

SMART MARKETING AND GLOBAL LOGISTICS NETWORKS

Iryna Kalenyuk¹, Viktoriia Riashchenko², Iryna Uninets³

Abstract. In the context of the global digital transformation, new communication systems are being formed based on networking and platforms, increased attention to environmental issues and social needs of the population. The purpose of the article is to identify the peculiarities of smart marketing development in the context of global logistics networks. Using the methods of system analysis, the article summarises the processes of spreading smart technologies at all stages of marketing: from smart supply to smart consumption. Graphical visualisation confirms the growth of spending on the latest information technologies in marketing strategies. The essence of the smart marketing concept is revealed: it is becoming digitised and focused on sustainable development, based on personalisation of offers and advertising, acceleration of the purchase or delivery of goods, and focuses on reasonable consumer requirements. A market for new products is emerging, with a high share of digital components, eco-friendly and organic products. Smartisation processes are transforming the logistics activities of companies. New technical solutions (big data, cloud solutions, augmented reality, drone delivery, etc.) help create competitive advantages for the company, increase the efficiency of its solutions, and significantly expand the range of opportunities: personalisation of demand, satisfaction of individual customer requests, improved communications and service, scaling up operations, deeper analysis and forecasting, and the introduction of dynamic pricing.

Keywords: digital transformation, global supply chains, information and communication technologies, smartisation, generative artificial intelligence, advertising robot.

JEL Classification: M30, M31, M37, O33

1. Introduction

The processes of smartisation, greening, socialisation, digitalisation, networking, platformisation, etc. are the defining trends of modern global development. These processes are driving radical changes in the economy, manufacturing and other sectors. The new digital era brings smart approaches to all areas of economic activity. For example, the market is subject to new rules and realities based on the requirements of both market participants and external factors that set the framework for economic activity. In particular, market relations, characteristics and peculiarities of market participants are taking on new forms (Digital marketing).

Rapid digitalisation is leading to the widespread use of the latest technologies: artificial intelligence, the industrial Internet of Things, robotics, big data, cloud

computing, etc. The penetration of these technologies into all stages and areas of economic activity leads to the digital transformation of the entire economy. New ways of communication based on networking and platforms are being developed. According to Huawei experts, there will be 100 billion digital connections by 2025, and the global Internet of Things (IoT) market will be worth 2 trillion USD (Huawei).

Smart marketing is being shaped by information and communication technologies and global market transformations. Smart technologies are spreading at all stages of companies' activities: from smart supply to smart consumption. Accordingly, the need to study the processes of implementing smart technologies at each stage of interaction between all economic entities, from production to demand generation, is becoming more relevant.

¹ Kyiv National Economic University named after Vadym Hetman, Ukraine (*corresponding author*)

E-mail: kalenyuk@ukr.net

ORCID: <https://orcid.org/0000-0003-1807-2849>

ResearcherID: G-1149-2017

² ISMA University of Applied Science, Latvia

E-mail: viktoriia.riashchenko@isma.lv

ORCID: <https://orcid.org/0000-0003-1783-3079>

³ Kyiv National Economic University named after Vadym Hetman, Ukraine

E-mail: germanirina777@gmail.com

ORCID: <https://orcid.org/0000-0002-1690-6590>



In addition, attention to environmental issues and social demands of the population is becoming a defining feature of the modern economic paradigm. This means changes in the processes of demand generation, which requires more environmentally and socially oriented goods and services. New marketing models are needed, which should be smart and focused on developing innovative strategies with long-term sustainable economic goals.

