

THE IMPACT OF DIGITAL COMMERCE ON ECONOMIC, ENVIRONMENTAL AND SOCIAL SUSTAINABILITY

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Abstract: Globalization is a process that is closely related to the development of new technologies that open the possibility for new types of business. There is a dynamic development of business, new ones types of trade, which raises the question of its impact on environment. With the development of new business business formats of trade - electronic trade the attention of marketing-management more and more also occupy additional questions, such as: how develop the concept of sustainable development on the basis balanced goals (economic, environmental and ethical). Social responsibility comes to the fore business, marketing-management strategy trading company created on the platform environmental awareness, taking into account the impact business on sustainable development, on the one hand, and impact novelties that technology brings with it (scientific technical progress), on man, on the other hand. For a more objective view of the impact of digital innovations on the development of society as a whole is necessary look at the effects that ensure how personal existence as well as social reproduction consumer, a key stakeholder in the marketing trade strategy and society as a whole. It requires it increasingly intensive involvement of consumers in creation marketing-management of trade strategies in under the conditions of the "new-digital-Web/Internet" economy. In this way, they are enabled to choose and create e-purchase and delivery options products, which leads to the development of competitive recognition and sustainability of electronic commerce. Bearing in mind the facts-trends presented above to the development of trade on the information platform communication technologies (ICT), research the niche of the (co)author of this paper will be

directed in the direction analysis of interdependence (of the new "triangle"), between trade, ICT and sustainable business. All more turbulent modern environment leads to the issue of survival and further development of humanity, a the need for business in accordance with the goals sustainable development.

Key words: digitization, trade, electronic business, internet, "new" economy, society 5.0, shadows of the digital age/commerce, sustainably business, ecology/economics/ethics.

JEL classification: O13, K56, K57

1. INTRODUCTION

In recent decades, trade has undergone a true revolution. As a result, there is the discovery of electronic commerce, which today represents the most represented form of commerce. Its rapid development was noted especially after the pandemic caused by the Kovid19 virus. Use of online communications, mobile devices, social networks, etc. it changed the business models of retailers forever and it changed customer behavior forever. Considering the achievements achieved and sales increasing every day, questions began to be raised about the impact of this way of selling on the environment, although from the beginning it was believed that e-commerce on the Internet was more environmentally friendly than traditional commerce. It is undeniable that digital technologies have led to the reengineering of the marketing management of trade companies, both from the aspect of the entire supply chain and their communication, with various stakeholders, where the honorable place belongs to consumers.

However, this is only one side of the "coin" of digital technologies/digital innovations in commerce. For a more objective view of the impact of digital novelties on the development of society as a whole, it is necessary to look at the effects that ensure both personal existence and social reproduction of the consumer, a key stakeholder in the marketing strategy of trade and society as a whole. This requires an increasingly intensive involvement of consumers in the creation of a marketing-management strategy for trade in the conditions of the "new-digital-Web/Internet" economy. In this way, they are enabled to choose and create e-options for the purchase and delivery of products, which leads to the development of competitive recognition and sustainability of e-commerce.

The strengthening of the advantages of electronic compared to traditional trade in terms of effects on the environment should certainly be influenced more and more by the perceptions and behavior of e-customers themselves. It is encouraging that consumers are becoming more and more aware and that they are beginning to give more attention and trust to traders who carry out their logistics and other activities with a high level of environmental awareness. "Digital natives" of the Y generation (millennials) are very confident when using information and communication technologies. They generally believe that e-commerce is more environmentally friendly than traditional brick-and-mortar stores. They understand the importance and want information about the environmental impact of their purchases. They are ready to choose the option of waiting longer for product delivery if it means "more ecological" delivery. Even more, they believe that this option should be defined as a regular option, and that if they want faster and "less ecological" delivery, they should pay extra for it. (Brunetti et al. 2018) Electronic retailers are often virtual organizations that represent a new form of organizational structure, in which modern digital technologies are predominantly used to connect people, communicate, but also perform tasks. (Džafić et al., 2020)

Bearing in mind the above-mentioned facts-trends in the development of trade on the platform of information and communication technologies (ICT), the research niche of the (co)author of this paper will be directed towards the analysis of interdependence (the new "triangle") between trade, ICT and sustainable business. The work structure conceived in this way will also open up new questions - a new paradigm: the triumph of innovations brought by ICT, Industry 4.0, artificial intelligence, the "fight" between robots and

employees in trade (man)... A new model of digital totalitarianism is born, where ICT has power over socio-economic development. The increasingly turbulent modern environment calls into question the survival and further development of humanity, and the need for business in accordance with the goals of sustainable development. (Digitalization in general, with special reference to trade, imposes the question; is it heaven or "hell" with the poppy of "man"?)

