is forecasted that by 2025, 10% of the world's gross product will be stored using the "block chain" technology. The chain of blocks creates both opportunities and risks. On the one hand, it is not controlled by any central bank, which makes it possible to avoid monetary regulation. On the other hand, this technology creates opportunities for building new tax mechanisms directly into the chain of blocks (for example, transaction tax). "Block chain" technology creates a phenomenal economic environment on the Internet, which increases the amount of liquid assets by processing all types of exchange of valuables and completely eliminates the need for financial intermediaries. In addition, a high level of transparency is ensured, due to the fact that the technology of "block chain" is a world-wide bookkeeping book that stores all transactions made. The turning point that will create a technological shift will be the government tax collection system with the help of "block chain" technology. For example, the Estonian government became the first in the history of the real government, which uses the technology of "block chain".
- 3D printing technology. The use of 3D printing technology is being implemented today in many spheres of activity, from the production of goods and housing construction to health and medicine. In the field of production, the use of 3D printing technology has a positive effect in the following areas: accelerating product development; shortening the life cycle of the product at the stage of "developing a new product-production"; Ease in the production of complex parts; significant reduction of costs and the issuance of minimum batches of goods; the potential for instant copying of any innovation. In the sphere of production and consumption of consumer goods, the positive effect of the use of 3D printing technology will be achieved in the greater personalization of products and individual production; creating niche products for narrow market segments; reduction of logistics costs and more efficient use of energy and resources. The unconditional negative consequences of the introduction of this technology are: the destruction of global logistics chains and job cuts; increase of pollution of the environment; a significant destruction of the control system for production, compliance with product quality standards, trade barriers, taxes and other economic constraints, and the need for a system of adaptation to such changes. Distribution of 3D printing technology will facilitate almost complete replacement of mass production of goods and the use of promotion methods only through digital marketing technologies.
- Gene engineering. The revolutionary nature of this technology lies not in the ability of scientists to modify the genes of plants and animals, but more lightweight, which is provided by sequencing and modification technologies, which will significantly increase the number of researchers who will be able to carry out their own experiments. Already, technology of genetic engineering is widely used in agriculture, ecology and medicine. The ambiguity of the impact of this technology lies, first of all, in the plane of moral and ethical norms and the impact on health and safety of human life. In the context of the concept of marketing, the emergence of fundamentally new products, with innovative functional capabilities. This direction contributes to the emergence of new needs in society and the

satisfaction of existing needs through new product opportunities.

- Neuronal-technology. Neuronal feedback provides the ability to monitor brain activity in real time and offers many opportunities for areas of its use. The profound changes that arise from the implementation of these technologies are to expand the cognitive capabilities of the person in the field of consumer behavior, the emergence of new types of behavior and the erosion of the boundaries between man and machine. However, there is a great danger of the destruction of human creative activity, the reading of human thoughts, full control over human behavior and the erosion of personal boundaries in full.
- Neuronal-technology is associated with the development of a cognitive economy, which is the basis for the development of the seventh technical and economic structure. It is believed that it is in the conditions of the development of the seventh technological structure that there is another factor of production – the creative intelligence, which changes the production function and, accordingly, the practice of economic relations. The basis of the emergence of creative intelligence is also neuronal-technology. At the same time, in the cognitive economy there are also the following technologies that will affect the formation of the basis of the seventh technological structure:
 1. Neuronal-imaging, which means monitoring brain activity. These technologies have created the foundation for the emergence of the following four trends.
 2. Cognotropic drugs – are drugs that improve intelligence and memory, reduce sleep and help to concentrate. Forecast of access to the market of powerful activators of brain activity of the new generation.
 3. Cognitive assistants – are systems of adaptive human support in dynamically changing technical environments. Cognitive assistants will significantly expand the range of communications on the Internet and social networks. They will help not only communication, but also allow to keep track of the person's attention at a distance. The spread of such technology will change the methods of promoting goods and services and will allow instantaneous information on consumer reactions.
 4. The brain-machine interfaces are aimed at fixing human reactions under the conditions of various factors. In the present, the systems of control, which follow the direction of view, are already developed and successfully used. In addition, methods of electroencephalography are used, which allow guessing the person's desires and executing imaginary commands.
 5. Artificial sensory organs, which include neuronal-proteases, artificial memory, and others. Already, scientists have learned to create a human eye that

distinguishes between colors and light and dark, makes micro-focus, and so on.