2. Literature Review

The use of information technologies, especially the Internet, radio, social networks and big data, is becoming a competitive advantage for companies in the promotion and sale of goods and services in the market (Baer, 2013; Grant, 2007). The variety of conceptual and applied articles on the marketing of the future is based on the rapid implementation of smart technologies of new generations, increasing the interest of researchers in the marketing of the digital era (Diaz, Esteban, Carranza Vallejo & Navarro 2022). The emergence of the term SMART Marketing as a new phenomenon is connected with the research of T. P. Oh, who justifies the new marketing model on the basis of focusing goals on quick and high return on investment in the market of goods and services. The SMART marketing method allows to analyse and practically implement smart activities of the company and personnel in the marketing strategy, reduce costs and increase sales (Oh, 2015). The author suggests seven steps to create a smart marketing plan: 1) define one's real product; 2) define one's real market; 3) determine if it meets market requirements; 4) set the selling price and marketing factors; 5) develop marketing activities; 6) develop a company plan; 7) finance and implement (Oh, 2015).

Current research on the newest trend in marketing – smart marketing – covers the justification of the potential use of blockchain technologies, the Internet of Things, branding, big data and other smart technologies. In particular, the Internet of Things improves customer experience, increases the amount of data received through connected devices, and expands the scope of analytics, which provides a number of marketing opportunities, such as more efficient sales of goods and services and the potential creation of new products and services (Barbosa, Simoes & Filipe, 2018). The use of big data in marketing allows marketers and managers to formulate strategic directions and practical analytical solutions, link data and analytics to specific goals and processes to implement smart marketing, conduct market research, and manage customer relationships (Verhoef, 2016). Special attention of scientists is paid to the problems of development of logistics chains (Du Toit, 2014; Maksimchuk & Vojtko, 2020; Skicko, 2016; Sumetc &

Borisenko, 2017; Sumetc, 2018). D. White emphasises the need to implement a smart branding strategy, which implements the design of leading methodologies for copying and tracking brands and forms the company's own competitive and recognisable brand (White, 2020). Other researchers emphasise the potential opportunities of using artificial intelligence in smart marketing (Davenport, 2020; Mazur & Ivankevich, 2010). A very important role in the formation of smart marketing is played by blockchain technology, which can be effectively used in the development of marketing applications (Marthews & Tucker, 2023).

Thus, modern smart marketing is based on the widespread use of digital technologies. At the same time, the development of smart marketing methodology and empirical research is gaining global characteristics, synchronising with the development of smart technologies and global digitalisation. These processes require further research, as theory and practice are developing extremely rapidly and provide a wealth of material for study and analysis.

The purpose of the article is to identify the peculiarities of development of smart marketing in the context of formation of global logistics networks.

3. Summary of the Main Provisions

All components of the traditional marketing mix – 5Ps (product, price, place, promotion, people) – are undergoing significant changes under the influence of digitalisation and greening. A market for new products is emerging, with a high share of digital components, eco-friendly and organic products. The spread of environmental imperatives in society is driving demand for goods that are environmentally friendly, harmless to the human body, free of hazardous waste, etc. Digitalisation is manifested through the formation of a market for fully digital products and services, platformisation, digitisation of existing physical products, parts of production processes and individual elements.

Demand generation is increasingly focused on new products with a significant digital or intelligent component. An example of this is the popular concept of the smart home, where all household appliances can be controlled remotely and operate autonomously. Many of the latest goods, services and their production methods are based on Artificial Intelligence (AI) technologies, which are fundamentally changing both production itself and all value chains. Companies are using AI technologies to improve the efficiency of customer communications. For example, in March 2020, McDonald's made the largest investment in technology in the amount of 300 million USD, acquiring a Tel Aviv-based startup to provide a personalised

customer experience using artificial intelligence (Artificial Intelligence Market Growth).

In 2021, the global artificial intelligence (AI) market was valued at 87.04 billion USD, and according to Precedence Research, the AI market size will grow at a CAGR (compound annual growth rate) of 38.1% to reach 1.591 billion USD by 2030 (Artificial Intelligence Market Size to Surpass).

The highest demand for AI technologies is observed in such industries as retail, BFSI (banking, financial services and insurance), healthcare, food and beverage, automotive, and logistics. The increasing adoption of AI technologies in pharmaceuticals is also expected to accelerate market growth in the coming years.

