

# ***ENTREPRENEURSHIP***

**South-west University “Neofit Rilski”**

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# ENTREPRENEURSHIP

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## CHARACTERISTICS OF DIGITAL ENTREPRENEURSHIP

**Anny Atanasova<sup>1</sup>**

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### **Abstract**

*The result of digitization's rapid entry in all spheres of the entrepreneurship business is the change of the traditional business functionalities. Companies are starting to implement new business models inherent in the digital environment along with established ones. The digital transformation of the business increases its potential and opportunities for expanding the domestic and foreign markets, facilitates communication with customers, and creates prerequisites for business growth. Digital entrepreneurship is distinguished by some more essential characteristics that outline its essence and reveal its clear advantages. The article aims to reveal the characteristics of digital entrepreneurship in a theoretical and practical aspect.*

*Digital entrepreneurship is considered in terms of its relationship with the digital economy, the degree of digitization of processes, scope, growth opportunities and access to markets. It is also characterized by the implementation of business without space-time limitations, the continuous introduction of new digital means facilitating communications with customers and counterparties, various business activities and the implementation of new business models. Changes in competition and consumer behavior, as well as the opportunities this entrepreneurship provides for creativity and innovation, are also highlighted as important features. Competition and consumer behavior changes, as well as the opportunities this entrepreneurship provides for creativity and innovation, are also highlighted as important features. The importance of such features as the need to change the mindset of entrepreneurs and customers and special training of human resources to use digital technologies is emphasized.*

*In a practical aspect for the construction of digital entrepreneurship, the results of an approbation study of some aspects of digital entrepreneurship are presented.*

**Keywords:** *digital transformation; digitization; digital entrepreneurship; characteristics*

**JEL Codes:** *L20; L26; M19*

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### **1. Introduction**

The information and communication technology development led to the rapid implementation to a greater or lesser extent of digitization in all spheres of entrepreneurial businesses. In this regard, Nambisan points out that the establishment

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of digital technologies is transforming the traditional ways and forms of entrepreneurship (Nambisan, 2017).

The development of technology has allowed businesses to delineate their market behaviour framework according to new realities clearly. The rise in artificial intelligence development has created preconditions for companies to improve the decision-making process and to redesign the used business models and ecosystems that will benefit consumers by adding value and increasing the user experience (Zlateva, 2021, p. 520). Digitization causes new business model inclusion in the toolset of entrepreneurs. It increases business opportunities and creates conditions for business growth and development. According to Stavrova et al. (2018, p. 108), the digital environment provides conditions for successful businesses therefore companies know more about their customers and the trends that are formed in their behaviour.

The use of digital technologies is an important prerequisite for expanding the market potential of companies and facilitating foreign markets entry. Due to the digitization processes - machines, robots, devices and systems can respond and connect with the external environment to respond to the market changes (Kyurova, 2022, p. 10). Therefore, entrepreneurs who want to take advantage of the opportunities provided by continuous technological development are turning to digital transformation. In relation to this the focus is on the advantages that digital transformation offers leading to the realization of business value (Richter et al., 2017, pp. 300-310).

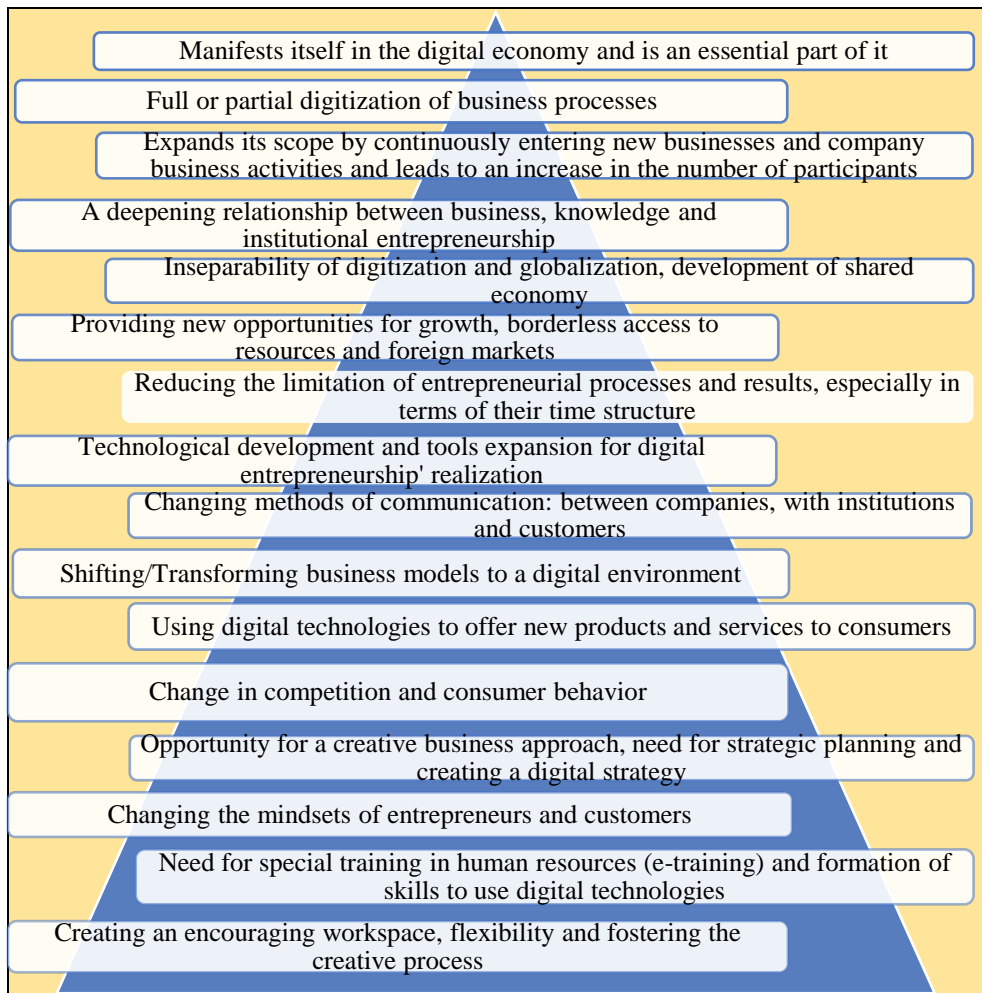
The specific characteristics of digital entrepreneurial activity complement and at the same time distinguish traditional entrepreneurship placing it at a higher technological level. In this regard, the aim of this article is to reveal in theoretical and practical aspects some main characteristics of digital entrepreneurship.

## **2. Basic characteristics of digital entrepreneurship**

Characterizing digital entrepreneurship should be noted that its basis is the digital transformation of the economy and society realized as a result of the modern development of information and communication technologies. According to Hull et al. (2007, p. 293), this is entrepreneurship which natural physical activities have been fully or partially digitized.

In our opinion, the characteristics of digital entrepreneurship can be viewed from different aspects. The analysis of the research literature on the topic reveals different standpoints. Without claiming to be exhaustive, some main characteristics of digital entrepreneurship can be deduced based on the scientific research sources (Fig. 1):

Figure 1. Characteristics of digital entrepreneurship



Source: authors' systematization

The presented systematization brings out in the first place as an important feature the conditions in which digital entrepreneurship develops. They are expressed in a new type of technological development, leading to a digital transformation of society in general and the economy in particular. Therefore, one of the most important characteristic of digital entrepreneurship that it manifests itself in the digital economy and is an essential part of it. From here follows the most distinguishing feature from traditional entrepreneurship: it is accompanied by full or partial digitization of business processes. This characteristic stems directly from the ongoing digital transformation of society and the economy. According to many authors, this type of entrepreneurship is an important factor not only for the further digitization of all spheres and also for the development of digital innovations (Lobanova, 2019;

Ustinova, 2019; Dashkov & Repushevskaya, 2019; Dudin & Omarova, 2019; Kooskora, 2021). From here, in our opinion, we can talk about the two-way process of digitization.

These two characteristics, in our opinion, are at the heart of understanding the phenomenon of "digital entrepreneurship".

An essential feature of this type of entrepreneurship is that due to a number of advantages, among which are significantly lower costs, it constantly expands its scope, the areas of application in business increase. It enters into new companies and into different activities of individual companies. While at the beginning it was reduced to the online sale of books, today, along with Internet trade, digital technologies are the basis of a number of other business activities and processes - providing information to the public about the company's products/services and activities, advertising, production processes, logistics, relations with suppliers and consumers, accounting and reporting activities, various marketing studies and analyses, online staff training, online banking operations, conducting transactions, using digital resources to enter new markets, virtual business meetings and meetings, creating and distribution of media products, etc. Business survival depends on building a reliable business architecture that ensures the generation of cash flows by implementing new business models, as a result of constructive and creative thinking (Zlateva, 2019, p. 30). There is a continuous process of integrating digital technologies in every sphere of entrepreneurial activity. At the same time, the number of entrepreneurs who digitize company activity is also increasing. Already, companies that began their activities as digital startups, such as Google, Facebook, Amazon, Alibaba, Dropbox, Uber, and Airbnb, are not alone in the digital space. According to Zaheer et al. (2019), they are today global corporate giants, but they are already being joined by many other companies adopting new business models in a digital environment, including small ones. The opinion of Gohmann (2010), Zaheer, Breyer and Dumay (2019), Autio, Nambisan, Thomas and Wright (2017), Battisti and Brem (2020) and other authors supports the above characteristic.

Gohmann (2010, pp. 14-21) highlights the deepening of the relationship between business, knowledge and institutional entrepreneurship, emphasizing the presence of symbiosis between them. He points out that business entrepreneurship is aimed at finding new business opportunities suitable for the specific company. Knowledge-based entrepreneurship is associated with increasing the knowledge scope that can be used in company activities and creating new one, while institutional entrepreneurship implies the construction of new organizations or the expansion of existing ones. Combining these three types of entrepreneurship leads to the expansion of opportunities for the complex application of traditional work methods along with digital technologies and is a solid basis for business digitalization.

Essential to understanding digital entrepreneurship is the relationship between digital transformation and globalization. This relationship provides an opportunity for

the development of the sharing economy, which according to Kraus et al. (2019, p. 361) offers a new business model for the implementation of entrepreneurial activity. Network connectivity is one of the main factors in driving the digital functioning of enterprises not only in national or regional but also in global markets. Thanks to it, the number of companies and consumers who meet on the market with the help of various technical means - personal computers and mobile devices (smartphones and tablets) is constantly increasing (Kooskora, 2021, p. 145). This, in turn, leads to the rapid growth of the digital economy and digital entrepreneurship. The inseparable connection between digitization and globalization is also emphasized by Ustinova (2019, p. 33), who also points out the possibility of forming a single economic space.

An essential characteristic of digital entrepreneurship is the creation of opportunities for access to foreign resources and foreign markets, independent of time and space. Based on the globalization of platforms with the help of specific means, the digital entrepreneurship significantly facilitates the implementation of business. In this way, it creates prerequisites for the development of the sharing economy. This is also one of the advantages that leads to significant growth (Soltanifar & Smailhodžić, 2021; Kooskora, 2021; Smailhodžić & Berberović, 2021).

The feature "reducing the boundedness of entrepreneurial outcomes and processes and especially in terms of their temporal structure" derived by Nambisan (2017) targets two important sides of the digitization process. In our opinion, the reduction of the limitations of entrepreneurial results and processes can be considered from the point of view of the opportunities provided by digitalization to expand the boundaries and scope of the markets of the products and services offered, to conduct business operations (especially commercial) on a global scale without country borders. The time structure of entrepreneurial activities and processes also undergoes positive changes, as their time range increases and the sales too.

Digital entrepreneurship could function successfully only on the condition that implements new digital technologies and expands the specifically used tools (Soltanifar & Smailhodžić, 2021; Zaheer, Breyer & Dumay, 2019; Boyko, Evnevich & Kolyshkin, 2017; Dudin & Omarova, 2019; Kraus, Palmer, Kailer, Kallinger & Spitzer, 2019). The technological provision of entrepreneurial activity at the modern stage includes a new type of infrastructure, use of artificial intelligence, expansion of the spatio-temporal scope of activities and areas in which digital technologies can be applied, storage of huge amounts of information using cloud services, which are increasingly finding a place among the other established tools.

The implementation of digital technologies in business activities inevitably leads to a significant change in communication methods, both within the company and with other companies, customers and various institutions (Soltanifar & Smailhodžić, 2021, p. 9; Richter, Kraus, Brem, Durst & Giselbrecht, 2017; Samara & Terzian, 2021, p. 284). Communication between these subjects becomes more flexible and time and space independent. Along with the one-way transmission of information

from companies to customers, suppliers and other participants in business processes, an opportunity is also created for network connectivity, where communication is multilateral. The internet and company websites are no longer enough to provide information. New digital technologies expand the possibilities of communication by introducing a new type of tools for communication, more perfect and providing even greater connectivity - social networks. Social media platforms provide opportunities to advertise and market a company's products, as well as to establish consumer sentiment and measure the extent of impact. They can also shape consumer interest and behavior.

In the scientific literature, researchers point out that a particularly important characteristic of digital entrepreneurship is the displacement of business models, ways of doing business respectively, towards a digital environment (Soltanifar & Smailhodžić, 2021; Ghosh, Hughes, Hughes & Hodgkinson, 2021; Song & Wu, 2021; Zaheer, Breyer & Dumay, 2019; Göcke & Weninger, 2021; Kooskora, 2021; Smailhodžić & Berberović, 2021; Boyko, Evnevich & Kolyshkin, 2017; Lobanova, 2019 ; Ustinova, 2019; Dudin & Omarova, 2019; Zaytseva, 2021; Kraus, Palmer, Kailer, Kallinger & Spitzer, 2019).

Even Song and Wu (2021, p. 277) point out that digitalization is challenging established business models and also finding foreign markets. New business models are being introduced that raise new challenges for knowledge-related firms and the skills to implement them. Along with e-commerce which occurs as the oldest business model, new business models such as dropshipping, freemium, on-demand, crowdsourcing, crowdfunding, fintech, etc. are already establishing themselves as sustainable.

The digital transformation of a company's activity means a supposed transformation of products and services. Digital technologies are driving product and marketing innovations aimed at more fully satisfying customer needs. In this regard are also the views of many authors who consider digitization as a prerequisite for the development of products and services through innovation, the provision of products and services with added value for customers and for innovation in marketing concepts (Ghosh, Hughes, Hughes & Hodgkinson, 2021; Samara & Terzian, 2021; Zaheer, Breyer & Dumay, 2019; Ustinova, 2019; Kooskora, 2021; Soltanifar & Smailhodžić, 2021).

The digitization of entrepreneurial activity is a vehicle of change in competition and consumer behavior (Smailhodžić & Berberović, 2021, p. 166; Lobanova, 2019). Competition changes in the conditions of digitization are expressed in the degree of innovation, good design and the ability of products to creatively solve users' problems (Smailhodžić & Berberović, 2021, p. 166). Kooskora (2021, p. 170) points out that digitization contributes to a hypercompetitive digital economy. Digitalization has a significant impact on consumer behavior. Customers are increasingly turning to online purchases, which saves them time and makes shopping easier. Along with this,

Ustinova's opinion (2019, p. 33) that they dictate the market with their own rules should be emphasized. The intensifying competition as a result of the implementation of new business models and changes in consumer requirements impose the need for companies to be technologically flexible and to continuously expand the scope of the digital tools used to conduct business and the relationship with consumers. The changing competition also increases the risks for small businesses especially because they do not have the resources of larger companies (Samara & Terzian, 2021).

An essential feature of digital entrepreneurship is the possibility for business management and strategic planning creativity and the need to create a digitalization strategy (Soltanifar & Smailhodžić, 2021, p. 9; Smailhodžić & Berberović, 2021, p. 167). The digital transformation of business raises the need for work creativity, which is associated with the search for new opportunities for the development of entrepreneurial business. The creative approach combined with the implementation of a digital strategy can be a significant factor for the development of the specific business (Soltanifar & Smailhodžić, 2021, p. 45).