2. INTENSIVE DEVELOPMENT OF DIGITAL TRADE

After the conditions were created for the transition from the mechanical to the electronic phase of development, the development of the digital economy, the emergence of electronic commerce and electronic marketing, market-developed countries stepped into a new technological cycle, better known as Industry 4.0. In this cycle, the Internet represents a phase of development and provides new opportunities for the development of electronic commerce. Industry 4.0, as a new industrial revolution, it enabled the automation and development of trade in terms of technology and organization. There is a turning point in the factors of competitiveness. A resource-driven economy is giving way to an economy driven by knowledge, innovation and information. Knowledge and new ideas that lead to technological changes, on the one hand, and sustainable growth, on the other, are coming to the fore. Digital transformation is the process of introducing digital technologies into all segments of life and business. With the development and application of the Internet, the way to a digital economy is opening, which permeates all aspects of the global economy and refers to an economy based on digital technologies and communication networks. The use of the Internet leads to the reengineering of the entire supply chain, the development of new business formats for trade in goods, services and capital. It is produced and traded without the business partners even seeing each other. The way to a new concept is opening, the concept of virtual (electronic) business, electronic commerce, virtual supply chain.

The digital economy refers to the economy based on digital technologies, including digital communication networks (Internet, intranets and private value-added networks), computers, software and other related information technologies (Turban et al 2004). Internet sales is a form of electronic commerce where buyers and sellers come into contact through an electronic communication channel, using a global computer network for the exchange of goods and services

and payment. It is now fully identified with e-commerce due to its predominant participation. Electronic ie. Internet trade is one of the channels of traffic that has been developing irresistibly and intensively since its inception, and gained a particularly strong momentum with the onset of the Covid pandemic in 2019 and 2020. (Ilić et al., 2020)

A digital transformation strategy has four main areas: (Singh, 2020)

- 1) attract the attention of consumers,
- 2) transform products from traditional to digital,
- 3) optimize operations in order to reduce costs and achieve higher revenues and profits, i
- 4) empower employees with new knowledge and skills

One of the most represented forms of trade in the digital transformation is electronic trade, which was created precisely on the basis of the development of information and communication technologies and electronics, when a path was created for the development of the digital economy, which provides the basis for the creation of electronic trade. Electronic commerce has evolved in its development, with the development of satellite and cable television, micro-electronics and the application of information and communication systems, until the development of the Internet, which leads to the creation of new trade institutions. Electronic trade as a synonym for Internet trade is closely related to other scientific disciplines such as: business informatics, distributed marketing, electronic business, electronic marketing.

3. INTERDEPENDENCE BETWEEN TRADE, ICT AND SUSTAINABLE BUSINESS

Information and communication technology has encouraged the emergence of truly new scientific knowledge and traditional interpretation. The effects of ICT on the models of traditional economic systems have led us to the formation of the digital economy. Significant changes in production processes and the rise of Industry 4.0 have also affected goods and services and their global distribution, the system has also changed a lot to meet the demands, and the economic system has become complex and needs to be integrated. New technological innovations have revolutionized the economy. which, in addition to general disruption, produced exponential growth and essentially structural changes. Products and services are beginning to make great leaps in their development through innovation. Industry 4.0 is a term that denotes the integration of new

management and automation methods based largely on advanced applications of information technology, new materials, biomimetics and intelligent robots. Advanced techniques and technologies increase productivity by reducing the number of employed workers and the market price of products.