According to a new report by the International Data Corporation (IDC), global artificial intelligence (AI) market revenues, including software, hardware, and services, will grow by 19.6% (year-on-year) from 432.8 billion USD in 2022 to 500 billion USD in 2023. IDC estimates the global AI market to be worth 136.55 billion USD in 2022, growing at an average of 37.3% per year. The market leader is the advertising and media segment, which will account for more than 19.5% of global revenues in 2022. Such a high share is linked to the growth of marketing applications of artificial intelligence. For example, in January 2022, Cadbury launched an initiative that allowed small business owners to use AI tools to create free advertisements using the faces and voices of celebrities (Global artificial intelligence spending).

Experts at the McKinsey Global Institute predict that by 2030, around 70% of companies will be using at least one type of artificial intelligence technology, while less than half of large companies will be using the full spectrum. It is estimated that AI could add around 13 trillion USD to the economy by 2030, increasing global GDP by around 1.2% per year (Economic impacts of artificial intelligence (AI)).

The proliferation of artificial intelligence, networking and the Internet of Things technologies is leading to personalisation of offers and advertising, selection of the best options and service methods, and acceleration of the process of purchasing or delivering goods. Consumer demands are placing limits on the production of goods and creating new realities in the promotion of goods to the market. This is how the concept of smart marketing, smart consumption and the smart market as such is being formed.

The term "artificial intelligence marketing tools" has emerged, meaning software or a platform that uses artificial intelligence technology to collect data, analyse it and make decisions automatically. Such tools make it possible to predict consumer actions and act on them without human intervention. In other words, these tools are capable of making automated decisions at the speed of light (Mileva).

AI marketing tools help: create promotional content, improve customer interactions, plan and forecast sales. Content is the main driver of marketing, and its creation, message automation and customer interaction are key success factors. AI marketing tools automate messages, help create content, and improve communication across marketing platforms and social networks.

The concept of Generative Artificial Intelligence (GenAI) is also new. It is a type of artificial intelligence that can create a variety of texts, images, videos, audios, 3D models. Based on learning patterns from existing data, GenAI creates new unique knowledge that can be very realistic and similar to human creativity. This makes it a valuable tool for solving complex problems in many industries, creating works of art and even assisting in scientific research (All Things Generative AI).

Generative AI programs such as ChatGPT, GitHub Copilot, Stable Diffusion, and others can perform many routine data processing, reorganisation, and classification functions. They have become popular

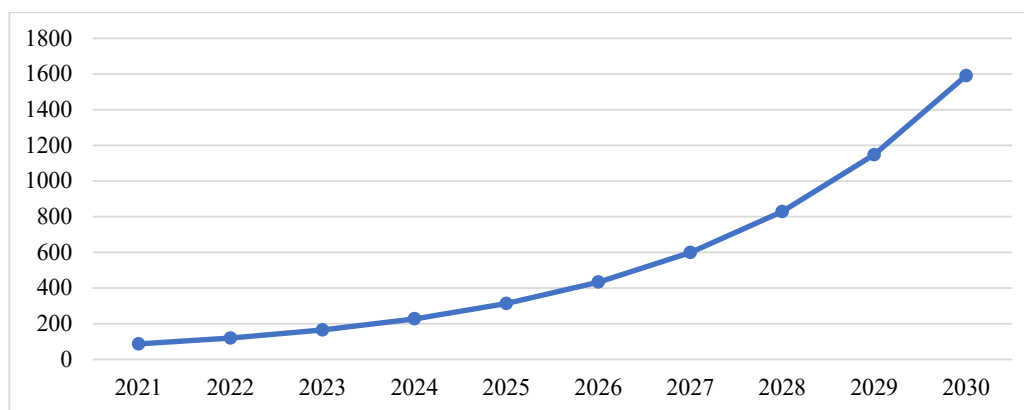


Figure 1. Artificial intelligence market size, 2021–2030 (billion USD)