For the realization of this entrepreneurship and for the successful and effective application of new technologies is necessary not only the entrepreneurs and business partners, and also the customers to change their thinking (Soltanifar & Smailhodžić, 2021, pp. 7-19). Orientation and attitudes towards the use of digital tools are a significant factor in technological development and can contribute to the digital transformation of company activities and communication with other entities, including customers.

At the same time, the processes of digitalization of company activities are closely related not only to the attitudes, but also to the degree of preparedness of the personnel and the developed skills for using the specific technological tools. In this aspect, the role of entrepreneurs is particularly important to motivate the company's employees and create conditions for mastering the necessary knowledge and skills. An important part of the process of working in a digital environment is creativity and the ability to see, analyze and exploit for the benefit of business the opportunities provided by digitalization (Kooskora, 2021; Soltanifar & Smailhodžić, 2021, p. 19; Smailhodžić & Berberović, 2021, p. 172; Zaytseva, 2021).

In connection with the previous characteristics, there is also the need to create a workspace that encourages the company's employees to look for opportunities, to show creativity and flexibility in their work. The main key factors dictating the need to create a supportive work environment are the globally transforming business environment, the uncertainties and risks associated with digitization processes, especially resulting from the globalization of the economy and markets, changing competition and consumer behavior.

In conclusion, we believe that the features of digital entrepreneurship are not exhausted with the above characteristics. These characteristics can be seen as advantages which it attracts more and more entrepreneurs. Along with this, the

problems that accompany the use of digital means in the company's activities must also be taken into account.

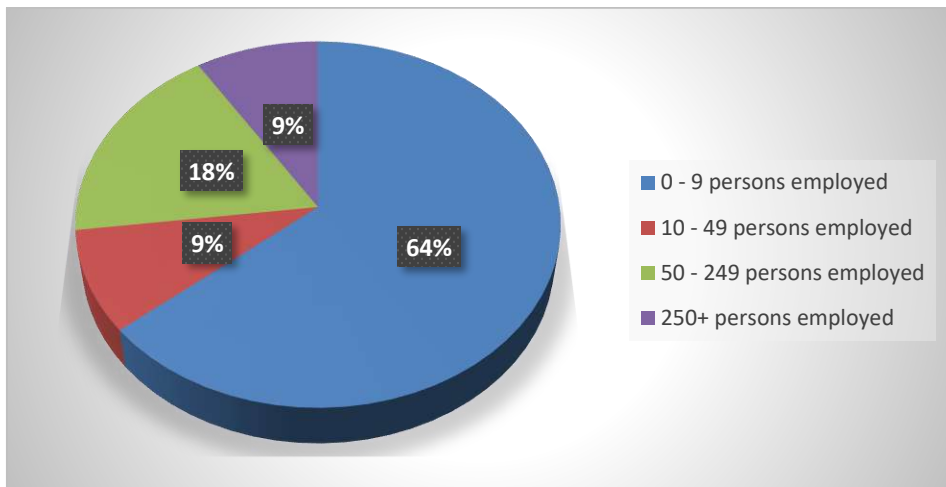
### 3. Appropriation study of some aspects of digital entrepreneurship

In support of the above-mentioned characteristics are the results of a survey conducted, which we present in this article. They make it possible to characterize digital entrepreneurship in the following aspects:

- The degree of diffusion of digitization in the activities of the surveyed companies, its scope, both in relation to company activities and outside the company;
- The state of digital transformation in the studied companies from the point of view of the specific used tools;
- Whether digitization has an impact on the expansion of the companies' markets;
- Have there been any changes in communication with other entities, including customers;
- Whether the business models inherent in the company's activity in a digital environment are known and used;
- What is the impact of business digitalization on product innovation;
- Is the staff prepared to use digital technologies?

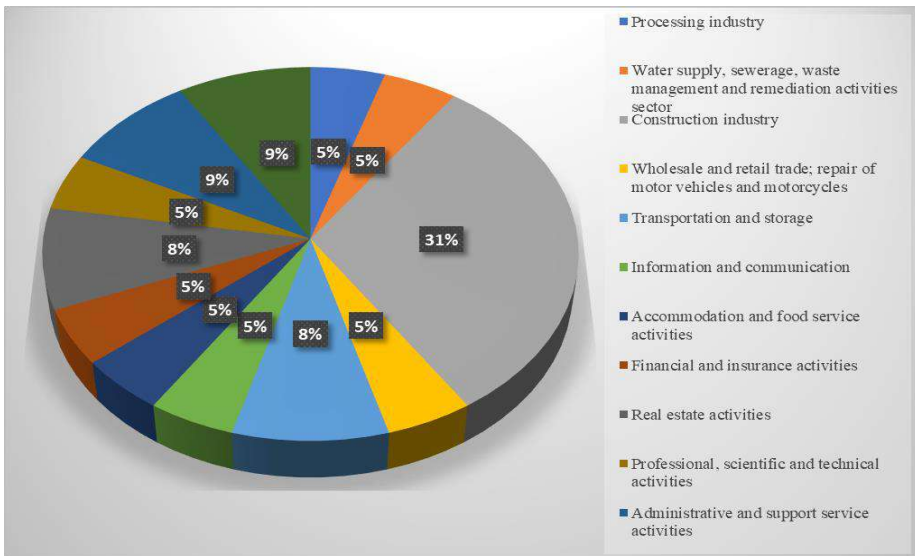
The research was carried out using an online survey using the respondent method. Information was obtained for 83 enterprises of different sizes and from different sectors of the economy (see fig. 2 and 3).

*Figure 2. Characteristics of the studied enterprises according to the relative share of employed persons (%)*



Source: author's research

Figure 3. Distribution of enterprises according to the economic sector (%)



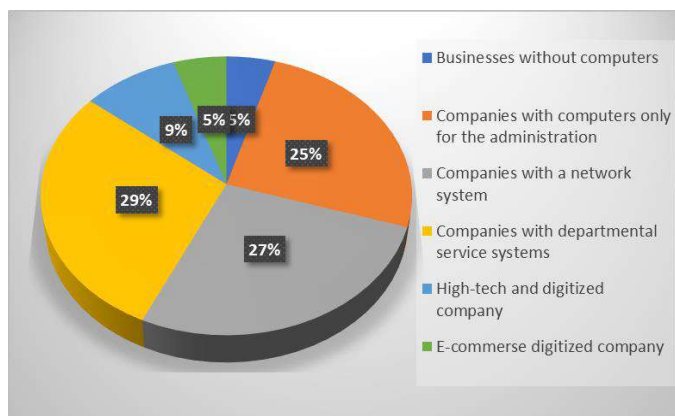
Source: author's research

Note: The economic sectors correspond to those formulated by the National Statistical Institute of the Republic of Bulgaria

In connection with the conducted research and the subsequent analysis, we should make a stipulation that not all businesses can be fully digitized, since the possibilities for digitization depend on the sector in which the respective company operates and the specific activities that are carried out in it.

The degree of diffusion of digitization in the activities of the surveyed companies can be seen in the following graph (Figure 4).

Figure 4. Spread of digitization in the surveyed companies (%)



Source: author's research



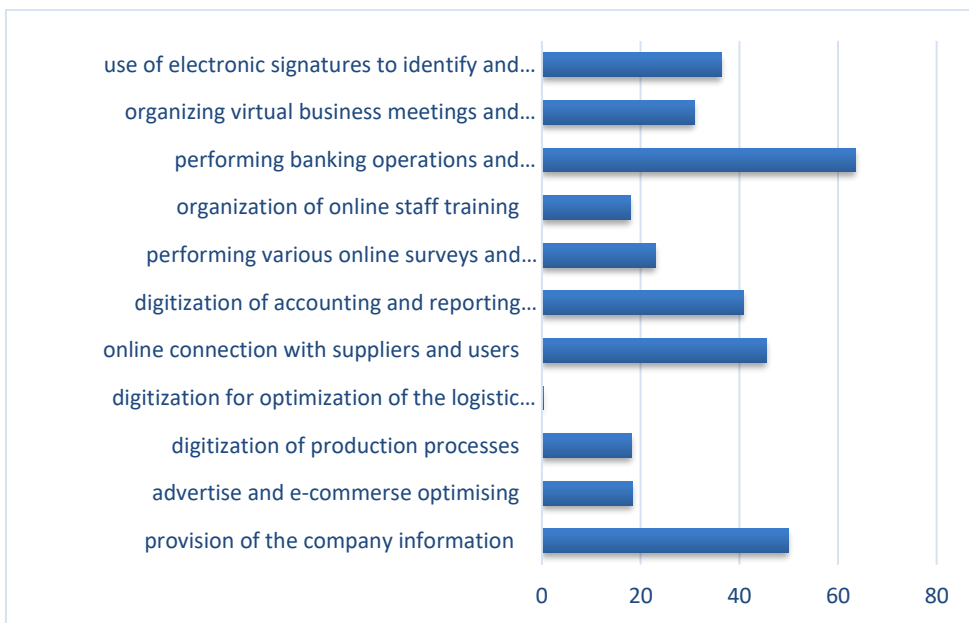
The results of the conducted survey show that digital technologies in one form or another have their place in the majority of the surveyed enterprises - almost 95% of them. The number of enterprises that do not have computers and do not use information technology is insignificant - only 4.6%. At the same time, it should be noted that there are companies that use a network system for communication between administrative employees (27% of respondents) and those that have systems for servicing some of the departments: financial and accounting, production, warehousing, transport and logistics, etc. (29%). The owners of some of the companies indicate in their answers that computers are provided only for the administrative team (25.3%). Only 9.1% of the companies are high-tech and the activity is fully digitized, and 5% carry out their activity in the field of online trade and have digitized the performed processes.

The data shown in Figure 4 reveal the state of digital transformation in the studied companies and from the point of view of the specific means used. They mainly include the owned computers, the developed internal company networks, the specialized software for various company activities and the Internet. Along with this, cloud technologies and social networks are gradually entering.

From the answers received, it is clear that 64% of entrepreneurs know the possibilities provided by cloud services for storing information, but only 37% of companies actually use them. The use of social networks is similar. While 55% of businesses use the opportunities they provide for advertising, only 18% of them resort to them for sales of goods and services. It follows from this that in the future the range of high-tech tools used for digitizing company activities can be expanded.

The analysis of the results of the survey also shows that entrepreneurs show a desire for digital technologies to enter more and more areas of the company's activity (figure 5). As can be seen from the data presented in the graph, digital technologies are most often used when carrying out banking operations and transactions through internet banking (63.6% of the surveyed companies). As a positive fact, it should be noted that a significant part of the companies (50%) provides online information to the public about the company's products/services and activities. The difference is also insignificant in terms of establishing relationships with suppliers and consumers online - this is how 45.5% of companies communicate with their partners and customers. A large percentage of the surveyed enterprises have digitized their accounting and reporting activities - 40.9%, and over 36% are those that use electronic signatures to identify and authenticate the companies' business activities. The studied companies also show progress in the use of modern digital technologies in terms of the use of Internet resources to optimize logistics operations (32% of the companies are distinguished by this) and in the organization of virtual business meetings and meetings (31% of them). This means that entrepreneurs have realized the advantages that the digitization of various activities provides and are striving to put into operation more and more high-tech tools and implement work models that are tailored to them.

Figure 5. Digitized company activities – a percentage of surveyed companies



Source: author's research

Note: Results exceed 100% because more than one answer is possible

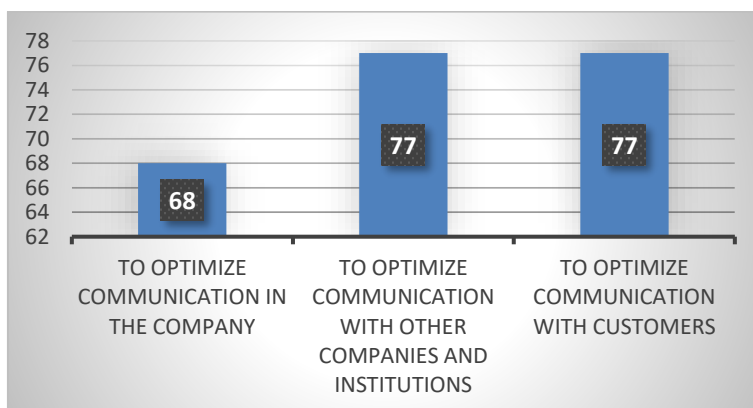
However, the graph also shows that there is still a timid approach to the application of digital means in some areas, such as: online research and analysis - only 23% of respondents declare this; optimization of advertising and online trade – 18.4%; digitization of production processes - 18%; online staff training – 18.2%.

The results of the survey reveal that entrepreneurs increasingly rely on digital technologies when entering new markets. For example, 73% of companies are stimulated by digitalization when expanding their domestic markets, and about 50% are those who are influenced by new means when entering foreign markets.

The benefit of applying digital means in implementing product and marketing innovations and increasing the number of customers is significant. 82% of entrepreneurs indicate that digitization stimulates these innovations and also according to 82% of them it stimulates and increases the number of customers.

Also, entrepreneurs are well aware of the need to apply digital means to improve communication with colleagues in the company, with other companies and institutions, and with customers (Fig. 6).

Figure 6. Use of digital technologies in the company's communications – a percentage of the surveyed enterprises



Source: author's research

Note: Results exceed 100% because more than one answer is possible

The results presented in Figure 6 reveal the degree of use of digital technologies in the company's communication process and the entrepreneurs' assessment that they facilitate connections within the company and especially with the outside world - different companies, institutions and customers.

The conducted survey also reveals the degree of knowledge and application of new business models inherent in the online environment, such as dropshipping, freemium, on-demand, crowdsourcing, crowdfunding. The answers received show that 41% of entrepreneurs are familiar with these business models, but only 27% of them apply them in the work of the company.

Of particular importance for the successful implementation of digital technologies and their inherent business models is the preparation and ability of entrepreneurs, managers and other employees of the company to work in a digital environment. From the results of the research, it is clear that it is necessary to increase them, since only 55% of the companies have sufficiently prepared personnel.

The presented analysis of the results of the conducted survey reveals that the digital transformation in the surveyed enterprises is not yet complete. This is because digitization is a novelty that is gradually entering the entrepreneurial arsenal, and digital technologies are constantly developing and improving, offering new technical means and imposing the need to implement new business models.

#### 4. Conclusion

Based on the presented characteristics of digital entrepreneurship, it can be concluded that it will increasingly find its place simultaneously with the traditional one in doing business and in the economy, especially in the constantly globalizing environment. Knowledge of the advantages and opportunities they provide, as well as

the acquisition of the necessary knowledge and skills for their use, is important for a wider penetration of digital technologies in company activities.

At the same time, considering the changes occurring as a result of digitalization, it can be considered as an innovation of strategic importance for business. On this basis, the introduction of digital technologies can be a planned undertaking that has an effective impact on entrepreneurial activity in the long term.

The analysis of the research results shows that, albeit slowly and not in all activities, digital technologies are entering the entrepreneurial arsenal. There is a large share of companies in which they contribute to online banking, to advertising, to the expansion of markets, to the creation of new products and services, to the increase of customers and to the conduct of more effective communication with the company's customers and counterparties. These are the enterprises in which high-tech means are more actively used, and accordingly their positive influence on the company's activities is taken into account. Along with this, however, among the studied companies there are also those in which digitalization is still very limited in only some of the activities or is not applied at all. Important factors in this case are the specifics of the company's activity, which may or may not imply the introduction of digital technologies, and the initiative of the entrepreneurs.

In conclusion, it should be noted that proceeding to digitalization of company activities is related to understanding its essence and realizing the advantages and benefits for the business that it provides in the long term.