The term Industry 4.0, or the digital transformation of the fourth generation industry, is more recent and was first used in public discourse a few years ago, during the Hanover Technology Fair in 2011. On that occasion, the Industry 4.0 platform was launched from the highest level, and in 2012, at the suggestion of the German Federal Ministry of Education and Research, a scientific-industrial consortium was formed, which published an introduction strategy with clear recommendations to the German government, but also to the business world, "while eight priorities, i.e. key areas on which the concept of Industry 4.0 is based, are listed: (Kagermann, Wahlster, Helbig 2013:6-7)

- Reference architecture and standardization - imply the connection and integration of a certain number of companies through a value network and business partnership, which will be sustainable only if a set of common standards is established, while the reference architecture will provide a technical description of those common standards and thus facilitate their implementation;
- Management of complex systems - production systems and the products of their operation are becoming more and more complex, as a result of which this requires adequate planning and technical-technological equipment of production engineers, both with methods and tools necessary for the development of those models;
- Comprehensive broadband industrial infrastructure – comprehensive, high-quality and reliable broadband network communications are a key requirement for Industry 4.0;
- Security and protection are critical to the success of smart manufacturing systems. It is important to ensure that facilities, production and products are not dangerous, neither for people nor their environment, while at the same time production facilities and products that integrate data and information must be subject to protection against misuse and unauthorized access;

- Organization and design of work - in smart factories, the role of employees will change significantly, primarily due to the existence of control in a real time frame, which as such tends to transform work content, work processes and work environment;
- Training and permanent professional development - Industry 4.0 will drastically change the very principle of engaging workers and their competence, as a result of which it will be necessary to implement an appropriate strategy of training and organizing work in a way that encourages learning and enables a lifelong cycle of training through learning;
- Regulatory framework - the existing legislation must be adapted to the market situation and the competition, first by taking into account business innovations due to the protection of business data, and then also the issues of responsibility related to them. In addition, the regulation must take into account issues related to the handling of personal data, issues related to trade.

New business models are being developed based on Industry 4.0. The characteristics of such business models are: mass production in the short term, linking of production capacities and fragmentation of the value chain. All this leads to the fact that there are no more boundaries between participants in the production and provision of services and users of products and services, which leads to the creation of new markets (Valenduc & Vendramin, 2016). Therefore, Industry 4.0 connected robotics and electronic business in a very successful way, which formed the "smart factory".

According to McKinsey, nearly 3,000 employees said the strongest motivations for adopting a sustainable mindset are: alignment with company goals, missions or values; building, maintaining or improving reputation; meeting customer expectations; and developing new growth opportunities (Spilakos, 2018).. Apart from financial and business results, the impact on the environment is important regardless of the size of the company. SMEs contribute 64% of environmental impact in the EU (Blundell et al., 2013). Therefore, SMEs could similarly improve their own environmental performance and demonstrate their significant power as drivers of industry change (Seidel et al., 2008).

Sustainable development and digitization affect how an organization adapts and runs its business. It seems that embracing digitization and transforming business organizations that integrate new technologies have become key elements for business survival. However, Čudanov et al. (2012) showed that the distribution of ICT application in Serbian companies has the properties of Pareto's law. These authors analyzed 67 selected companies in Serbia and obtained results according to which the application of ICT in Serbian companies is insufficiently developed. However, today most companies cannot be imagined without the application of new technologies in business. It is these technologies that bring changes in strategy and structure. Therefore, it is necessary to manage new technologies and operations in order to improve business performance. Traditional practice is being extended by sustainable practice. Participants have a direct or indirect impact on sustainable business. Government has a key role as it sets laws, rules, standards and guidelines to create a framework for sustainable development. Only synergy between governments, companies, consumers and financial markets can bring sustainability to business practices. Governments should establish and enforce regulations on sustainability, while companies and consumers should support investments, products and services in sustainability (Jednak & Jednak, 2019)