Source: (Artificial Intelligence Market Size to Surpass)

among consumers for their ability to write texts, compose music, and create digital art. Generative AI technologies are spreading at an incredible rate. ChatGPT was launched in November 2022 and has been constantly improving since then. Four months later, a new GPT-4 model with significantly improved capabilities appeared, and in May 2023, new advanced features including Search Generative Experience and PaLM 2 were introduced. By May 2023, Anthropic's generative AI, called Claude, was able to process 100,000 text tokens (that's about 75,000 words per minute – the length of an average novel), while back in March 2023, approximately 9,000 tokens were processed (The economic potential of generative AI: The next productivity frontier).

Artificial intelligence technologies allow for flexible pricing management. Prices for goods or services can change very quickly and flexibly depending on the situation, the ratio of supply and demand for the product. AI-based tools allow to quickly change prices to get the best margin. The best example of dynamic pricing is hotel or airline booking websites, where prices go up or down depending on availability.

Artificial intelligence technologies provide fast processing of customer data and browsing history, help identify the products that customers like best, collect information from conversations with customers, and identify what can be done better. In this way, generative artificial intelligence helps to improve the quality of work and coaching of sales agents.

Knowledge of customers and their preferences allows marketers to predict future sales, thereby optimising inventory and focusing advertising campaigns on the most popular products. According to McKinsey, applying generative AI to customer service functions can increase productivity by 30–45% of the current costs of these functions.

Generative AI is particularly useful for identifying patterns in an ocean of unstructured, contradictory and disparate data (social media, news, research, customer feedback). Information from different databases is not always easy to interpret and systemise. It is AI that makes it possible to get generalised feedback from customers, model customer behaviour and target profiles, and generally identify the main trends, key factors and development prospects.

Artificial intelligence technologies can be very useful for consumers, as understanding a customer's profile allows for a much more personalised search for goods or services. Based on individual user tastes, behaviour and purchase history, offers are generated with a suitable product offer. All of these technologies together significantly increase the efficiency of e-commerce.

The term "advertising robots" (advertising robots, adbots), "advertising bot" or "advertising automation

tool" is used to refer to an automated system or software for managing and optimising digital advertising campaigns. Advertising robots allow to analyse large amounts of data, automate the entire process of creating advertising (content, placement, and time), and monitor and report on its effectiveness. They are paid for each click on search engines (Google, Bing, etc.) or social media (Facebook, Instagram, Twitter, etc.). Thus, all stages of the advertising process are automated, which significantly reduces time and money, as well as increases the efficiency and effectiveness of advertising campaigns.

One of the key advantages of advertising bots is their ability to significantly expand their scope. A single advertising bot can create and distribute marketing campaigns to millions of people in a matter of seconds. They can also analyse huge amounts of customer data to gain insights that a marketer would not be able to obtain on their own.

Marketing interactions with customers can be greatly automated with the help of artificial intelligence, as it allows marketers to create effective email communications with customers. By automating standard operations, AI tools significantly reduce the time spent on correspondence, content creation and analysis.

The following types of advertising robots are distinguished: chatbots (robots designed to communicate with clients in a conversational form, they can answer questions, provide recommendations and even make sales); software advertising robots (designed to automate the process of buying and selling advertising space on the Internet); creative robots (designed to create and develop marketing campaigns, they can write advertising texts, develop graphics and even create videos).

Chatbots are designed to improve customer service, answering the most common questions about the price, availability of a product or service. Generative chatbots based on artificial intelligence can simultaneously serve a much larger number of customers, speed up the communication process, provide answers to various requests from a wide range of customers, and at the same time reduce the time spent on contact with human agents. According to McKinsey, this reduction can be up to 50 %.