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## MODERN TECHNOLOGIES TO OVERCOME THE CHALLENGES OF GLOBALIZATION

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### Abstract

*Civilized humanity should strive to live in a society based on justice, prosperity and humanism. At the present stage of globalization, achieving this goal requires the rational use of existing natural, civilizational and institutional resources. Population is a phenomenon that defines everything to which everything is connected. The growth of the world population is closely related to the development of technology, causes it and is affected by it. Using modern technologies, it is possible to adequately meet the growing needs of people for food and other livelihoods. The following are important for ensuring Georgia's strategic security: diversification of the economy, reasonable reduction of economic dependence on neighboring countries; more efficient use of the country's transit function; Use the real prospect of becoming a candidate country for EU membership; Accelerate the integration of the country's economy with the West, Asia and all other civilized countries.*

**Keywords:** population growth; technological revolution; growing demand for food; state thinking; digital education

**JEL Codes:** F60, I25, O30, Q55

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### 1. Introduction

The history of civilization is the history of the pursuit of a better future for mankind. To do this, each person must aim to live in a society based on justice, prosperity and humanism. Achieving this goal requires the rational use of existing natural, civilizational and institutional resources. There is no doubt that world

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population growth is closely linked to the development of technology. They give rise to new economic ideas and are influenced by them.

As a result, we must analyze all of the positive and bad elements of these processes, including the change and influence of various sectors of the economy. Alongside these processes, international organizations such as the European Union (Frey & Osborne, 2017), the OECD (Furman & Seamans, 2018), and the OSCE (Frontier Economics, 2018) have begun to establish appropriate regulatory institutions and guidelines, as they have in most developed countries such as the United States (Columbus, 2017), Germany (De Backer et al., 2018), Spain (Frankfurter Allgemeine, 2016), Sweden (European Parliamentary Research Service, 2019), and others. The study examines the function of artificial intelligence systems in helping businesses adjust to changing economic realities. Furthermore, the need of scientific research and increasing financing in these areas is emphasized (Abuselidze & Mamaladze, 2021; Aggarwal, 1999; Bremmer, 2014; Cardoso, 2009; Clark, 1967; Cohen, 2000; Columbus, 2017; Fogel, 1999; Frey & Osborne, 2017; Furman & Seamans, 2018; Future of life Institute, 2019; Goldin & Reinert, 2012; Kellner, 2002; Steger, 2017; Vollset et al., 2020; Zeleny, 2012).

## 2. Population growth and technological progress

The current processes in the modern stage of globalization also affect the development of humanity. Its results lead to quantitative and qualitative changes. This applies to both individuals and the community, which may have a positive or negative impact (Veshapidze et al., 2015). All global problems are related to population size and its sex-age structure. For example, demographic explosions are associated with the development of uninhabited areas of the world, numerous local and two world wars... And for the demographic explosion, the impetus is new technologies. Population growth and technology development are closely linked and conditioned. Their relationship is shown in Table 1.

*Table 1. Population growth and known events in the history of technology*

Date: Century, years	Population	Famous events in the history of technology
<b>-9 000</b>	5 000 000	The beginning of the first agrarian revolution
<b>-1 000</b>	50 000 000	
<b>-500</b>	100 000 000	Flourishing of ancient Greece
<b>-400</b>	120 000 000	
<b>-200</b>	180 000 000	
<b>0 or 1</b>	300 000 000	Flourishing of ancient Rome
<b>700</b>	310 000 000	
<b>800</b>	330 000 000	
<b>900</b>	360 000 000	



<b>1000</b>	400 000 000	The beginning of the second agrarian revolution
<b>1200</b>	500 000 000	
<b>1600</b>	600 000 000	
<b>1700</b>	770 000 000	
<b>17th century</b>	-	The discovery of microorganisms, the beginning of the Industrial Revolution
<b>1750</b>	855 000 000	
<b>1800</b>	1 000 000 000	
<b>18th century</b>	-	Conduct the first attempt at artificial vaccination against „The flower“.
<b>1850</b>	1 265 000 000	
<b>1900</b>	1 656 000 000	
<b>19th century</b>	-	The discovery of electricity, the lighting of the first lamp, the advent of railways, the invention of the telegraph, the telephone, the automobile, the discovery of DNA.
<b>1925</b>	2 000 000 000	
<b>1950</b>	2 555 974 605	
<b>1970</b>	3 711 961 664	
<b>1980</b>	4 452 547 522	
<b>1990</b>	5 283 687 429	
<b>2000</b>	6 083 550 220	
<b>20th century</b>	-	The invention of the airplane, the car assembly line, the advent of television broadcasting and Internet television, the invention of the penicillin, the construction of a nuclear-powered nuclear reactor, the human landing on the moon, the fight against malaria, the invention of the computer and its improved mouse, the first Creation of automated cellular network systems (0G, 1G, 2G); Successful implementation of the project "Human Genome".
<b>2010</b>	6 830 586 985	3G and 4G technologies
<b>2020</b>	7 557 514 266	5G technologies
<b>2030*</b>	8,202,205,367	
<b>2050*</b>	9,202,458,484	
<b>2075*</b>	9,300,000,000	
<b>2100*</b>	8,400,000,000	

*Source:* Compiled by the authors based on the following data: 1. Population Reference Bureau, 2008; 2. United Nations Department of Economic and Social Affairs, Population Division, 2008; 3. U.S. Census Bureau, International Data Base, 2010; 4. Fogel, 1999

Development and growth in the world began only in the 18th century, after the discovery of the New World, the Second Agrarian Revolution and the Industrial Revolution. Europe, the United States, Canada, Australia and New Zealand have embarked on a path of purposeful and sustainable economic development, creating a growing gap in wealth between these countries and the rest of the world. It is no coincidence that the "political economy" flourished just when European countries began to develop sharply (Gvelesiani & Veshapidze, 2016a; 2016b). With the

development of new technologies, humanity has gone through a new path of development that continues today.

New technologies in medicine have reduced mortality and increased the food base of the population in the agricultural sector (Zoidze, 2020a). At the same time, demographic growth inequality has led to technological, military, and economic inequality (Veshapidze & Zubiashvili, 2021). This would be followed by an attempt to redistribute power and resources between countries and peoples (Zoidze, 2021b).

In the economic literature - fundamental changes in technology that lead to fundamental transformations in economic relations and in the life of society as a whole - there is talk of industrial or technological revolutions (Table 2).

*Table 2. Industrial Revolutions*

<b>№</b>	<b>Revolutions</b>	<b>The Main Source of Growth</b>
<b>I</b>	1770–1860: The 1st Industrial Revolution - The era of steam and grinder production	Steam machine, Grinding machines, Metallurgy, Lathe...
<b>II</b>	1860–1900: The 2nd Industrial Revolution - The era of steel and mass production	Telegraph, Railway, Internal Combustion Engine, Conveyor...
<b>III</b>	1970-2010: The 3rd Industrial Revolution - The Age of Computers	Computers, Electronics, Atomic Energy, Robots...
<b>IV</b>	2010-2060: The 4th Industrial Revolution - The Age of Cyberphysics and the Internet	NBIC - Technology, Genetic Engineering, 3D Printers, RES, Drones, Online Subscription...

*Source:* Compiled by the authors based on the following data: 1. Schwab, 2017; 2. Schwab & Malleret, 2020

During the first three revolutions, hard physical labor was gradually replaced by machines. The fourth industrial revolution is already replacing human labor, replacing it with robots of high artificial intelligence (Zoidze, 2021a). To commemorate the 4th Industrial Revolution, the term "Industry 4.0" appeared, which was widely used at the Davos Economic Forum in 2016, thanks to a monograph by the forum's founder, G. Schwab. The fourth industrial revolution began in 2010 and will last until 2060. It is called the age of cyberphysics and the Internet. As a result, the main sources of economic growth in this period are considered to be NBIC - nano, bio-, info-, cognitive technologies, genetic engineering, 3D - printers, RES - renewable energy sources, drones, subscription to items via the Internet (Schwab, 2017).

The world population is growing at a rapid pace. There is a birth rate boom in many countries. Today the world population already exceeds 7.8 billion people. The population is projected to exceed 9.7 billion by 2050 and 10.9 billion by 2100. Therefore, the world is facing a big challenge: the food demand of the growing

population must be met against the background of limited resources (Otinashvili, 2021a). Given this, the question arises, to what extent will all this be possible?

The annual increase in demand for food is due to the following reasons:

1. World population growth;
2. Improving the material condition;
3. Economic development, etc.

Increased demand for food gives incentives to producers to increase their production capacity, to produce even more food. In order to produce more food, more agricultural land is needed, due to which a huge area of forests is cut down every year, which further worsens the ecological condition. The world seems to be facing a dilemma: either it must provide the world population with a sufficient amount of food, or it must take care of the ecology. That is, it turns out that any choice is unprofitable.

### **3. Population Welfare, Education and the Global Hunger Index**

Thomas Robert Malthus, an 18th-century British philosopher and economist, developed the theory of population. According to this theory, Malthus was concerned with the dangers of world reproduction. If anyone needs to express the essence of the teachings of Thomas Malthus in one sentence, we must use wise sayings: "If you do not want to destroy a person, do not set him on fire every day". Or, a Chinese proverb: "If you want to help a hungry person, give him a rod instead of a fish and teach him to fish." They most accurately convey the main position of Malthus's concept: there is no need to embrace a person with constant support, as this weakens him and makes it difficult for him to deal with the harsh challenges of the outside world.

Malthus's theory states that food production lags behind population growth and it will not be able to sustain a human population while maintaining its well-being. He prophesied that this would result in disease, famine, war, and calamity. Many of Thomas Malthus's statements, of course, can not be accepted, but the undermining of man's dependence on the environment is his undoubted merit. It derives directly from human needs for livelihoods. It is also very important that Malthus draws the attention of researchers and the general public to population growth indicators and raises the question of its regulatory capacity.

The Global Hunger Index is used to measure hunger levels based on various indicators. By setting this figure, attention is paid to those areas of the world where the hunger threshold is very high. This index indicates in which region or country additional efforts are needed to eradicate hunger. To calculate the index, 4 indicators are defined in each country: malnutrition; Childhood illness; Growth retardation in children; Child mortality. The Global Hunger Index "0" is the best indicator, and "100" is the worst indicator. By region, the highest rates of global hunger are recorded in South Asia and sub-Saharan Africa. This is due to the high rate of all four indicators. Low or moderate rates of hunger are observed in Eastern Europe, Latin America and

the Caribbean, Southeast Asia, East and North Africa (The Concept of the Global Hunger Index, 2021).

By countries, according to the 2019 Global Hunger Index, 43 countries have the worst hunger situation. The situation is alarming in the Central African Republic, Chad, Madagascar, Yemen and Zambia. The unfortunate situation is due to hunger and malnutrition in Burundi, the Comoros Islands, the Democratic Republic of the Congo, Eritrea, Libya, Papua New Guinea, Somalia, South Sudan and Syria. The hunger rate is particularly high in the countries listed. Haiti and Nigeria are not only the most vulnerable countries in this respect because of hunger, but also because of the severe impact of climate change.

In such regions and groups that require special approach and care, governments and donors should invest in and support agricultural development. They need to make access to a wide range of services, resources and markets accessible to farmers. A strategy for adapting to climate change should be developed in agreement with the communities and taking into account local needs.

We need to be better prepared for accidents. To reduce the risk of disasters, the involvement of donors and governments should be increased in the following areas, which include early warning and response system operation, maximum operation of the weather forecasting mechanism and the availability of appropriate infrastructure (Otinashvili, 2021b). It is necessary to correct the food system and unequal condition. Transformations must be made in the production and consumption of products. Particularly in high-income countries, it is important to develop mechanisms to reduce emissions and make healthier products available to humans. Governments should support the operation of a sustainable product production system, which means avoiding food loss as much as possible.

Malthus's prediction did not come true. There are many reasons for this. First of all, this is a feature of population reproduction. This implies that over time, population growth slows in the wake of improving economic and social conditions. The second reason is technological progress. Developed science, computer field, medical field, food production technologies. It is now possible to produce food much more efficiently than it was in Malthus's time, or as Malthus imagined.

Another reason for the collapse of the Malthus theory is the process of reassessment of values by humanity: people become more focused on their careers, development, they plan in advance to start a family, the number of children, no longer marry prematurely, etc., which Malthus also considered expedient. This process of reevaluation of values has long begun and continues to this day in developing countries. It is just a matter of time before every country sets its sights on a new world agenda.

In 2020, a new study appeared in the journal *The Lancet*. The world population is projected to reach a peak of 9.7 billion people by 2064. Then it will start to decrease and by 2100 - it will decrease to 8.8 billion. So far the population is still growing. Which poses great challenges to humanity. For example, how to meet the food needs

of more than 9 billion people by 2064? - Many people and many organizations are working on this topic. It is possible to give a convincing answer to it by implementing adequate technological advances (The Lancet, 2020).

It is important to implement new agricultural technologies, which will help increase production capacity and reduce costs. A farmer equipped with modern electronic technologies can significantly increase his labor productivity, work much more efficiently, less harmful to the environment. He can reduce the rate of world hunger by his own labor.

Throughout history, at every new stage, mankind has constantly expressed dissatisfaction with the state of affairs in education and asked the question - what should be education today and how should it develop in view of the requirements of tomorrow. The process of search, as well as the development of humanity itself, is uninterrupted, and those who are obsessed with reformist ideas are often forgotten, not the "subject" or "object" of education, but the person for whom this system was created - man.

First of all, education will increase a person's productivity and qualifications, which will eventually lead to an increase in the level of wages. The more educated a person is, the greater his potential to find a job, earn a high stable income, and move to a higher standard of living.

At the end of 2019, a wave of coronavirus pandemics started in the world. The pandemic has put the whole world in front of a big problem, which besides human health is also an economic side (Zoidze, 2020b). The world economy has suffered the greatest losses. Millions of people were left temporarily or permanently unemployed. More than 100 million people are on the brink of extreme starvation. Of course, the pandemic affected education as well. Most countries have switched to distance learning, including Georgia (Veshapidze & Zoidze, 2021).

It is clear that the coronavirus pandemic is a terrible thing for the world, but, it has had at least one positive result. We have seen how countries are ready to suddenly change the rhythm of ordinary life. In terms of education we have the opportunity to gain distance learning experience.

We live in an age of truly revolutionary challenges, risks, as well as advantages of digitalization, which in its significance can be freely compared to the industrial revolution that took place 200 years ago. Digitization at its own pace, with its own challenges, is important for the future development of educational disciplines.

It is also very important that the professional qualifications of the representatives of different fields themselves take into account the requirements of digitalization as much as possible in the process of receiving education. Only an institution that is maximally involved in such networks can be successful today, which is not only distinguished by purely professional approaches, but also it can overcome existing challenges through networked approaches together with other sectors of society.

Digitization is a comprehensive process that covers all aspects of social life, from everyday relationships to our professional activities and digital money (cryptocurrency) (Abuselidze & Zoidze, 2021). Digitization should be seen as a challenge that involves many risks but also offers many opportunities. How we use these opportunities depends on the diligence of us, as all groups in society, on a realistic perception of the challenges we face during the dynamically ongoing processes. Therefore, we should look at it only as a challenge and integrate this challenge as much as possible in the process of our daily activities.

The role of the state in education is also noteworthy. The state has motives to be actively involved in the education process and to fulfill its educational functions with appropriate levers and reforms, to ensure the growth of the education level of the population and thus to develop the economic and social side of the country (Veshapidze et al., 2021).

Covid-19 and The War in Ukraine posed great changes and challenges to the world economy and international economic relations. The political and economic situation in the Black Sea region has intensified. This is manifested primarily in the fact that oil and oil products have become more expensive; Due to the coronavirus pandemic, already high inflation has risen again (Zoidze & Abuselidze, 2021); In the stock market, the price of securities fell by about 10%. This conflict has a much greater negative impact on the Georgian economy. This refers to the reduction of remittances from abroad, the export of Georgian products to Russia and Ukraine, etc. Due to the state of war, the ports are closed. Consequently, products cannot be imported from Ukraine. As the main suppliers of wheat in Georgia are Ukraine, Russia and Kazakhstan, markets in this area should be differentiated, which is associated with additional costs. In such conditions, the main task is to ensure the security of each citizen of the country, their own families (Basilia, 2022).