4. CHALLENGES OF DIGITAL TRADE WITH ASPECT OF SUSTAINABLE DEVELOPMENT

In the literature in the field of environmental protection, the concept of sustainable development appeared in the seventies of the last century, and from then until today it has constantly attracted the attention of a large number of researchers (Jones et al 2011). The concept of sustainability arose as an alternative to the practice of the economic system in the middle of the 20th century, which generated growth that, although intended for man, at the same time began to threaten him. Very simply, "sustainable development" is the concept of economic development with minimal use of non-renewable natural resources, and maximum use of renewable energy resources, so that future generations will be able to enjoy the benefits of a preserved environment. (Vujović et al. 2012) Speaking of sustainable development as a kind of science about complex systems, economist Radovan Pejanović (Pejanović, 2015) indicates that sustainable development "has become a way of thinking, i.e. world view, focused on the interconnectedness of economic, social and environmental changes and a way to realize our common aspiration for a decent life, which would

include world peace, economic development, social inclusion and environmental sustainability." Requirements for the preservation of unchanged natural and environmental conditions are relatively recent. They were created when it was noticed that rapid technological progress, which is undeniably a step higher compared to the previous one, also has a negative side that endangers man and his environment. The requirements for the preservation of the human environment are taken care of by institutions at the state level and these requirements appear in the form of laws, standards and regulations harmonized at the national and international level, which companies must fulfill, whether they are engaged in production or trade (Ćuzović, Ivanović, 2010).

The boom in the digital economy, e-commerce, has created serious challenges and raised concerns about the impact on the environment. Many believe that overall, buying and selling this way has a positive impact on the environment. First of all, it is believed that in this way, since no customer goes to the store, the emission of harmful gases is reduced and contributes to the creation of the greenhouse effect. Furthermore, it is considered that the absence of traditional "brick and mortar" sales facilities also contributes to a positive impact, in the sense that energy consumption and other negative impacts on the environment are reduced. However, the reality is much more complex. Electronic commerce is not without negative impacts on the environment. In the modern markets of developed countries, consumers are becoming more and more aware and concerned about the preservation of the environment and the consequences of their actions. At the same time, they are starting to put pressure on production and trading companies to correct their behavior towards a higher level of sustainability. Customers want the highest possible level of shopping convenience and security and rarely criticize "excessive" packaging, even though all those packaging materials are simply thrown away without much thought.

The concept of sustainable development in trade can be seen through the following attributes (Yudelso, 2010): green sales facilities, green processes, green transport, green product, green price, green technology, green shipping, employment, earnings, better working conditions for employees, continuous improvement employee knowledge, innovation, development of the brand of organic products, management of relations with consumers, reduction of environmental costs (water, air, energy) and the like.

At the moment, the highest level of awareness and concern, in addition to the issue of transportation, exists in the matter of waste from the packaging of products that are delivered by the seller to the customer via postal and courier services. A typical e-commerce shipment may use up to seven types of packaging materials: paper receipts, envelopes, cardboard boxes, plastic bags, woven bags, tapes, and "pad" materials (bubble wrap, Styrofoam). (Chueamuangphan et al., 2019)

In order to reduce the negative effects of electronic commerce on the environment, first of all, it is necessary that electronic merchants sell products and services that have the least possible environmental impact. When it comes to packaging, it is primarily necessary to use recycled cardboard and packaging paper (bags) in order to eliminate plastic in this step. In this sense, effective guidelines and policies to avoid excessive use of packaging materials are very useful. Furthermore, 3D printing represents a field that needs to be perfected in terms of the possibility of printing packaging. Such packaging would better follow the shape and size of the product and would require less material. Production would be cleaner, with less CO₂ emissions, more efficient and cheaper. (Escursell et al., 2020)

Logistics includes all activities that move products from the place of production to delivery to the end customer. These activities include warehousing and inventory management, sales, and especially transportation. Because customers demand delivery as quickly as possible (often within 24 hours), sellers use faster, more expensive delivery methods, harming the environment. In addition, the requirement to deliver goods directly to the doorstep will lead to a more pronounced negative impact on e-commerce. In door-to-door delivery, delivery vehicles travel long kilometers, consume more energy and emit more harmful gases. Traditional trade and shopping in stores, on the other hand, require transportation efforts and costs from the buyer in addition to those from the supplier. Customers of course have to go to the store to buy and take the product with them, which in itself has negative consequences. Clearly, we need to research and compare the shipping costs, profitability and environmental impact of one purchasing method versus another. Existing research shows that consumers are more inclined to shop in retail stores when they are at a certain distance from the point of sale, and as the distance between consumers increases, preferences will shift to electronic shopping. Gathering knowledge on these issues and creating management models will help environmental policy makers and traders themselves. Moreover, more aware consumers will

make more rational choices because it is certainly in their interest. Regarding shipping, the question of "undelivered" goods is also interesting when the address is free when the goods arrive or when the customer needs to be physically present to receive the goods. The percentage of undelivered goods is increasing due to the increasing number of single households and households in which both partners are employed.