In the context of the development of technologies that will form the seventh technological method, Fedulova L.I. expresses the following opinion: "In this way, technology applies to reflection and management. It places emphasis on the subject applying technology. Thus, there are serious reasons to think that the technologies of the seventh structure will be socio-humanitarian..." [8]. Thus, the basis of a cognitive economy will form artificial intelligence in a combination and close interconnection with human intellect. This technical and economic approach will affect the change and complete transformation of economic laws and consumer behavior. Under these conditions, consumer behavior can become fully managed and the traditional marketing toolkit will be completely lost. At the same time, the tools of the concept of digital marketing are subject to transformation. This process will depend on the spread of the seventh technical and economic structure and its impact on the global world. In the context of the continued use of the above mentioned cognitive technologies, it will be possible to assert the emergence of a new concept of marketing – cognitive marketing, which is a continuation of digital marketing concept. But, unlike the latter, cognitive marketing can, through the neural channels of communication with the human brain, fully influence the behavior of the consumer. Moreover, the stage of consumer choice based on the information that they receive can be completely ignored. Thus, the author's definition of cognitive marketing is as follows. Under cognitive marketing, we will understand the marketing activity that is carried out with the help of cognitive technologies that combine the interaction of artificial intelligence with the human intellect. Cognitive marketing should be aimed at seeking tools to influence consumer behavior through cognitive technologies. Although, this aspect of marketing activity should be governed by moral and ethical standards, which should be fixed at the legislative level. However, the concept of cognitive marketing – this is still a future, not confirmed by practice, but today there are its first signs in the digital economy, and especially in the concept of digital marketing. Let's consider some fundamental concepts of digital marketing concept, which will influence its further development.

Taking into account the conducted analysis of mega-trends, the emergence of which became possible as a result of a number of factors caused by the fourth industrial revolution, one can distinguish the following twelve rules for the development of the concept of digital marketing, which must be transformed into vectors for the development of the future concept of cognitive marketing:

1. Consumers are seen as active participants in the process of promoting products, services and ideas. The concept of the target audience loses its meaning and function. No longer passive viewers and not even the target audience, but active

- participants who must be involved as creators, commentators and distributors. The proliferation of neuronal-technologies can greatly facilitate systems for promoting goods and services through digital channels. Involving cognitive technologies in marketing activities will not create a system for controlling consumer behavior and automatically track the reaction of consumers to external factors.
2. Marketing activities require more efficient planning and beyond the traditional frequency and coverage rates, since the effective use of digital marketing tools involves the continued involvement of consumers in the communicative process. This trend of digital marketing will remain relevant in a cognitive economy.
 3. Marketing activities should be clearly coordinated with the goals of marketing, which determines the most effective set of channels.
 4. The use of the concept of digital marketing involves the development of high-quality content to ensure and maintain a constant interest of consumers.
 5. The functions of marketers are increasingly reduced to encourage, stimulate, and even encourage consumers to create content in accordance with the company's general policy.
 6. Correspondence with consumers should be made from the declared benefits of each consumer, taking into account moral and ethical standards and only with their permission.
 7. There is a need to use digital promotion channels, the effectiveness of which can be calculated using economic indicators.
 8. Marketing activities should be based on active interaction with the consumer through the digital channels for the promotion of goods and services. Moreover, this aspect should not violate moral and ethical norms. The use of elements of the concept of social and ethical marketing does not lose its relevance.
 9. The center of marketing activity shifts towards individualization of work with each consumer and active interaction with him. This vector creates the basis for using the skills to coordinate consumer

- behavior and use this knowledge in a cognitive economy.
10. The use of technology "Big Data" (large data) will become the basis not only for making decisions in marketing activities, but also for the accumulation and use of information about consumer behavior. This direction forms the future vector of development of the concept of cognitive marketing.
 11. The digital economy has created conditions for the realization of marketing activities in real time. The development of this vector of the concept of digital marketing contributed to the emergence of the following mega-trends, such as: implantable technologies; increase in the number of smartphone and other mobile devices users; digital presence on the Internet; Neuronal-technology. The influence of these mega-trends in conjunction with artificial intelligence forms the vector of development of the concept of digital marketing towards the development of cognitive marketing.
 12. By the method of effective communication with people, in digital marketing, everything will be optimized for the address of the channels in marketing-mix. By this rank, all people are interested in seeing things, staying with them, formulating the vector of development of the country economy.

An unconstrained tendency to expand the concept of digital marketing is the struggle for consumer attention through various digital channels, which use interactive methods of interaction with the consumer. This peculiarity of the digital economy will deepen and expand in the future, which can be attributed to the basic vectors that define the evolution of the concept of digital marketing. Moreover, the use of neuronal-technologies contributes to a new channel for the dissemination of information – a neuronal-canal and neuronal-prosthetics, the use of which is possible as a means of disseminating any information, including marketing.

The analysis allowed to develop a comparative analysis of traditional and digital marketing concept and vectors for the development of cognitive marketing (tab. 1.).