Therefore, it is important to intensify relations with neighboring countries - Turkey, Azerbaijan, Central Asian countries. They have oil products, wheat and etc. Transportation and import are easily possible with Romania and other EU countries.

#### **4. Conclusion and Recommendations**

The rapid growth of the world population and the modern threats to sustainable development - local conflicts, wars, the COVID-19 pandemic, the Russian war in Ukraine - have posed challenges to human well-being. Many countries are facing the threat of severe food shortages and famine. Georgia needs to strengthen state thinking. This means protecting Georgia's national interests in energy, food, economy and all other areas as much as possible. It is important that the country is based on stable state institutions in the long run.

As Georgian public figure Ilia Chavchavadze said, his country's first priority should be "serving the people." This means ensuring the political, economic, social development of the state, and protecting human rights. In fact, the first priority areas

should be implemented: macroeconomic stability; Increase in production; Import diversification; Improving the country's guaranteed food supply; Full use of geopolitical space, maritime and transport corridor, comprehensive promotion of transport potential; Attracting foreign investment (especially from Western companies).

We should not allow Georgia to be used to circumvent the sanctions imposed by the countries of the world community. It is also important to employ middle- and high-skilled immigrants in the country, to conclude free trade agreements with all strategic partners, to ensure peace, security and stability.

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## IMPACT OF INSTITUTIONAL QUALITY AND TECHNOLOGICAL PROGRESS ON COUNTRIES ECONOMIC DEVELOPMENT

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### Abstract

*During the last year economics literature has increasingly referred to institutions as the answers to the longstanding questions concerning how economic growth arises, what policies can be used to promote the best results in terms of economic performance and what accounts for differences in GDP levels among countries so that the analysis of the institutional framework under which any economy operates has now become an indispensable object of research. In a globalizing world economy, the cause of differences in economic growth and income inequality is explained on the basis of technological differences. The use of new technologies paves the way for the production of new cheaper goods, capital accumulation, and, in this case, increased international competitiveness of individual countries. On the one hand, this improves the quality of research institutions and, on the other, contributes to the cultural and political development of societies. Therefore, the quality of growth rates is as important as their size. This study aims to demonstrate that businesses and individuals need to use technology more efficiently, leading to cost savings and productivity gains. The main research methods used in this study are content analysis, analysis and synthesis method, intuitive and systematic approach.*

**Keywords:** Institutional quality; Technological progress; Economic development

**JEL Codes:** O10, O14

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### 1. Introduction

A report by the National Centre for Territorial Development, co-financed by the European Regional Development Fund, states that public spending on health is increasing annually without any tangible effect and/or improvement in the system. (Socio-economic analysis of the regions in the Republic of Bulgaria, 2019). Bulgaria's economic development shapes the overall shape of national prosperity and well-being. Institutional quality and financial growth are the two key factors influencing economic development. Add to this the technological advances in a highly globalized society, and a triad of institution-economy-technology takes shape that is central to the development of the social payment system in health care. Both physical and human capital, accumulation and technological change cannot simply explain economic

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growth. Quality institutions and financial development, a healthy and dynamic economy is only possible when the institutional and financial sectors grow and move significantly. Mention may also be made of the difference in nature and effectiveness of legal and political institutions that give diversity in development. They depend on the degree of persistence and affect the accumulation of the factor of production and marginal efficiency, respectively - on the national product. In other words, these intuitions can act as a stimulus to economic development by forming a motivational structure and providing suitable alternatives for productive activities on the one hand, and as a disincentive by diverting production and increasing transaction costs and investment risk on the other (Kacho & Dahmardeh, 2017).

Although economic growth has been widely studied, traditional economic theories lack a framework explaining differences in economic systems across countries beyond human capital, physical capital, technology and natural resources. (Giordano & Giugliano, 2015).

## **2. Literary review**

In a European Employment Policy Observatory (EEPO) workshop held in 2014, interest focused on impact of technology on job creation and/or retrenchment in the near future, and which economic sectors would deliver a 'job-rich recovery' (European Employment Policy Observatory, 2014). It also discussed the polarization of jobs and how to improve skills provision to make technology an engine for growth.

A number of studies have addressed the impact of technological progress on society (workers; firm sectors and regional agglomeration of sectoral activities; consumer attitudes to new technologies; the urgent challenges for governments with recent and future technological progress) and in particular how technology can change the quality of jobs, impact on growth of sectors and regions and what can be done, to build trust in society to use technological advances and what government can do to help adapt technology in society. Job growth, like economic growth since the industrial revolution and the more recent computer revolution, requires innovative optimism, not pessimism, about the future of work and welfare.

In 1956 Robert Solow made a significant contribution, explaining that long-run economic growth is limited to the rate of technical progress, which at the time he took to be exogenous. His essential revelation is that, given constant returns to large-scale production technologies, all countries can converge to the income levels of the most productive countries and henceforth grow at the exogenous rate of technical progress (Solow, 1956). In 1992 Gregory Mankiw, David Romer and David Weil conclude that this conclusion extends to an extended model that includes human capital in addition to physical capital. However, to reap the benefits of recent and future digital technologies, policymakers face a number of important decisions. (Mankiw, Romer & Weil, 1992). For example, while new technologies abound, an important barrier to innovation leading to more and better jobs and economic growth is whether workers can provide the skills needed to work with these new technologies. Another example

is that while the industrial revolution improved the quality of jobs and led to less inequality, the evidence of the computer revolution points in the other direction - namely that technology is now undoubtedly increasing the quality of jobs due to polarization and rising inequality (European Employment Policy Observatory, 2014).

Much of the pioneering work in institutional quality was done by the scholar Douglas North, who defined institutions as constraints on human behavior that shape the interactions between people. According to him, the quality of institutions improves with the restrictions imposed on the executive. Such restrictions may be either formal or informal and their strength is determined by the characteristics of their application. The idea is that limitations on executive power diminish the legal standing of a state's executives to place themselves above the law. This ensures that people, entrepreneurs, challengers of the current economic system, are protected by law in their ventures and their investments in human and physical capital, as well as the development of innovative technologies (North, 1990).

### **3. Analysis and discussion**

To ensure sustainability of economic reforms a study of the impact of institutional and technological progress on economic growth is needed. After the appearance of weaknesses and criticality built into strategies and actions of international bodies and financial systems, the criticality is even more evident as a result of the recent financial crisis. As a result, the World Bank was forced to reconsider its own efficiency in developing countries and countries with economies in transition; this critical pattern of revision is well represented by the works of J. Nellis, who, even defended the positive achievements of some programs, does not deny the existence of failures and the resulting need for rethinking the theoretical model: in this sense, according to the author, the most serious flaw in the strategies of the World Bank was to be found in the scant attention given by international organizations to support economic reforms through political and institutional mechanisms such as the neglected creation of a strong administrative system or a legal apparatus capable of support the economic transition (Nellis, 1999). This new orientation pinpointing the causal relationship between the institutional framework and economic growth is highlighted in the World Development Report 2002 Building Institutions for Markets, focusing attention on which institutions are essential to increase market development. As the "institutional question" has taken a backseat in the run-up to the new millennium playing a leading role in achieving economic growth and development, a methodological problem regarding the term "institutional" is actually meant to emerge soon. Havrylyshyn and McGettigan articulates this sense of loss and confusion about a definition of 'institutional framework' (Havrylyshyn & McGettigan, 1999).

Technological progress impacts human capital through:

- emerging fears of new technologies automating many jobs. As an example, a study suggests that 47% of all jobs could be automated by 2035;

- polar view of the above, namely the creation of new jobs due to the entry of new technologies;

- conducting the so-called smart policies that aim to create workforce talent. These types of policies are not limited to more and better education, but take into account the polarization of jobs in the labour market due to recent technological progress.

In a speech by Lorenzo Bini Smaghi, Member of the Executive Board of the European Central Bank (ECB), the main factors that characterise economic growth in advanced economies in a society characterised by limited demographic growth are pointed out, technological progress is the main driver of economic progress:

- the main instrument for technology development is human capital;

- the supply of skilled labour, which makes intensive use of human capital, has not kept pace with the increase in demand in either the US or Europe;

- there is a strong correlation between the level of education and the likelihood of getting a well-paid job. Those who do not have access to education risk being marginalised and having relatively low incomes;

- in advanced societies, new generations are not prepared for the new competitive environment. Such preparation occurs in the early years of an individual's life (some say the first seven years) when personality and cognitive abilities are formed;

- educational methods are largely responsible for this lag. The natural tendency to apply the methods inherited from the previous generation is insufficient in the context of excessive demand for high-quality education;

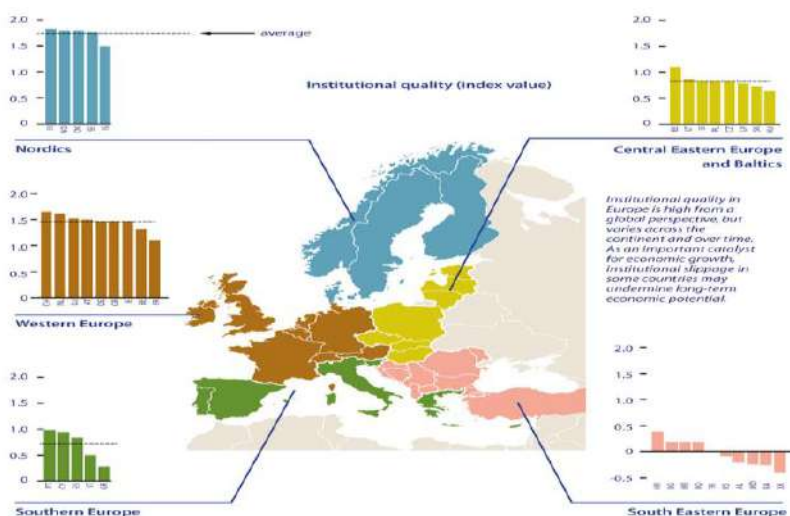
- the process of changing educational methods and adapting them to the needs of a global society is labour-intensive (Smaghi, 2010).

Smaghi also foreshadows the trends of recent policies towards technological progress and its impact on economic growth. Considers that European regions differ in their high-tech employment intensity with high-tech centres featuring strong local employment multipliers. This includes adding that there are regions that are catching up due to limited high-tech employment. It believes that policies should stimulate high-tech employment in less innovative regions and/or allow wage growth in more innovative regions to create competitiveness. In 1986, Paul Romer put forward the idea that knowledge could be a productive resource that could drive the technological process (Romer, 1986).

Years later, Robert Lucas extended this view with learning by doing to operationalize the properties of knowledge associated with increasing returns. This has given rise to extensive research on the production of knowledge, on the difference between codified and tacit knowledge, on publicly accessible 'knowledge pools' from which whole societies can benefit (Lucas, 1993). Along with process technology, institutional quality is also a factor influencing production. It is therefore logical that institutional quality generates differences in economic growth across countries.

Glaeser and Schleifer relate long-run growth (real GDP per capita growth) to a set of variables that also contain indicators of institutional quality. Although they dispute the importance of most of the indicators used, they generally acknowledge the positive impact of institutional quality on growth outcomes over the decades covered by their analysis. Their view is that institutional quality contributes to the factors that generate economic growth, and should therefore be seen as a factor of production (Glaeser, La Porta, Lopez-de-Silanes & Schleifer, 2004). In a more recent contribution, Góes makes this relationship clearer by linking institutional quality to a country's level of real per capita income (Góes, 2015). It incorporates the feedback between institutions and growth in line with Johnson and Robinson's framework by empirically applying structural vector autoregression (SVAR). In addition to Glaeser, Góes also explicitly translates the "treatment" of institutional quality into an "effect" in terms of per capita income levels. Hence, according to Góes, institutional quality is a factor of production with diminishing returns. Hence, according to Góes, institutional quality is a factor of production with diminishing returns. Thus, institutional quality is more productive at lower levels and may "run out" when it reaches high levels (Góes, 2015).

Figure 1. Institutional quality in European countries



Source: European Central Bank, Rabobank, 2016

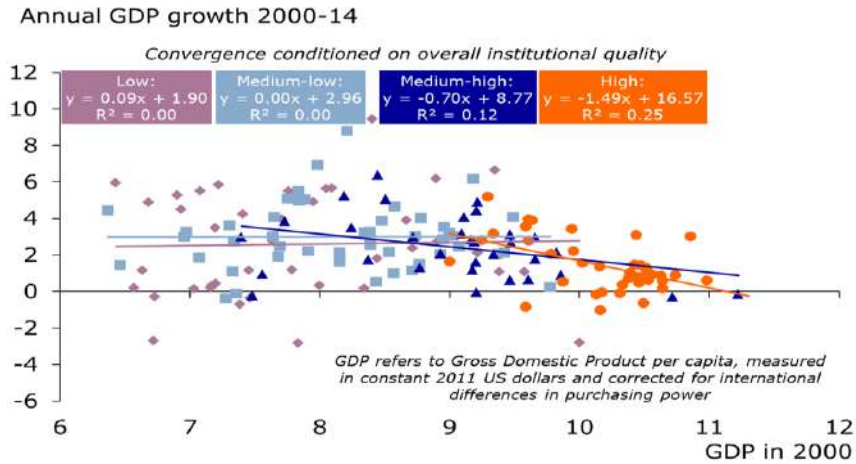
The question of the index of institutional quality continues to be of interest among academic circles. The most active participants in this debate are Acemoglu, Johnson, and Robinson - supporting the direction of causality between institutions - driving force and progress - and Glaeser, Lopez-de-Silanes, and Shleifer - who strongly supports reverse causation (Acemoglu, Johnson & Robinson, 2002). Interestingly, both sides of the debate use the historical example of Korea to build their case. Acemoglu et al. refer to the Korean indication that the two Koreas at the

end of World War II differed little in terms of economic endowments or structure (Acemoglu, Johnson & Robinson, 2005). The main difference is in terms of subsequent choices regarding institutional organization. South Korea maintained a system of private ownership and an economic model based on private incentives and market forces. Thus, South Korea followed the path of inclusive institutions and prospered, becoming one of the "Asian economic miracles" of the 1960s. In contrast, North Korea follows the communist model in abolishing private property and installing a centrally planned economy. The North Korean regime chose extractive institutions and has since seen its economy lag behind that of its southern neighbor, even falling behind in terms of absolute economic well-being since 1990. Acemoglu et al. view the Korean "natural experiment" as a clear case in support of their view that institutional quality is an essential element in the enabling environment that drives long-term economic progress (Acemoglu, Johnson & Robinson, 2002). According to Glaeser et al. (2004), referring to the same experiment, indicating that the difference in institutional quality between the two Koreas is insignificant when they are divided into two separate countries. According to Glaeser et al. (2004), subsequent economic development has allowed South Korea to adopt a more inclusive institutional arrangement. Thus, in essence, they see the contemporary difference in institutional quality between South and North Korea as a result of the economic progress seen in the South, rather than the other way around. Incidentally, but importantly, they implicitly view institutional inclusion as a kind of luxury good that societies can only afford to invest in once they have achieved a minimum level of economic prosperity. However, they do not explain what generated the South Korean launch and why it never reached North Korea. Acemoglu, Johnson and Robinson (2005) acknowledge the interplay between economic performance and institutional quality, but maintain that institutional quality leads this dance.