The study found that one company with 5,000 customer service agents that adopted generative AI could increase problem resolution rates by 14 % per hour and reduce time spent on resolving a problem by 9 %. It also reduced agent attrition and the number of calls to managers by 25 %.

Bots offer significant benefits in terms of increased efficiency, personalisation, cost savings and scale. At the same time, there are challenges associated with their emergence: difficulties with integration into existing marketing systems; ethical considerations

related to data privacy and bias in certain algorithms; lack of intuition and limited creativity.

Despite some challenges, the benefits of using advertising robots are clear, and they are increasingly becoming a mainstay of the advertising industry. By using automation and robotics, marketers can create and distribute campaigns more efficiently and send personalised messages to each individual user (The Rise of Advertising Robots: How They're Changing the Advertising Industry).

McKinsey estimates that generative AI can generally increase the productivity of the marketing function by 5-15% of total marketing spend. This data does not fully take into account the additional revenue that generative AI can bring to sales functions. For example, the ability of generative AI to identify potential customers and follow up can help increase the customer base and, consequently, additional revenue.

In general, there are many ways to use artificial intelligence in marketing. The use of generative artificial intelligence in 16 business functions can provide a total value of 2.6 trillion to 4.4 trillion USD in annual economic benefits when applied in different industries (Economic impacts of artificial intelligence (AI)).

In the context of all-encompassing digitalisation, the tremendous acceleration of information transmission and processing, the activities of a marketer do not even require his presence in the office, which greatly simplifies work with foreign companies and creates opportunities for marketing outsourcing. This, in turn, has led to the emergence of a "new generation marketer" who works in Industry 4.0 and Industry 5.0, where people from different countries can be involved in one project (Grant, 2007). The number of marketers working in the e-commerce mode in online markets is growing (Diaz, 2022).

It is worth noting that any production in the current structure of the global market cannot be isolated; it is always a structural element of global production and supply chains and is influenced by global trends. The smartisation of companies' economic activities is linked to the concept of Industry 4.0, which defines new rules of the game in the market. The emergence of Industry 4.0 forms the basis for a new type of market relations, which involves the development of supply chains and new types of production networks. Comprehensive computerisation, digitalisation, penetration of new technologies, artificial intelligence are global development trends that form not only the prerequisites for market development, but are certain supra-global trends in shaping the entire system of relationships, changing the structure and quality of the business environment, supply chain management, etc. In general, the concept of Industry 4.0 is both the result and the basis for the development of smart technologies. The key components of Industry

4.0 include big data, cyber systems, modelling, cloud technologies, 3D printing and virtual technologies.

At the same time, development in the modern world is so rapid that experts are talking about Industry 5.0, which differs from Industry 4.0 in two key ways. Firstly, it is fully compliant with the green course, which leads to better sustainability and a circular economy. Secondly, by increasing the resilience of value chains and ecosystems to new shocks, whatever their source (pandemics, natural disasters, geopolitical changes, regional wars, etc.) (Industry 5.0).

It is worth noting that smartisation processes are also transforming all logistics activities of companies. Some logistics companies are actively implementing smart technologies in their operations, for example, Gruzovychkoff LLC. In partnership with Accenture and GE, the companies are developing and implementing an intelligent logistics service management system that integrates data from multiple sources to operate and manage risks in logistics networks in real time. Orgánica is working with Silicon Microgravity to develop special sensors to optimise operations and improve logistics productivity, and these sensors have contributed to an overall 2% increase in efficiency. The Chinese platform AliExpress is actively implementing the development strategies "Digital Staff", "Robotisation", "Digital Ecosystem" in its logistics support systems. The company "ONT-logistic" is implementing three key digital projects: "Digital Shelf", "Digital Workspace" and "Robotisation" (Maksimchuk, 2020). All these numerous examples demonstrate that modern business is aware of the need to move to Industry 4.0 technologies and, accordingly, to ensure the transformation of production facilities and supply chains.