Table 1. Comparative characteristics of the concept of traditional and digital marketing and vectors for the development of cognitive marketing

Elements of marketing, which fundamentally change	Traditional marketing	Digital marketing	Vectors of development of cognitive marketing
1	2	3	4
Goods	The product is considered in the traditional aspect in terms of its three levels. This is a traditional approach to product creation in marketing, which affects the formation of other elements of the marketing mix. The product is considered only in real performance and has a physical appearance. A clear distinction between the functions of goods and services.	The product is considered in terms of five levels. Moreover, the fifth level, which is formed at the expense of innovation, can have a digital component. The fourth level of the product is aimed at creating the uniqueness of the product, which is achieved at the expense of the digital component.	A functional product or service has a mandatory digital component. In addition, there are self-contained digital products such as: a smart tablet, pacemakers, unique chips, smart tattoos, etc. The development of neurotechnologies promotes the emergence of such unique products as neuroprosthetics, which can combine the functions of the product and the channel of promotion of product information.

Continuation of the table 1

1	2	3	4
Price	Pricing is based on traditional approaches where demand, cost and competition factors are key.	Pricing is carried out in real time, regardless of where the buyer and seller are. On the Internet, there is free access to price information and there are no psychological factors affecting the consumer. In addition, information on the Internet is also a commodity for which pricing methods are distributed. However, the price of information is constantly decreasing. The main difference in the pricing on the Internet is the lack of intermediaries, due to which reduces logistics costs and, accordingly, prices by 20-30%.	Under new economic conditions, new goods and services are not competing, have zero marginal costs or go to highly competitive markets through digital platforms. All these factors contribute to lowering the price. The real-time pricing trend will be maintained by the fact that digital products will combine product features and the product promotion channel. In addition, the emergence of many products that will be integrated with artificial intelligence will contribute to the need for continuous software updates, which should be taken into account in price discounts or bonuses.
Communicative policies and promotion channels	The communicative policy is aimed at informing consumers about goods and services through the following communication channels: Media (print and television); Direct mail; Outdoor advertising. Traditional promotion channels are used	Consumers are active users of the Internet and independently find the information they are interested in. Consumers most often use the following digital channels: <ul style="list-style-type: none"> — Web sites; — Social networks (Facebook, Instagram, etc.); — Banner and context advertising; — Ads in search engines (Google, Yandex, etc.); — Video Conversions and Web Conferencing. 	Channels for promoting products will almost completely coincide with communicative channels. The reason for this is the fact that digital technology is not only a tool for promoting products, services and ideas, but is also a product that will be required to be sold with the main function of the product, to control its distribution and software update information

Source: own elaboration

Conclusions

The analysis of the development of the concept of digital marketing in the conditions of the fourth industrial revolution made it possible to draw conclusions about the impact of global mega-trends, which shape the future digital world on changes in marketing theory. It is concluded that the vector for the further development of conceptual positions in the theory of marketing will be based on the concept of digital marketing. However, the current trends in the development of techno-economic patterns of countries in the conditions of the fourth industrial revolution

make it possible to realize that the future world will be based on a cognitive economy. It is precisely cognitive technologies that are already forming the seventh technical and economic approach, which will have a tremendous effect on the transformation of marketing concepts. The authors proposed the definition of the concept of cognitive marketing and justified the twelve rules of development of the concept of digital marketing, which should be transformed into vectors of the future concept of cognitive marketing.

Abstract

The article is content critically analyzes the scientific idea of developing the concept of digital marketing. It was determined turning points in the form of global mega-trends, which shape the future digital world in the context of the fourth industrial revolution. It made conclusions about the vectors of the development of digital marketing in a cognitive economy, which will form the basis of the seventh technological order. It was proposed the concept of cognitive marketing and substantiated the main directions of development of the concept of cognitive marketing. It was justified the emergence of the concept of cognitive marketing in the future based on the concept of digital marketing. It has been defined twelve rules for the development of the concept of digital marketing, which will be transformed into vectors for the development of the future concept of cognitive marketing. It have been made f comparative analysis of the concept of traditional and digital marketing and formed the vectors for the development of cognitive marketing. It was concluded that the vector for the further development of conceptual positions in the theory of marketing will be based on the concept of digital marketing. However, current trends in techno-economic structures in terms of the fourth industrial revolution makes it possible to realize that the future world will be based on cognitive economy. It is precisely cognitive technologies that are already forming the seventh technical and economic approach, which will have a tremendous effect on the transformation of marketing concepts.

The authors proposed the definition of the concept of cognitive marketing, which should be understood marketing activity, which is carried out with the help of cognitive technologies, which combine the interaction of artificial intelligence with the human intellect. The emergence of a new concept of marketing - cognitive marketing, which becomes a continuation of the concept of digital marketing. But, unlike the latter, cognitive marketing can, through the neural channels of communication with the human brain, fully influence the behavior of the consumer. Moreover, the stage of consumer choice based on the information that they receive can be completely ignored. Thus, this aspect of marketing activity should be governed by moral and ethical standards, which should be fixed at the legislative level.

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