From the data in the figure illustrating Rabobank's study on the institutional quality of countries in Eastern, Western, Northern, Southern, Central and South-Eastern Europe, it is clear that the continent has ranked among the world leaders in terms of well-developed institutional frameworks for many decades. In line with the postulated link between institutions and economic development, GDP per capita in huge parts of the continent also ranks among the highest in the world. The spread of institutional quality across the continent is consistent with the level of economic prosperity. It is evident, however, that the countries with the lowest index scores are from South-Eastern Europe, which means that the quality of institutions is deteriorating, with the study mentioning that Italy and Greece suffer from a combination of poor scores in terms of corruption, rule of law and government effectiveness, combined with low scores for political stability, especially in Greece. The detrimental combination of poor performance in terms of legal protection and rule of law, control of corruption, government effectiveness and prolonged political instability represent major institutional challenges, all of which exceed the global

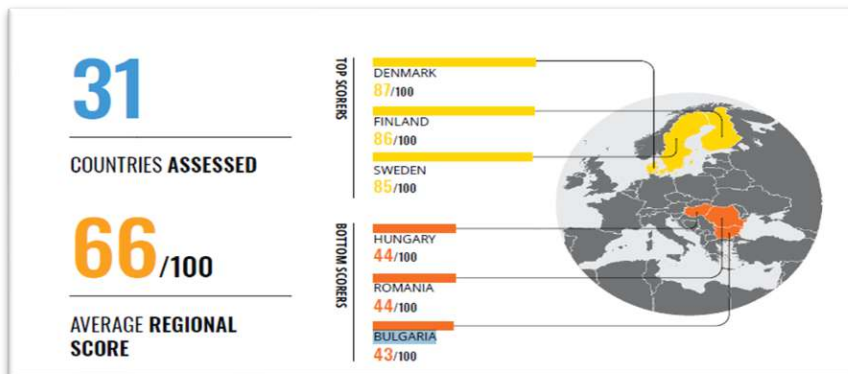
average in the south-eastern region of Europe, which brings out the low levels of institutional quality.

Figure 2. Convergence conditional on institutional quality



Based on the analysis of these results, it is clear that institutional quality provides an environment conducive to innovation and technology adoption, and more generally an environment that provides people with incentives to invest in innovative ideas as well as human and physical capital to build a better economic future for themselves. However, these results are not conclusive at this stage and should be interpreted as preliminary, which also raises some questions that are not the subject of our investigation.

Figure 3. Transparency International Corruption Survey





As can be seen from the data in the figure, Bulgaria is not mentioned in the representative survey, but in the reports of the international NGO Transparency International, which measures the levels of perception of corruption, our country ranks last in the European Union.

#### **4. Conclusion**

Based on the analysis, the following conclusions can be made:

*First*, high institutional quality is highlighted as an impetus to economic growth by stimulating economic activities such as consumption and investment, improving efficiency, allocating resources more efficiently, protecting property rights and supporting freedom of choice.

*Second*, in the global economy, the cause of the differences in economic growth and income inequality is explained on the basis of differences in technology, and the main instrument for developing technology is human capital, despite a highly globalized society.

*Third*, Bulgaria ranks last in the European Union in terms of corruption perception. This is due to the lack of free speech, the distrust in the electoral process, the way political parties are financed, the appointment procedures in state institutions, and the application of the rule of law.

*Fourth*, institutional quality and financial growth are the two key factors that influence economic development. Add to this the technological advances in a highly globalized society, and a triad of institution-economy-technology takes shape that is central to the development of the social payment system in health care.

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## EVOLUTIONARY MODELS OF THE INNOVATION PROCESS

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### *Abstract*

*The topic of the evolutionary patterns of the innovation process is of particular importance for the functioning of any company, as it is important to comply with the modern requirements of the environment in the implementation of the founding activity of any enterprise. The purpose of this paper is to present the evolutionary patterns of the innovation process from 1950 to the present, and to determine which generation of the innovation process the modern enterprise should adhere to in its operations. To achieve the given objective, Roy Rothwell's theory, Klein-Rosenberg's chain model, and Chesbrough's model based on open innovation are presented. The expected results of the research are the identification of the place of the modern industrial enterprise among the analyzed generations and the characterization of the innovation process, which should proceed according to the requirements of the defined innovation process model.*

**Keywords:** *linear model; nonlinear model; interactive model; Japanese model; knowledge management; innovation imitation*

**JEL Codes:** *O31, O33, O36*

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### **1. Introduction**

There are a number of definitions of innovation in economic science, but none of them can be accepted as uniform. "The definition of the term "innovation" is under constant change and refinement. Today, innovation can mean new and unique applications of old technologies and ways of learning, using design to develop new learning materials, digital programs and services, new processes and structures to improve productivity in different scientific disciplines, organizational creativity and initiatives of the public sector to improve service delivery." (Yuleva-Chuchulayna, 2022, p. 527). Some of the definitions consider innovation as a product (Kulagin), others as a process (Santo; Massey, Quintas, Wilde, Twist, Cook, Myers), and others as the result of a process (Fathutdinov).

An example of defining innovation as a product is given by Kulagin (2004, p. 58), according to whom innovation is a new or improved product (good, activity, service), a method (technology) of their production or application, an innovation or improvement in the sphere of organization and (or) economy of production, and (or)

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realization of production, providing economic benefit, creating conditions for such benefit or improving consumer properties of production (goods, activities, services).

Innovation as a process is defined by Santo (2004, p. 24). The definition he proposes is the following: innovation, it is such a social, technical, economic process, which through the practical use of ideas and inventions leads to the creation of products, technologies better in their properties, and in this case, if it is oriented to economic benefit, income, manifestation of innovation in the market, can lead to additional income.

Another definition of innovation as a process belongs to Massey, Quintas and Wild (1999). According to them, innovation is a process involving such types of activities as research, design, development and organization of production of a new product, technology or system.

The definitions of innovation as a process proposed by other authors are also worthy of attention, which have the following content: "Innovation is the complete process from ideas to a marketable finished product" (Cook & Myers, 1996).

Also - "Innovation is the process in which an invention or idea acquires economic substance" (Twist, 1989).

Fathutdinov (2008, p. 15) presents innovation as the result of a process. According to him, innovation, it is the final result of the implementation of innovations with the purpose of changes in the object of management and obtaining economic, social, environmental, scientific and technical or other effects.

According to Yuleva-Chuchulaina "innovation is the deployment of concepts or creativity that improve products, processes and procedures by increasing the relevance, utility and effectiveness of an SME's products or services" (Yuleva-Chuchulaina, 2021).

In the next section we will discuss the nature of the innovation process and its evolution as a concept and stages.

## **2. Theories of evolutionary patterns of the innovation process**

Analyzing the definitions of innovation, we can notice that in all of them, regardless of the nature of the innovation (product, process or result of a process), it is expected that after certain actions aimed at creating, changing or improving a product, a positive economic result will result.

Regardless of which of the understandings of the nature of innovation one accepts - product, process or result - the commonality between the different definitions is the final result in economic terms. It must be better than the one before it, if it is an improvement in product or technology, fewer resources must be invested in order to achieve a higher positive financial result from the activity.

In view of the need to carry out a number of actions to achieve the positive economic result, we can define this sequence of actions as a process.

The term 'innovation process' is relatively new. It was first used in the Dictionary of Innovation in 1986 to refer to the sequence of stages in the transformation of an idea into a concrete outcome: perception of a problem or opportunity; first conception of an original idea; research and development; first exit to production and to market; application and implementation; refinement and amendment, bringing revenue (Haustein & Maier, 1986).

The division into distinct stages of the innovation process is characteristic of the scientific and technical field.

According to Panteleyeva (2013, p. 66), the innovation process is regular, relatively continuous and dynamic, oriented towards the introduction of new or the improvement of existing elements. In general, it can be defined as a process of creation and diffusion of innovations, i.e. as a set of sequential and logically related activities that take place from the moment the idea for an innovation is conceived to its market realisation and subsequent diffusion.

Like any scientific theory, the theory of innovation and the innovation process change and evolve over time. In view of changes in the environment and changes in the factors influencing the innovation process, the stages through which an innovation passes in the innovation process vary in number and nature.

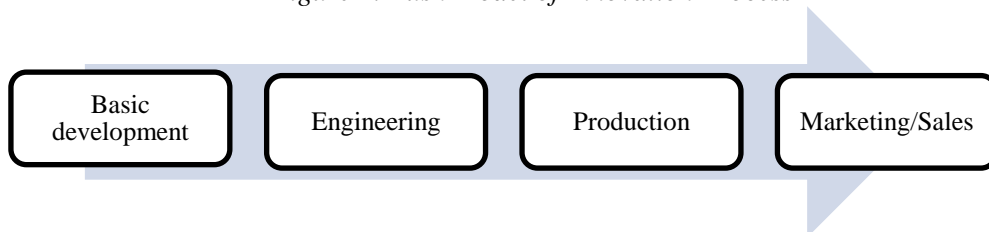
The modern methodology of innovation process research is based on three hypotheses (Ivashtenko et al., 2016):

- "technological impetus" hypothesis;
- hypothesis of "market demand pressure";
- "interactive patterns" hypothesis.

Considering the "technological push" hypothesis in more detail, we will notice the following of a linear model of the innovation process. It shows the successive transformation of ideas into a commercial product through the following stages: fundamental, applied research, development and technological development, marketing, production and, finally, sales.

The so-called Technology - Push model of the innovation process can be visually depicted as follows:

*Figure 1. Push Model of Innovation Process*

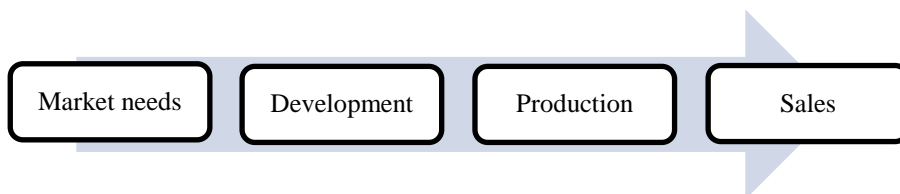


*Source:* Ivashtenko et al., 2016, p. 38

The disadvantage of the linear model is that it does not take into account the influence of the environment. This puts the second hypothesis - market-pull - in a more significant position.

It is based on the pressure on market demand. Schematically presented it looks as follows:

*Figure 2. Marketpull Model of Innovation Process*

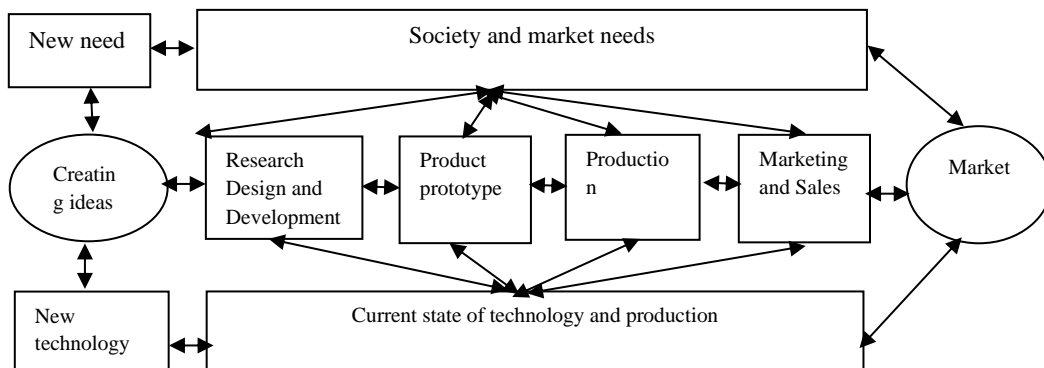


*Source:* Ivashtenko et al., 2016, p. 39

This hypothesis links the growth of innovation potential to market demand.

Gradually, enterprises have come to the conclusion that an interactive non-linear model is needed that also takes into account market demand and technological development. The interactive model (Coupling Model) looks as follows:

*Figure 3. Interactive Model of Innovation Process*



*Source:* Ivashtenko et al., 2016, p. 40

The evolution of innovation process models presented in this way reveals the gradual adaptation to new market conditions, new consumer demands and the path a product has to go through from the generation of an idea to its appearance on the market.

The theory of Roy Rothwell (1994), a British sociologist and economist who has made significant contributions to the theory of innovation, occupies an important place in the academic literature. Taking into account a number of marketing factors,

he presents his model involving five generations (generations) of the innovation process.

If we compare the three hypotheses presented graphically above, we can relate them to Rothwell's five generations of innovation models. He includes the first two generations to the linear approach to define the innovation process. The third generation expresses the relationship between the first two generations and can be correlated to the non-linear approach. The following generations express the interactive model with the presence of linear and non-linear relationships.

The five generations, according to Rothwell, have the following boundaries:

- first generation - 1950s - mid 1960s;
- second generation - late 1960 - early 1970;
- third generation - early 1970 - mid-1980;
- fourth generation - mid-1980 to present;
- fifth generation - present time - future (Hairullin, 2011).

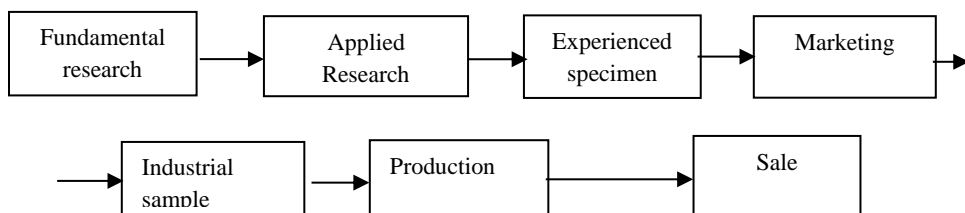
The process of creating and mastering new techniques in the theory of Roy Rothwell (Kovalev & Ulanov, 2010) begins with fundamental research. The second stage of the innovation process, that is applied research works. The third stage involves the implementation of developments at the stage of experimental and design works. At the fourth stage, the process of commercialization of innovations is implemented. The stages involved there are the pre-series production stage and the industrial production stage.

Rothwell's theory is the basis of modern research in the field of innovation process. The fifth generation, which he introduced as an evolutionary stage, expresses the business planning so necessary for any company. Looking into the future through strategic planning and formulating strategic goals adds further certainty to the process of realising an innovation idea.

Dzhuha (2016), in his textbook on Innovation Management, presents the five generations of the innovation process as a sequence of stages, which will be schematically presented below.