There are numerous examples of modern companies implementing certain elements of Industry 4.0 in their economic activities. For example, the company "PizzaSushiWok", which is being developed together with IBM, uses cognitive technology for the upstream segment, which allows to focus on the level of productivity and efficiency of logistics services when looking for new resources (MWC19). Uber is also using cognitive technologies, in particular the Face API, to increase the level of safety for drivers and passengers. Uber uses Microsoft Cognitive Services to prevent cars from being used by drivers other than the one with the account. It uses an additional verification stage that is fast, works on all smartphones and in low light, and covers more than 1 million partner drivers (Microsoft).

Another company that is actively implementing AI technologies in its operations is Airbus, which is actively using sophisticated, advanced solutions and innovations for the defence and aerospace sectors. Among the latest innovations are two breakthrough

solutions based on Microsoft Azure with artificial intelligence that modernise pilot training and predict aircraft maintenance issues. Artificial intelligence alone enables Airbus engineers to provide customers with the solutions they need in the highly regulated markets for aircraft and helicopters (Airbus).

In fact, technology is becoming the basis for accelerating production and logistics processes. Information and communication technologies significantly facilitate and reduce the time of product delivery, reduce the cost of such activities, ensure coordination of complex global networks, communication between them and harmonisation of standards, which in turn requires strengthening the technological component and the use of the latest technologies, including artificial intelligence. Obviously, coordination of complex global networks is impossible without improving and strengthening information and communication support. Digitalisation and technologisation of production are becoming the basis of digital value chains, changing the technological paradigm of production and supply, and all business processes (Du Toit, 2014).

The development of Industry 5.0 is also characterised by the trend of environmentalisation, which is gradually being implemented in the structure of corporate social responsibility and is becoming an element of the global smart economy. The expansion of social responsibility in global value chains and logistics networks is becoming a requirement of today. This is dictated by the requirements of the end consumer and is recorded at each stage of the chain.

Smart logistics chains in this context are determined by the following trends: strengthening of corporate responsibility of companies; political instability and constantly changing business conditions; formation of standards of environmental responsibility; increasing level of technology and formation of a global information environment; definition of the concept of sustainable development as a priority for modern social progress; establishment of environmental friendliness as a mainstream for forming the image of the company and production. Such trends become a prerequisite for the formation of the company's competitiveness on the market and ensure the formation of mutually beneficial partnerships with competitors.

Under the influence of digitalisation and greening, logistics is being transformed and digitised. Some scholars even define the development of digital logistics as a separate stage (Sumetc, 2017). Digitalisation as a general trend is a prerequisite for ensuring the competitiveness of companies, as Huawei's research shows. There is a clear interdependence between the digital transformation of economic development and sustainable economic growth (Huawei). According to Huawei's Global Connectivity Index (GCI), a 20%

increase in ICT investment leads to a 1% increase in GDP (Huawei).

The creation of an intelligent marketing system involves its integration with intelligent tools of logistics activity, the creation of a unified communication system of chain participants (both production and supply) in order to increase their efficiency, and the creation of a stable architecture of the logistics information system. The creation of digital logistics is the result of the active development of digital technologies, which reduce the competitiveness and efficiency of traditional supply channels. In the development of logistics networks, the key technologies are uberisation, "smart systems" and "Internet of Things", big data, GRID technologies, blockchain technologies, sensor technologies (ST), 3D printing technologies, digitalisation of transport (Sumetc, 2018).

Uberisation involves the introduction of computer and digital interfaces for direct transactions between supply chain participants, which reduces the need for intermediaries. The Internet of Things (IoT) in logistics is a global network of physical devices connected to the Internet that are equipped with sensors, information transmission devices, sensors, scales, etc. These tools are integrated into a single system of information processing, control and management. This makes it possible to significantly improve the efficiency of supply chain management. Big data in logistics allows to process large amounts of data quickly and efficiently, as global logistics involves a huge number of small operations that need to be accounted for and controlled, increasing efficiency by combining supplies, providing them with a single transport and finding the most effective solutions.