When it comes to transportation, the proposal is to use electric and hybrid vehicles or biogas, which would reduce the negative impact on the environment and the emission of CO₂ into the atmosphere. In addition, route planning software makes a huge contribution to defining the most efficient routes that reduce driving time, save money and, of course, reduce the negative impact on the environment. In this sense, it is worth mentioning the technologically successful development of package delivery by drone. Greater use of drones to deliver smaller packages could reduce the need for vehicles and trucks. Drones use batteries and therefore will not cause as much pollution as delivery vehicles. It will also require a change in the form of packaging and the use of new, lighter, sustainable materials. In addition, many other technological solutions are being developed to improve the shipping and delivery process. One of them is a system consisting of special electronic locks and surveillance cameras (Amazon) that allows the delivery person to enter the apartment independently and leave the product.

Environmental problems become a challenge to trade management, putting in the foreground activities aimed at achieving eco-satisfaction of consumers. The value for the consumer is not only the functional and structural determinants of the qualitative design of the "offer package" (assortment), as well as the quality of service. The customer's value of products and services from the offered range extends to the area of eco-quality. This means that the customer's concept of the value of the "offer package" of the trading company implies the unity of the quality of the assortment from the aspect of technical-technological determinants (defined by the ISO 9000 standard) and environmental (defined by the ISO 14000 standard), with the quality of service as an additional marketing instrument. According to this understanding, ecology becomes not only the norm for achieving the customer's value of the product range in terms of eco-quality, but also the cultural pattern of behavior of ecologically educated citizens, entrepreneurs and managers. Ecological rationality, as can be seen, has recently become an important instrument in the marketing

strategy of a trading company (Ćuzović, Sokolov-Mladenović, 2013).

CONCLUSION

Digital technology rules the world. The specter of technicalism-digital totalitarianism is spreading. Technology changes the existing image of man - transforms him into a new being - a Super "god" who is capable of controlling the entire universe. Information-communication-technologies (ICT) have become a tool in drawing the maps of the new cadastral survey of the earthly empire, on the one hand, and, on the other hand, the architects of the global and regional reshaping of cyberspace. On stage is a kind of competition of promoters of a new digital society in which artificial intelligence and supercomputers threaten to enslave human beings, placing them in virtual dungeons - where their life, at first glance, looks like they are in paradise, the so-called digital "civilization".

The boom in the digital economy, e-commerce, has created serious challenges and raised concerns about the impact on the environment. Sustainable development and digitization affect how an organization adapts and runs its business. It seems that embracing digitization and transforming business organizations that integrate new technologies have become key elements for business survival. It is believed that by means of digital commerce, since no customer goes to the store, the emission of harmful gases is reduced and contributes to the creation of the greenhouse effect. Also, it is considered that the absence of traditional "brick and mortar" sales facilities also contributes to a positive impact, in the sense that energy consumption and other negative impacts on the environment are reduced. However, the reality is much more complex. Electronic commerce is not without negative impacts on the environment. Environmental problems become a challenge to trade management, putting in the foreground activities aimed at achieving eco-satisfaction of consumers. When talking about sustainable development, in addition to the economic and environmental components, the social or social component is the third pillar of sustainability. However, with the use of modern technology, it seems that humans as a social being have become isolated from nature and all the benefits it provides. Although humans are part of nature and the universe, we are still just a speck of dust in the universe. On the one hand, the accelerated development of science and technology brings enormous benefits, but on the other hand, it can also lead to self-destruction! Modern civilization must learn to reconcile, that is, to balance its possibilities and desires, the

possibilities of its natural environment and its own capacity of consciousness.

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