The author illustrates the first stage, the Technology Push Model, in the following way (Fig. 4):

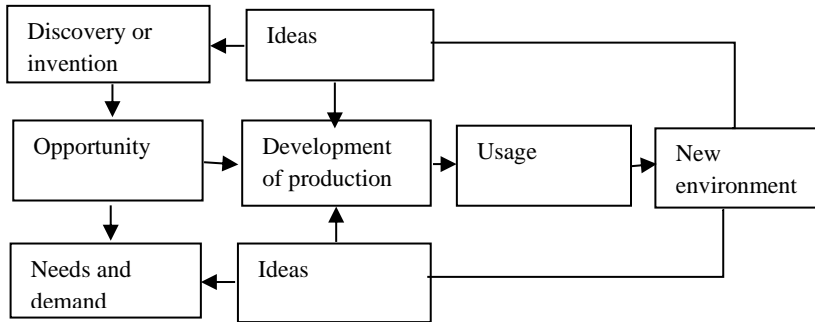
*Figure 4. First Generation of Innovation Process*



Source: Dzhuha, 2016

The second stage, which is also a linear model, the author calls Need pull Model (Fig. 5):

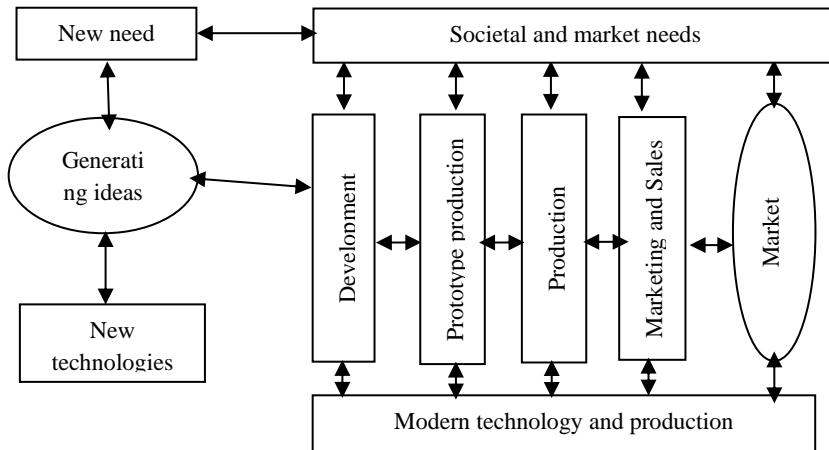
*Figure 5. Second Generation of Innovation Process*



Source: Dzhuha, 2016

The author calls the third stage or the so-called third generation innovation process the Coupling Model. It is a combination of the first and the second model. Depicted graphically it looks like this (Fig. 6):

*Figure 6. Third Generation of Innovation Process*

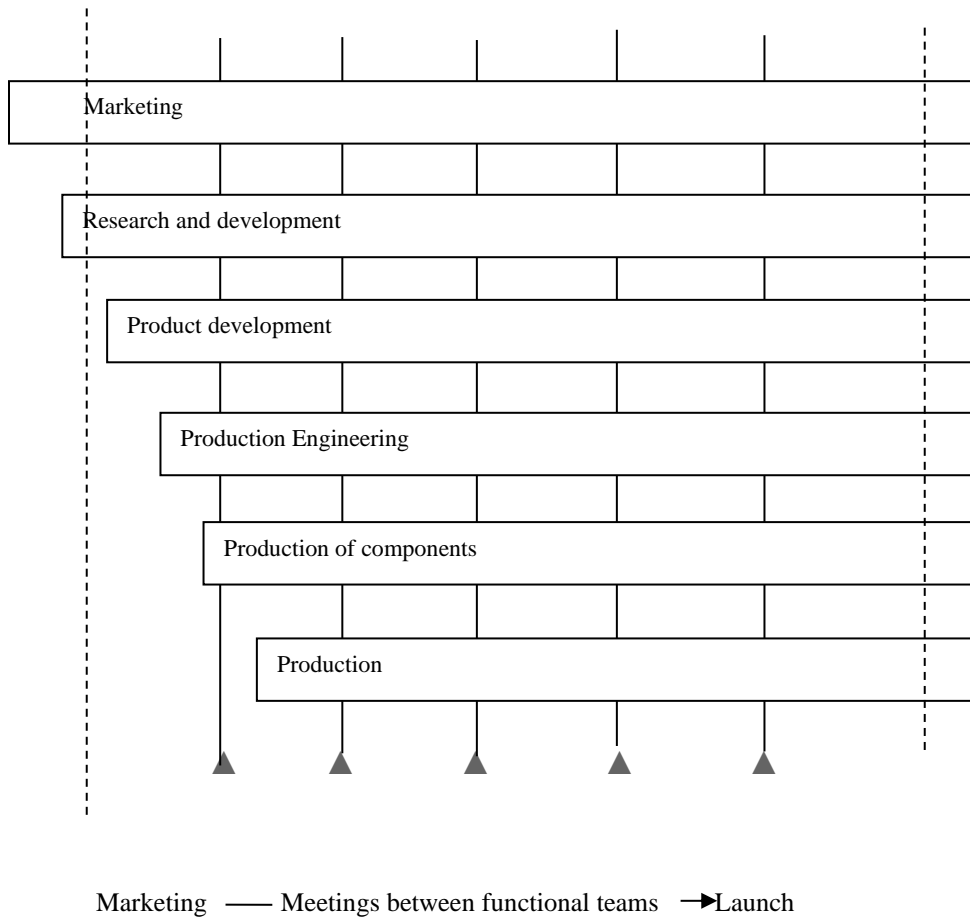


Source: Dzhuha, 2016

The fourth stage (fourth generation innovation process) is known as the Japanese model. It is distinguished by the simultaneous action by the integrated groups and the presence of external horizontal and vertical linkages. It can be represented graphically as follows (Fig. 7):



Figure 7. Fourth Generation of Innovation Process



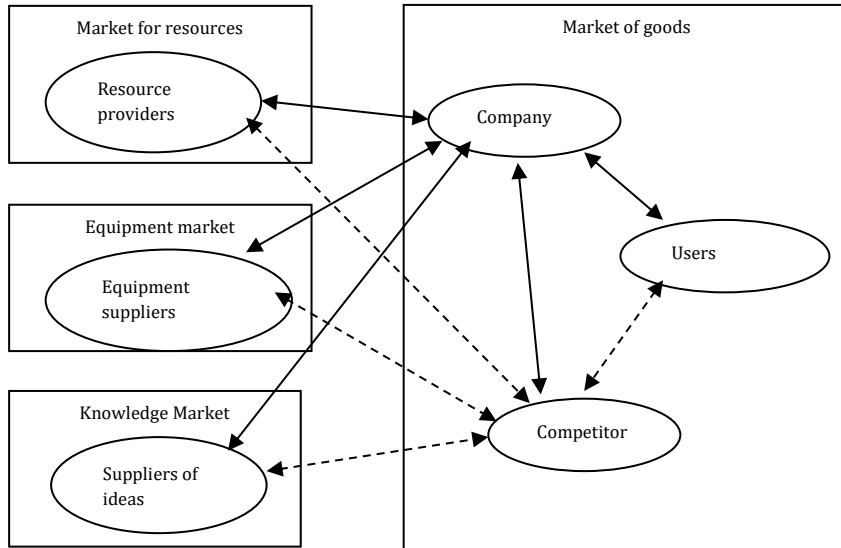
Source: Dzhuha, 2016

The fifth stage (fifth generation of the innovation process) covers, as already mentioned, present and future time. Also known as the Strategic Networking Model. In this model, R&D activities are introduced through the application of latest computer technologies, simulation modeling, automated design, expert systems, and integrated agile manufacturing systems (Dzhuha, 2016). A graphical representation of the fifth generation can be seen in figure 8.

Analyzing Rothwell's theoretical models, we again observe the interference of encroaching novelties. The first models, linear and non-linear, are relatively simplistic, while in the subsequent models, especially in the Fifth Generation of the innovation process, a link is made between the goods market and the markets for resources, equipment and knowledge. In order to interact between the goods market

and the other markets, there must be suppliers of resources, equipment and ideas respectively.

*Figure 8. Fifth Generation of Innovation Process*



Source: Dzhuha, 2016

In turn, the goods market can be seen as interacting elements that include the company that enters the goods market, consumers and competitors. The important role of small business is that it is flexible enough, provides a significant number of new jobs, saturates the market with new goods and services, satisfies the numerous needs of enterprises, produces special goods and services, has economic freedom and is innovative.

Of interest is the systematization of Burmenko and Pochomchikova (2014). The following table systematizes the innovation process design models according to these authors:

*Table 1. Evolution of innovation process models*

<b>Time parameter</b>	<b>Conceptual parameter</b>
1930 – 1960	Model Technology Push
1960 – 1970	Model Market pull
1970 – present days	Collaborative model 1+2
1980 – present days	Chain model Klein - Rosenberg
1990 – present days	Model of integrated networks and circuits
2000 – present days	Chesbrough model based on open innovation

Source: Compiled by the author based on material from Burmenko &Pochomchikova, 2014

The new distinct models of the innovation process in the table above, this is the Klein-Rosenberg model, which expresses the inability of linear models to reflect innovation processes comprehensively. C. Klein and N. Rosenberg first paid attention to knowledge management.

According to the model of integrated networks and chains, in the context of limited resources, it is important not only to work on strengthening within the enterprise, but also on creating network interaction in the external environment.

The open innovation model is associated with the concept of 'imitation innovation'. In contrast to Rothwell's theory, which we have examined in detail, we also notice here a 'sixth generation', which the American scholar Henry Chesbrough developed as a concept.

According to him, open innovation is "the purposeful use of knowledge inflows and outflows to accelerate internal innovation, and expand markets for internal use. Open innovation is a paradigm that suggests that enterprises can and should use external and internal ideas, and internal and external pathways to market" (Manolov, 2016).

Following the evolutionary models of the innovation process thus presented by various researchers, we will propose a model of the innovation process that is suitable for the industrial enterprise today based on the theoretical basis.

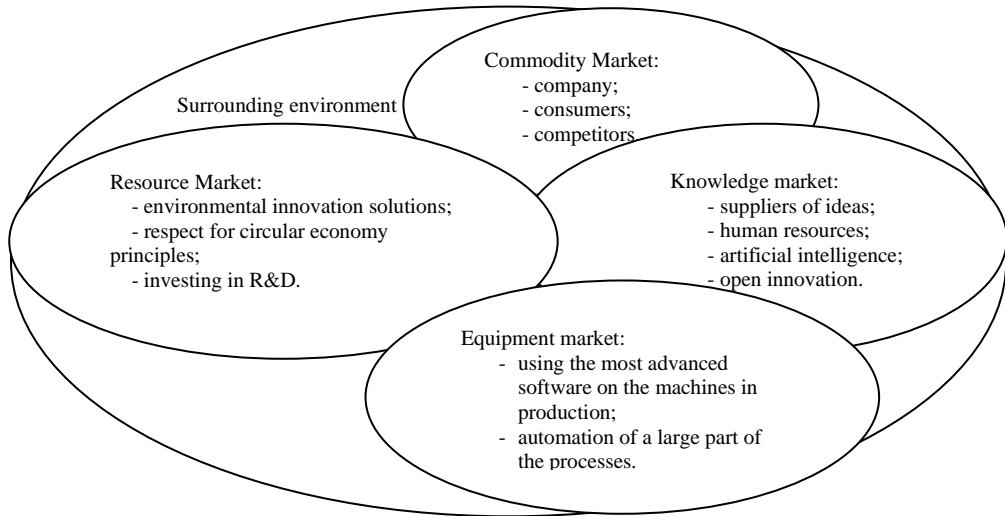
### **3. The innovation process in the industrial enterprise**

Based on the analyzed innovation process models, we can design a model applicable in the industrial enterprise. For this purpose, it is important to characterize the industrial enterprise in order to be able to trace how its activity proceeds and to determine what are the differences between the industrial enterprise and the commercial enterprise offering goods or services. In other words, what are the characteristics of the production process in relation to innovation compared with the innovation process in a company that trades in goods or services.

It is important to take into account the technological advances of today and to take into account the development of business processes.

In relation to the innovation process and the activities that take place in the enterprise, the model we propose contains elements of the models presented above, corresponding to fourth and fifth generation innovation, combined with new elements belonging to the sixth generation, proposed by the American scientist Chesbrough.

Figure 9. The innovation process in the modern industrial enterprise



Source: Compiled by the author

As a clarification to the above figure, we can summarize that in our opinion, the appropriate innovation process model will necessarily include all resources and equipment that, through their use, will be environmentally friendly; it is of particular importance to apply state-of-the-art technologies in technical and software activities. It is also important that the human resources employed carry out their activities in conjunction with the capabilities of artificial intelligence and open innovation by building networks of partnerships with scientific institutions and leading business partners that contribute to the vertical development of the industrial enterprise. Sufficient resources should also be invested in research and development to ensure the most efficient production of the highest quality.

## Conclusion and Recommendations

After presenting the main theories of the evolutionary models of the innovation process, it becomes clear that from the 1950s to the present day the theory of the innovation process and its models have undergone a number of changes. The transition from a linear to a non-linear approach, then to an interactive approach and to an integrated approach is due to changes in the factors that influence the innovation process.

We can conclude that regardless of how we perceive innovation as an entity - product, process or outcome, the commonality between the different definitions is the final outcome in economic terms. It must be better than what preceded it, if it is an improvement in product or technology, and it must also aim to achieve a positive financial result from the company's activities by using fewer resources.

The next conclusion is that in each of the theories of evolutionary models of the innovation process considered, a positive economic result is expected to follow specific actions aimed at creating, changing or improving a product.

The presented theories according to their time span can be distinguished as different generations of the innovation process.

Nowadays, enterprises in industry have to combine as stages of their innovation process the characteristic of the fourth, fifth and even sixth generations. It is important for the enterprise to strive to update its resources, equipment, knowledge and goods according to the modern and constantly changing requirements of its environment.

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## THE BASES FOR THE DEVELOPMENT OF A STRATEGIC MARKETING TOOLKIT FOR AN INDUSTRIAL ENTERPRISE

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### **Abstract**

*Nowadays marketing plays an important role in the business activity of an enterprise. Modern changes of external environment induce enterprises to search for new ways of development and introduction of new marketing strategies. Marketing tools help the enterprise to carry out market analysis, customer attraction, sales, etc., all of which are crucial factors for the enterprise's success in the market. However, there are many different methodologies and tools in modern marketing management theory and practice, making it difficult to determine the development position for an enterprise and choose the appropriate strategic tools for its implementation due to incessant changes.*

**Keywords:** *marketing; marketing activity; marketing strategy; development; strategic management; industrial enterprise; strategic tools*

**JEL Codes:** *A10, M10, M31*

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### **1. Introduction**

At the time of the establishment of marketing as a science, it was a tool aimed at the promotion of goods in the sales market. Marketing activities were more focused on the active sale of goods while, the consideration of consumer needs was not defined as a weighting factor. The fundamental theories of marketing were introduced by F. Kotler. "Marketing Essentials" was the first to systematize and generalize the knowledge of marketing, which previously belonged to separate sciences, and allocated it into a separate specialty (Berman, 1990). B. Bearman, J. Evans "Marketing" introduced the concept of marketing, taking into account and focusing on market needs in organization of production and sale of products. It also considers marketing as an entrepreneurial activity, managing the promotion of goods and services. The theories founded by these scientists are perceived by domestic scientists of those years as classical. This is evidenced by the content of the works of such scientists: A. V. Voichak (Voichak, 1998), V. G. Gerasimchuk, A. F. Pavlenko. It is the increase of competition in the market that prompts the expansion of marketing tools and begins the formation and development of strategic tools of marketing

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activity of enterprises. At present, there are a number of scientists who combine the specifics of the domestic market with marketing theory in the results of their research, among them are A. B. Voichak, V.G. Gerasimchuk, N.V. Kudenko, M.A. Oklander (Oklander, 2001), P. A. Orlov (Orlov, 2014). Marketing activity of an enterprise is influenced by various factors, such as changes of technological character, innovations, consumer preferences, etc. The key to successful activity of an industrial enterprise is the search for new approaches to the development of strategic tools of marketing activity.

## 2. Results and Discussion

The notion of tools is considered in the methodology of science as methods, techniques and means of analysis, organization, management and control used to achieve the objectives of the enterprise. The activities of an enterprise involve primarily the process of marketing management. The article deals with strategies according to the functions and tasks of marketing.

In order to form the subject area of the study it is necessary to define the basic concepts (Table 1) and to identify the relationship between them.