GRID technologies are the next element of management actively associated with Big Data. This technology ensures the coordination of the use of a significant number of resources, disparate elements, even from different sources, using open, standard, universal protocols, in order to increase the efficiency of the functioning of economic systems (Concept; EOSC-hub). In logistics, this is realised through the formation of transport flows, which makes it possible to reduce the time needed to develop routes, lower their costs and increase their efficiency (Mazur, 2010). The same technologies can be used to manage the work of warehouses, determine the priority of orders and the availability of certain products, and plan the execution of orders with the highest efficiency.

Blockchain technologies involve the formation of a database, a so-called registry, in which data cannot be changed, lost or altered. This ensures data reliability and high quality of operations. Sensor technologies (ST) are used in warehouses as special technical means of communication and warehouse operation. 3D printing provides a wide range of opportunities for the manufacture of customised products, allowing orders to

be fulfilled anywhere, anytime, printing goods in the required quantity. 3D printing technologies can change the entire structure of supply chains, shortening them and changing their quality characteristics.

The digitalisation of transport involves the introduction of electronic consignment notes (e-CMRs) as part of the development of transport companies' services, especially in terms of globalisation and internationalisation, which are bringing distant markets, such as Asia and Europe, closer together. The European Commission has announced plans to create a single digital market with global features, with the formation of a single information system. For example, Germany's Deutsche Bahn and France's SNCF are combining their know-how, especially in the field of digitalisation, to ensure a high level of quality for consumers. They are actively using cloud-based transport process management technologies to automatically plan delivery routes, combine multiple orders, and use existing road and rail connections to save transport costs.

Cloud technologies are highly productive. For example, the ABM Rinkai TMS (Transport management) smart technology is widely used, which operates on a SaaS (Software as a Service) basis and does not involve additional costs for installing additional equipment and maintaining the system. This system uses CRM and GPS tracking systems.

The latest trends in logistics development include robotics, augmented reality, unmanned aerial vehicles, drones, etc. Robotics is actively used in planning the warehousing and sorting of various goods, picking and packing orders, moving products, etc. According to a DHL study, up to 80% of the world's inventory is handled manually (6 technologies). Manufacturing is actively using robotics to reduce costs and increase efficiency. For example, Chrysler uses about 300 robots at its Toledo car plant, which can exchange information with more than 60,000 other devices and technological equipment (Sumet, 2018).

Unmanned transport is another asset in logistics, which involves a special autonomous control system, movement along separate lanes and within specially established routes, actively forming a separate area of logistics and delivery systems, using various sensors, cameras, radars and other equipment, decisions are made by an on-board computer. Tesla, Google and Uber are actively implementing such technologies.

Drones have been used for express delivery since 2013, with Amazon being the pioneer of Drone delivery. The Prime Air service allows to call a flying robot that will deliver one's purchase in no more than 30 minutes. A similar project is used by Google to deliver products, the project is called Project Wing. Drones are actively used to deliver medical equipment, medicines, defibrillators, toolkits and spare parts for repairing equipment located in hard-to-reach

places. Hence, drones can replace or complement logistics routes for the delivery of small goods, correspondence, etc.

Nova Poshta (What is the future of express delivery) is trying to implement such technologies in Ukraine. This project is being actively implemented by the Chinese company SF Express, which uses drones that can climb to a height of 100 m and automatically deliver a parcel according to the specified coordinates, with an error of up to 2 m (The Chinese company SF Express uses flying drones to quickly deliver parcels). Another example of the use of drones is the company Cambridge Consultants, which actively uses unmanned aerial vehicles to deliver goods to the hands of the customer rather than to the address (Drone delivery: hello from the future?). In this case, the user manages the delivery through the application (DelivAir) and provides real-time GPS coordinates that allow the drone to find the user.