*Table 1. Defining the basic concepts of the study*

<b>Term</b>	<b>Definition</b>
Strategy	A general, non-detailed plan for an activity, covering a long period of time, a way of achieving a complex objective, which is uncertain and central to the manager at the moment, and which will be further adjusted to the changing conditions of the company's existence. The task of strategy is the effective use of available resources to achieve the main goal.
Marketing management process	It is a sequence of managerial actions aimed at implementing marketing functions and principles that should result in the identification and satisfaction of consumer needs and the expected profit of the firm.
Methodological support for the management of marketing activities in an enterprise	This is a wide range of methods, measures of a strategic and tactical nature aimed at improving and making the marketing activities of an enterprise more efficient. (devised by the author)
Strategic tools of marketing activities	Methods, techniques, organizational forms and tools, means of strategic management of marketing activities to realize the objectives of an enterprise. (devised by the author)

*Source:* Developed by the author based on sources Berman, 1990; Oklander, 2001



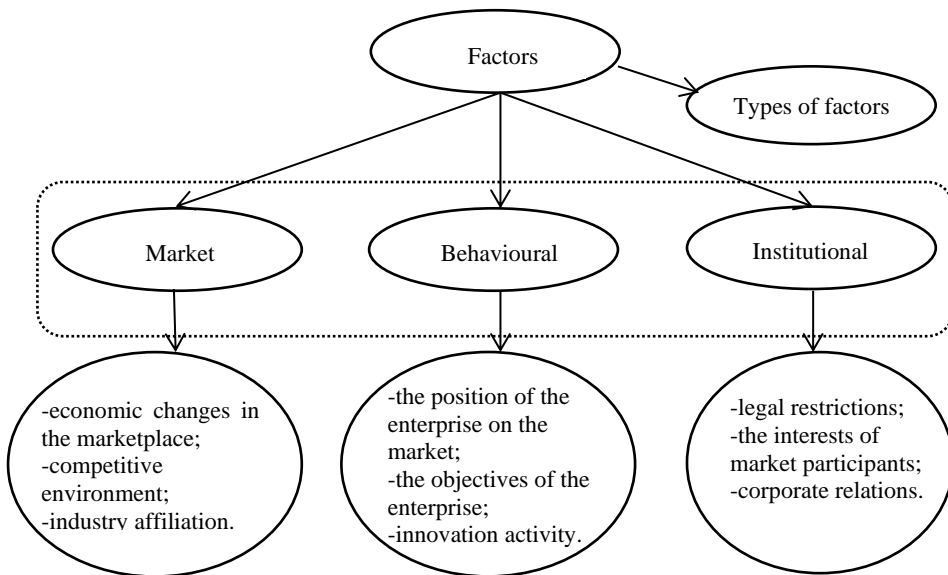
Table 1 clearly illustrates the inter dependency between all the concepts. Thus, the existence and functioning of an industrial enterprise is a process of development, which can be regressive or progressive depending on the circumstances. Therefore, development of strategic toolkit of marketing activity represents a clearly directed regular change of tools, means and methods of strategic management of marketing activity in order to realize the objectives of the enterprise. It is necessary to define strategic targets of the enterprise in order to establish a well-functioning system of management. Strategic toolkit of marketing activity represents an integral part of complex strategy of enterprise development and is formed based on external and internal factors.

External factors include factors which form economic and legal environment of the enterprise, competitive environment and sales market.

Internal factors include documented framework/rules of the enterprise, and factors and indicators, whose effectiveness contributes to increasing the competitiveness of the enterprise. It is not possible to build the enterprise's development strategy without formation of strategic tools of marketing activity of the enterprise in view of its branch affiliation.

The basis for the approaches to the development of strategic tools of marketing activity is the factors influencing the marketing activity of the enterprise.

Figure 1. Grouping of factors influencing the marketing activity of the enterprise



Source: Developed by the author

The enterprise's development has a strategic character, therefore, marketing strategies play an important role in theoretical approaches to development of strategic tools of marketing activity of the enterprise. Marketing strategy is a vector (direction) of enterprise actions to create its target market position (Kudenko, 2002). Market position is the activity in relation to competitors and consumers. Marketing strategy determines the direction of enterprise actions in relation to various stakeholders, among which the consumer or competitive market. It's represents a weighty functional component, the implementation of which strengthens the position of the enterprise in the existing competitive environment (Kotler, 2009).

The NV magazine and MPP Consulting have compiled a ranking of the most expensive brands in the country. The 'golden hundred' of Ukrainian brands increased in value by 4.7% in 2020. According to the website, "NV BUSINESS", the development of successful Ukrainian enterprises is facilitated by an innovative approach to marketing activities, for example:

- Morshynska company initiated a unique marketing project "Voice of Water", during which the play of musical instruments in Carpathian water bodies was recorded.

- Nova Posta innovated in services and customer market expansion. It became a leader in its segment and outperformed many competitors with the help of information technology.

- Rozetka implemented IT technologies to buy tickets through its online shop and has launched the Rozetka Travel online travel service.

The valuation methodology is based on the financial performance of brand owners, as well as factors that may influence brand value - geographical sales coverage, technological component, and investment attractiveness of the industry. With this in mind, it can be concluded that marketing strategies are essential to the success of an enterprise.

Marketing strategy of the enterprise has certain features:

- it is developed considering marketing researches;
- it defines market segment;
- it acts as the tool of realization of marketing purposes of the enterprise;
- it defines bases of competitive struggle;
- it is the form of development of strategic toolkit of marketing activity of the enterprise.

The process of shaping a company's marketing strategy is divided into several stages. The first stage in the formation of the marketing strategy of an enterprise is a comprehensive market research. The results of this analysis determine not only the state and density of the competitive landscape in the market, but also the basic behavioral patterns of potential buyers.

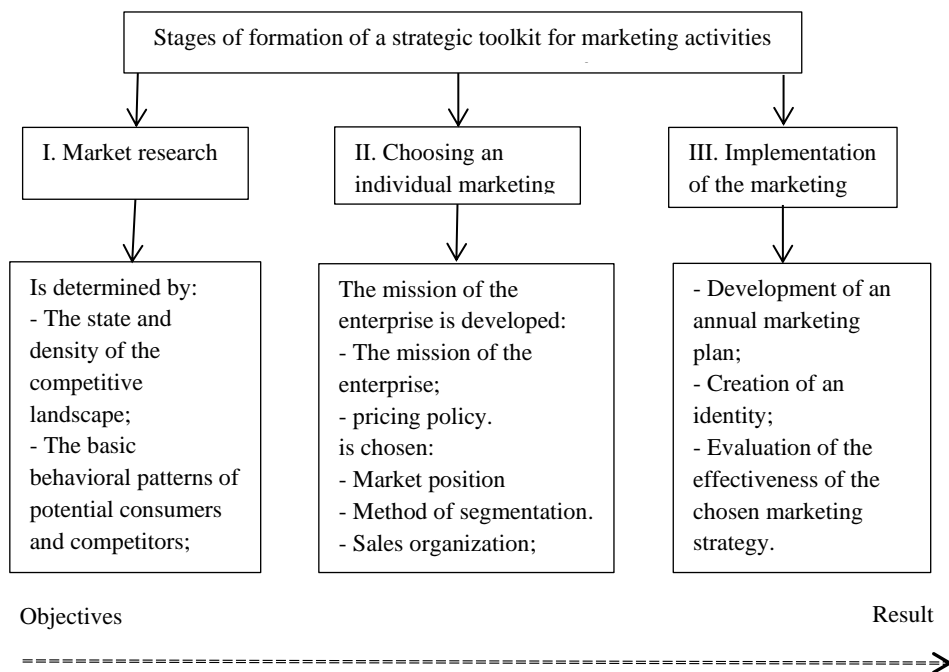
The development of an individual marketing strategy represents the second stage. During the second stage you elaborate company's mission, general vision and

market position, select market segment, choose priority market segments and position the company. Pricing policy, product modification, sales organization, human resources and customer service management are also developed.

At the third stage, marketing strategy is implemented. This process includes development of an annual marketing plan, creation of the image of the enterprise, assessment of efficiency of the chosen marketing strategy and the measures taken (Kotler, 2009).

Density of business environment and constantly increasing level of competition create conditions when it is not enough to use one strategy for stable functioning. For development of the enterprise, its strategic toolkit should contain the whole system of strategies for maintenance of its development in the chosen segment of the market. The formation of the strategic toolkit of marketing activities is shown in Figure 2.

Figure 2. Stages of formation of strategic toolkit of marketing activity of the enterprise



Source: Developed by the author

Strategic toolkit is based on the necessity of each enterprise to develop in the chosen market, to enter new markets, to maintain the market share it holds and, if necessary, to withdraw from an economically unprofitable market. Qualitatively developed marketing strategy is always aimed at increasing competitiveness of the enterprise, at the same time negative consequences of incomplete use of marketing

tools may result in loss of the captured market share and even bankruptcy of the enterprise. Legal regulation is an important aspect for the development of strategic tools for marketing activities. It regulates the interests of stakeholders (competitors, consumers, enterprise, government), regulates the international activities of the enterprise and is the basis of the institutional approach, which has a significant influence on management decision-making.

Functions, as components of the marketing system, act as means to implement the marketing strategy of the enterprise. It is expedient to distinguish four blocks of complex functions each of which contains sub-functions in its structure (Table 2).

The system of strategic marketing tools of the enterprise functions depending on the basic corporate strategy adopted by the enterprise and always corresponds to the set marketing goals. In addition, according to the economic environment and the objectives of the enterprise, the top management of the company may choose additional marketing strategies, such as:

- a) market promotion;
- b) distribution;
- c) product-to-commodity;
- d) price strategy.

*Table 2. Types of strategic tools according to marketing functions*

<b>The functions of marketing</b>			
<i>Informational and analytical</i>	<i>Production</i>	<i>Distribution</i>	<i>Administration</i>
- Market analysis and segmentation; - Customer analysis; - Analysis of the company's internal and external environment.	- Organization of goods production; - Management of competitiveness and product quality.	- Organization of the goods distribution system; - Establishment of a sales policy.	- Organization, implementation and monitoring of the marketing activities.
<b>Types of marketing tools according to marketing functions</b>			
- marketing surveys; - questionnaire; - consumption experience; - digital transformation (opportunities and impact); - predictive analytics.	- product policy; - CRM competitive differentiation.	- sales incentives (coupons, test samples); - internal marketing; - public relations (radio, television broadcasting); - advertising; - internet marketing; - PR.	- repositioning - socially responsible marketing; - marketing management.
Marketing - mix 7P ( Product, Price, Promotion, Place, People, Process, Physical Evidence )			

Source: Developed by the author

Thus, in the promotion strategy it is important not only to ensure a constant volume of sales, but to plan measures that can be implemented in the company, and the implementation of which will increase demand for its products. In other words, this strategy aims to create the most advantageous position for an individual product in each individual market. The tools available to achieve this goal can vary from public relations to special services to flexible pricing.

With the implementation of a distribution strategy, the efforts of the company's marketing activities are concentrated on the creation of a sales system for the product.

A product/commodity strategy focuses on factors that increase the competitive advantage of the product on the market. Such model of behavior forms consumers' opinion about consumer value of goods and services of a particular enterprise. Putting this strategy into practice requires paying particular attention to the effect or influence that this model will have on the level of sales of existing products (which the firm already produces) when introducing new product and merchandise strategies. In addition, important quality factors for these strategies are: export capabilities of products, clear definition of product/service life cycle, level of product competitiveness in the existing competitive environment, efficiency of use of resources and production potential of the enterprise, quality of market research carried out, appropriately chosen target audience, etc.

### **3. Conclusions and Recommendations**

The choice and intensity of marketing strategies depend on many factors, both external and internal. In particular, the presence of competitors in the chosen market segment plays an important role. Irrespective of the chosen marketing strategy, using a systematic approach to the formation and implementation of behaviours will ensure faster achievement of objectives.

Namely the innovative approach, introduction of the newest technologies and developments is the pledge of sustainable development and grant of success of the enterprise and serves the formation of new types of strategic tools of marketing activity.

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## RE-ORIENTATION FOR THE RURAL TOURISM DESTINATIONS IN BULGARIA AND GREECE AS A RESULT OF THE COVID – 19

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### **Abstract**

*The paper aims to analyze the re-orientation for the rural tourism destinations in the transborder area between South-West Bulgaria and Northern Greece during the period of COVID-19 pandemic time. The research identifies the effects of COVID-19 in the demand of this sustainable type of tourism including some specific regional sub-types of the rural tourism. The novelty and the contribution brought by this research to the field of tourism studies is based on the research methodology and specifically on the application of criteria regarding the destinations of rural tourism. These criteria have been modified and supplemented so as to include as many dimensions as possible in the examined areas. The used methodology is based on the analysis of in-depth – interviews with managers of tourist enterprises including smaller guest houses, travel agencies and tourist attractions in the region. The conclusions obtained due to the primary data of the research show common trends for the tourism during the times of uncertainties, and especially indicate an increasing re-orientation of tourists when choosing destinations for rural tourism in both regions of South-West Bulgaria and Northern Greece.*

**Keywords:** rural tourism; COVID-19; transborder rural tourism; area Bulgaria-Greece; sustainability

**JEL Codes:** Q01, Z32, Z30, R11

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### **1. Introduction**

The COVID-19 pandemic has dealt with severe misfortune to global tourism and leisure sectors, including the hospitality subsector. With the isolation of the population since the beginning of the pandemic and the alteration of international environment, the tourist flows have evaporated, starting a procedure (perhaps temporary) of de-globalization (Niewiadomsky, 2020). In this regard, COVID-19 changed the academic community's perspective on tourism issues. Many studies on the subject do not challenge the current process of globalization (Duro et al., 2021). Rural areas have been a new social and tourist outlet. The advantages of rural tourism focus on environmental benefits (Roman & Grudzień, 2021). In general, rural tourism

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encompasses a range of different activities including inter alia farm/agritourism, ecotourism, cultural tourism, heritage tourism, wine tourism, adventure tourism (Fagioli et al., 2014; Viljoen & Henama, 2017). Taking this into account, we can define common trends for the tourism during the times of uncertainties which lead to tourism business recovery and especially indicate an increasing re-orientation of tourists when choosing destinations for rural tourism in both regions of South-West Bulgaria and Northern Greece. In addition, we analyze the meaning of the term cross-border rural tourism, which is part of the fields of alternative tourism (Smith & Eadington, 1996; Dołzbłasz, 2017) and presents significant dynamics, because it successfully combines natural and cultural resources, with emphasis on cultural heritage, physical activity, and leisure. In this way, a dual goal is achieved: on the one hand, tourists are satisfied and on the other hand, the economic development of the regions is favored (Dimitrov et al., 2017; Sofield, 2006; Stoykova, 2008; Saxena, 2016). The paper is organized as follows: Section 2 describes the Problem Statement, Section 3 puts the research questions and the aims of the research, in Section 4 the research methods are presented. The main results obtained are described and further analysis of the results and policy implications are offered in Section 5. Finally, Section 6 summarizes the main results and provides concluding remarks.

## **2. Problem Statement**

Open borders and life in big cities are spreading the virus rapidly (Hilsenrath, 2020), and tourism is playing a positive role in transmitting diseases and creating public health problems. Thus, it is important to identify these risks and the social problems caused during the pandemic, to record, codify and address the spatial adverse effects. An advantage of rural tourism is access to people from lower social classes and vacations away from large urban centers (Roman & Grudzień, 2021), but with the use of all modern amenities (Hristov & Taneva, 2013). We argue that rural areas and ecosystems must be supported in order to lead to a path of sustainable socio-economic development while taking advantage of all their local comparative advantages. There is research gap in the study of the development of all types of rural tourism on transborder area during the times of crisis and the COVID-19 pandemic. There are limited studies on the concept of transborder rural tourism and its impact on the surrounding areas and connection with local tourism business recovery. In addition, these areas need to be transformed into a specific domain for tourism knowledge and practice, which will be attractive for the global rural tourism market. In this light, agritourism provides opportunities for new tourist experiences of old and "new" tourists. There will always be a demand for special activities in the countryside in relation to those of mass urban tourism destinations (Page, 2020), including the creation of sustainable partnerships (Kiryakova-Dineva & Chankova, 2022), which depends to a great extent on the effective performance of business communication between professionals (Kyurova & Kiryakova-Dineva, 2019).



### 3. Research Questions/Aims of the Research

The overall purpose of the study is to find tools to support sustainable rural tourism in both regions of South-West Bulgaria and Northern Greece. The main research question is to find the potential of the cross-border area for the development of rural tourism during the COVID-19 pandemic. Moreover, research questions are:

- a) to define if there are public health determinants of rural tourism development on cross-border areas;
- b) to define if there are economic or social reasons for the tourists, to change their traditional tourist destinations and finally to choose a cross-border rural tourism destination.

### 4. Research Methods

The sustainable nature of the areas under study requires the study of certain parameters and the existence of conditions. The paper examines these conditions, which will develop agro-tourism cross-border cooperation in southwestern Bulgaria and northern Greece. The selected areas are the regional unit of Serres in Greece and the province of Blagoevgrad in Bulgaria. The areas present similar geographical locations along the Strouma river (Strymonas) and common trajectories of economic development.

This research is a continuation of previous research (Krasteva & Kiryakova-Dineva, 2018), which analyzed in detail the destinations of agritourism. The criteria of analysis were first set by Ribov (1997) and then modified and supplemented so as to include as many dimensions as possible in the examined areas.