Portable smart devices provide additional opportunities in organising cargo delivery, increasing the efficiency of transportation and logistics route management. Augmented reality (AR) involves augmenting reality with the help of technical analysers. Apple has declared augmented reality to be a technology of the near future. The AR market is growing every year, and experts predict that the AR market will grow from 33 billion USD in 2021 to 125.2 billion USD by 2026, with an average annual growth rate of 30.6% (What is augmented reality). In logistics, such technologies are used to quickly scan barcodes, lists, determine the destination and location of goods and parcels, such augmented reality glasses are used by DHL for warehouses in Europe, the US and Asia (6 technologies). In addition, according to research, augmented reality technologies can be used to improve vehicle manoeuvrability, safety and security of transport and shipments, especially in poor visibility conditions. In marketing for companies, it can be used to demonstrate a product, its capabilities, or to use potential tasks.

The list of specific tools and examples of digital technologies in marketing is endless, as there are huge opportunities for this at different stages of business activity and in different industries (Figure 2).

All of the above tools, as well as many others developed on the basis of key digital technologies, have their own specificities and functional characteristics, but in general they significantly expand the range of possibilities. The proliferation of artificial intelligence technologies expands the possibilities of demand personalisation, i.e., the satisfaction of individual customer needs and preferences. The automation of customer interaction processes generally contributes to improved communication and service. The use of cloud computing and big data makes it possible to significantly scale activities, deepen analysis and

Technologies	Tools	Possibilities
<ul style="list-style-type: none"> •Internet of Things (IoT), Industrial Internet of Things (IIoT) •Artificial intelligence (AI) •Cloud computing •Big data •AR •Blockchain •Sensor technologies •GRID technologies •3D printing 	<ul style="list-style-type: none"> •Adbots (chatbots, software, generative AI) •Cognitive technologies (recognition) •Digital logistics, digital documentation, digital invoices •Drone delivery •Industrial and transport robots •GPS tracking •Uberisation •Modelling of transport, security, delivery •Smart management and control systems •Other 	<ul style="list-style-type: none"> •Personalisation of demand •Improving communications with customers •Scaling up the business •Increase efficiency, reduce costs •Improved use of data •Speed up all processes and transactions

Figure 2. Digital technologies and their capabilities

forecasting, and implement dynamic pricing. All marketing and logistics activities reach a qualitatively new level with the use of artificial intelligence technologies, big data, etc.

4. Conclusions

Thus, digitisation and the unprecedented spread of ICTs are driving rapid changes in the processes of production, supply and consumption of products. Overall, new trends in global development are shaping new market rules, new interdependencies and a new quality of global supply chains. New technologies are changing all business processes, in turn shaping global trends, which at the same time set a new bar for business requirements. Disruptive digital technologies are fundamentally changing marketing activities, significantly increasing the efficiency, scale and quality of customer service. Artificial intelligence technologies, including generative artificial intelligence, marketing robots and other tools, are revolutionising communication with customers, increasing their personalisation, creating creative content, generating new requests and speeding up all customer service transactions.

Demand for new products is being generated, and the fastest growing market segment is digital and green products.

Digital technologies are having a similarly revolutionary impact on all stages of the logistics supply chain on a global scale. Big data and cloud computing are enabling the formation of unified information systems on a global scale, which contain all the data on the availability of goods, their movement by vehicles and delivery. Smart systems, the Internet of Things, big data, GRID technologies, Blockchain technologies, cloud and sensor technologies (ST), transport digitalisation, drones, robots – all these and many other technologies not only accelerate but also create fundamentally new opportunities in the delivery of goods.

New quality, new technical solutions, and the creation of benefits for consumers are key factors in increasing the competitiveness of companies and the efficiency of their operations. Such processes are extremely dynamic in nature, resulting in the emergence of new phenomena and concepts, new products and marketing tools every year. All these issues, new phenomena and processes require analysis and further research.

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