We use a two-step analysis. On the **first step**, we give emphasis on criterion number 4 which refers to a sustainable image of the region as a destination for rural tourism. We conducted in-depth – interviews in the region focusing on this concrete parameter of previous research collecting primary data. Based on the results of the research by tourism experts and representatives of the tourism industry (managers of tourist hotels in rural areas, policy makers, tour operators and owners of alternative tourism businesses), separate evaluations were carried out in each area that develops agriculture and the prospects for possible cross-border cooperation were captured. The experts (10 from each of the two regions), evaluated the tourism competitiveness of each region. The research was conducted based on Ribov's 4<sup>th</sup> criterion (1997).

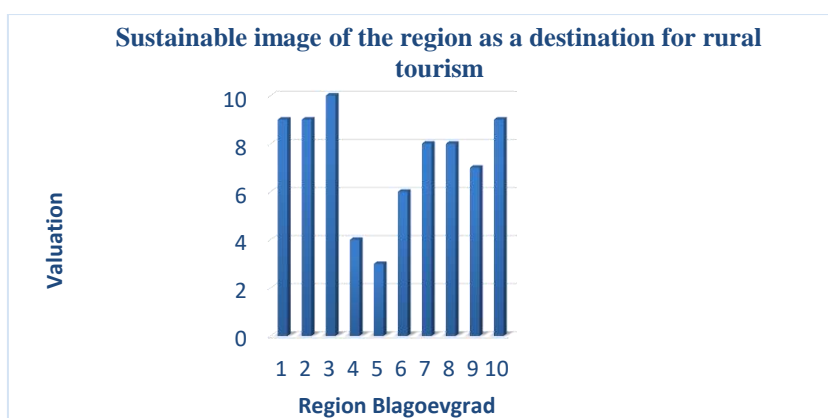
On the **second step** a comparative content analysis is performed for the period 2018-2022. Through the process of comparing the answers, significant findings emerge that show changes in the identity and the promotion of the rural tourist destinations. Specifically, the comparison includes the answers of those who participated in the interviews in 2018 on criterion number 4 which refers to sustainable image of the region as a destination for rural tourism and the answers to the same question this year, in 2022. Moreover, a broader content analysis of the interviews is

carried out in order to ascertain the reasons for the positive increase of the rural tourism destinations.

## 5. Findings

The findings of the interviews are divided into two categories. The **first category** refers to on criterion number 4 (sustainable image of the region as a destination for rural tourism). The next four figures present these answers, firstly in 2018 and secondly in 2022.

Figure 1. Valuation of the Region of Blagoevgrad as a destination for rural tourism (2018)



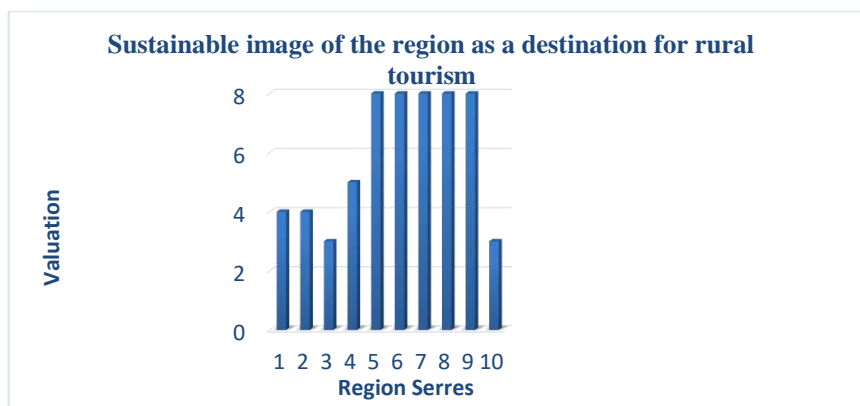
Source: Author's calculations and synthesis based on interviews

**Figure 1** (Region of Blagoevgrad - 2018), presents the valuation of participants on this research project. The results show a wide spectrum of valuations. Two answers are below the base (3 and 4), two answers are slightly positive (6 and 7) and the rest 6 answers are close to the highest scores.

**Figure 2** (Region of Serres - 2018), presents the valuation of participants regarding the sustainable image of the region as a destination for rural tourism. The results show a wide spectrum of valuations. Five answers are below the base or on base (3, 3, 4, 4 and 5) and five answers are quite positive (8). The picture of the interviews in this case is slightly worse.

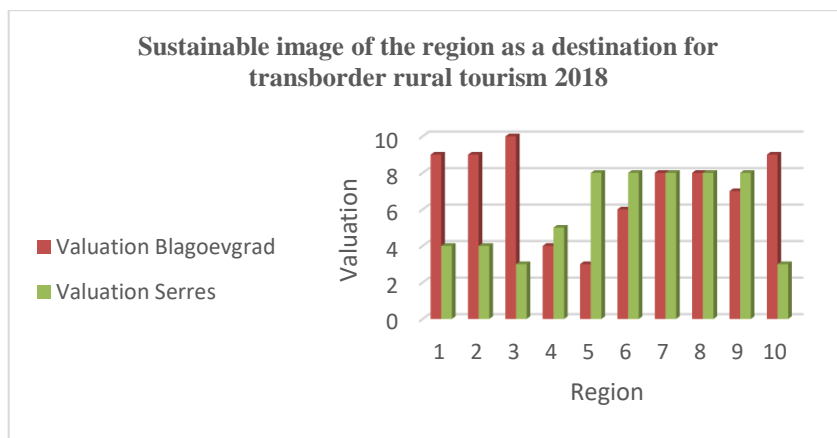
**Figure 3** (Region of Blagoevgrad - 2018), presents the comparative valuation of participants regarding the sustainable image of the regions as a destination for rural tourism. Figure 3 is a synthesis of the two previous figures and give us information comparatively.

Figure 2. Valuation of the Region of Serres as a destination for rural tourism (2018)



Source: Author's calculations and synthesis based on interviews

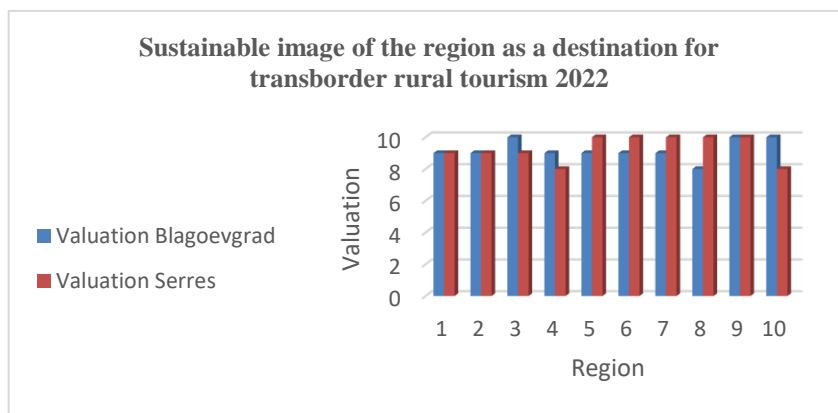
Figure 3. Comparative Valuation of the Regions of Serres and Blagoevgrad as destinations for rural tourism (2018)



Source: Author's calculations and synthesis based on interviews

**Figure 4** (Regions of Serres and Blagoevgrad - 2022), presents the comparative valuation of participants regarding the sustainable image of the regions as a destination for rural tourism. For the case of Blagoevgrad, the results show a small spectrum of valuations, on the top of scores. All answers are found among 8 (1 time), 9 (6 times) and 10 (3 times). For the case of Serres, the results show a small spectrum of valuations, on the top of scores. All answers are found among 8 (2 times), 9 (3 times) and 10 (5 times). In this case the change of valuations of participants, is huge.

Figure 4. Comparative Valuation of the Regions of Serres and Blagoevgrad as destinations for rural tourism (2022)



Source: Author's calculations and synthesis based on interviews

Attempting an **overall assessment of the results of the interviews**, in relation to the extent to which the specific regions are known as rural tourist destinations, there are significant changes that show the impact of the pandemic on the improvement of the image. The answers show that the regions under study have become better known internationally as rural tourism destinations. The overall difference in the answers between 2018 and 2022 shows that many things have changed in the tourist preferences in recent years as people choose the place of their vacation by different criteria. This change in relation to rural tourism is a key pillar on local tourism business recovery.

The **second category** refers to the general question regarding the reasons for the positive increase of the rural tourism destinations and the subsequent local tourism business recovery. Findings from the interviewees' responses show four distinct groups of responses. Thus, there was a clear increase in rural tourism preferences in the surveyed regions due to:

- a) People are afraid to travel far because of measures against COVID-19 pandemic (**17 answers**).
- b) People choose to go somewhere where there is a smaller concentration of tourists because they are afraid of overcrowding and of COVID-19 (**15 answers**).
- c) People because they were locked in their homes due to the successive lockdowns, people wanted contact with nature and free open areas (**13 answers**).
- d) For financial and income reasons, people have discovered nearby destinations that can greatly replace the tourist experience of long-distance travel (**12 answers**).

These are the final research findings that increase international tourism competitiveness in the under study border areas. Additional actions that will promote rural tourism can be joint cross-border tourism actions, institutional transnational cooperation at all levels (promotion, advertising, seasonality, employment, tourist product).

## **6. Conclusions**

The paper addressed the problem of improving the competitiveness and promoting cross-border rural tourism in the study areas and creating a sustainable and attractive identity of the areas as an important rural tourism destination. The image of these areas has been improved significantly from the previous research in 2018. The impact of the pandemic has been catalytic in the rise of rural tourism for several reasons mentioned in detail above, putting these areas on a trajectory of local tourism business recovery. The importance of research is based on highlighting the critical elements that make cross-border areas quality and accessible tourist destinations. The research presents some limitations related to the size of the sample and the fact that it does not include the possible impact of the deteriorating economic situation in Greece and Bulgaria. Extension of the research can be done by studying the other regions with which Greece borders and be presented comparatively creating a more complete picture. This research is also of practical importance. It can be considered by local government bodies and by municipalities and regions located on the land border in relation to the appropriate tourist planning and the creation of necessary infrastructure that will contribute to the rise of the level of economic development. The results obtained following the primary data of the research show common trends for the tourism during the times of uncertainties, and especially indicate an increasing re-orientation of tourists when choosing destinations for transborder rural tourism in both regions of South-West Bulgaria and Northern Greece.

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## INTERNET FINANCIAL RISK MANAGEMENT

**Maria Koutsari<sup>1</sup>**

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### **Abstract**

*Better financing, financial management, and information intermediary services are the main objectives of Internet finance. Several aspects of the internet, including payments, cloud computing, social networking, and search engines, are the foundation of this new financial paradigm. It is a newly created financial service with qualities taken from conventional financial services, such as more operational convenience, greater involvement, better collaboration, and increased transparency. Internet finance links the financial industry to the fundamental principles of the Internet, such as decentralization, openness, equality, competitiveness, and competition. The primary distinction between Internet finance and traditional finance lies not only in the many channels each financial organization has employed in its development, but also in the participants' thorough knowledge of the underlying principles of internet cooperation and expansion.*

**Keywords:** *Internet finance; financial services; financial management; traditional finance*

**JEL Codes:** *G30, G32, G38*

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### **1. Introduction**

The Internet has progressively become a part of people's daily lives thanks to the widespread use of computers and mobile smart phones in the twenty-first century. The business model of traditional finance has evolved due to the Internet prevalence. Internet finance, a growing financial model was created.

People can generate significantly more wealth while spending less money thanks to the Internet as a universal financial paradigm. As a result, many people are persuaded to take part in the growing business model that is supporting the explosive growth of this new financial paradigm. However, individuals should not ignore the dangers that are associated with this rapidly expanding industry.

### **2. Internet Finance**

The goal of Internet finance is to provide better financing, financial management, and information intermediary services. Internet finance is an emerging

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financial model that is built on several Internet capabilities, including payments, cloud computing, social networking, and search engines (Key, 2015).

By leveraging Internet technology, Internet finance connects the financial sector with the core values of the Internet, including openness, equality, competition, free choice, and decentralization. As a result, it has altered conventional financial models in ways that have simplified service procedures, reduced transaction costs, and eliminated restrictions. It has improved small, medium, and microbusinesses' and regular investors' access to expert financial information.

The key difference between Internet finance and traditional finance is not only the various media used in the development of each financial company, but also the participants' comprehensive understanding of the fundamentals of Internet cooperation and growth. In the context of Internet finance, information from traditional financial businesses is made more transparent, players engage in more services, financial entities and financial intermediaries can cooperate with greater flexibility, intermediate costs are reduced, and the use of financial instruments is made easier (Guiyang, 2015). Despite being a relatively new business, the benefits of Internet finance have attracted many investors, which has fueled its rapid growth and ongoing improvement. The market's current offerings for Internet financial models mostly consist of online Payment by a Third Party.

Online payments by third parties mainly innovate the payment process. The third party online payment adds a third party to the standard buyer and seller transaction procedure. In the course of the transaction, the buyer pays the third party first and then instructs the seller to deliver the products. The buyer confirms receipt of the items when the vendor releases them.

„The purpose and benefits from this type of payment is lower transaction cost. Internet for example, can substitute the manual work and physical outlets in traditional financial institutions also mobile banking system do not need to support branches or hire staff and counter services (CGAP, 2010)“ (World bank-policy research paper, 2021).

### **3. Investment and financing by nonbanks.**

An innovation in investing and finance techniques is non-banking financing and investment. P2P and crowd-funding are two of its primary subtypes. Peer to Peer, which typically refers to personal to personal funding, is the full name of the P2P concept. Commercial banks no longer act as intermediaries in the P2P paradigm; rather, they act as a conduit for capital transfer. It indicates that financial transactions are made directly between individuals on an online financial platform. This particular model has successfully reduced the cost of financing.

On the P2P online loan market, however, hidden cyber security threats and possibly huge credit risks are mounting. It is due to the lack of a unified monitoring system and ideal credit information examination. Also, the lack of clear norms in



business operations, the lack of unsecured and guaranteed loan channels, and the lack of openness in capital movement information are to blame.

Crowd-funding is a term used to describe a financial model in which individuals, small businesses, or microenterprises with expertise in research and development present their cutting-edge or emerging projects to the capital market in an effort to raise idle funds from the general public. It mostly uses the Internet as a platform to allocate funds. A dual monitoring mode of online application and offline supervision is a feature of the crowd-funding concept. In more detail, the platform operator investigates the borrower's credit and reviews their project once the borrower submits an online application. The data is then sent back to the platform so that it can match the investor with funds that are offered in the form of loans. The fact that the money earned by the model of crowd-funding is given to the agent for management makes it vulnerable to moral hazards and information asymmetry problems.

The majority of third-party consultation platforms and online financial markets are currently included in internet financial portals, which are the Internet's innovation in portals. As seen by the online banking and mobile banking services introduced by several traditional commercial banks, the traditional financial sector has also provided various businesses through the Internet in addition to all these new typical models of Internet finance.

#### *Internet Finance Risk Factors*

While investors have benefited greatly from all types of derivatives financial institutions derived from Internet finance, it is important to consider the potential risks associated with this sector of the economy. The financial and internet sectors both have a reputation for being extremely dangerous, therefore their combination has given Internet finance a reputation of carrying several hazards.

The danger of Internet finance, which differs from traditional finance in that there are a large number of market participants, information that is more obscured, short and transit transaction flow, fast and frequent transaction, and other factors, have all greatly increased in complexity.

#### *Risk factors in Internet finance*

The major two factors of credit risk in Internet finance are the financial institution and the customer. The conventional financial institution might boost its reputation by providing effective monitoring after receiving certification from reputable organizations. Due to the virtual nature of the Internet, it is a known truth that it is possible for all types of information to be fraudulent and impossible to verify. This can be considered as a significant credit risk for users of online financial institutions.

Furthermore, in order to gain the trust of the financial institution, many consumers frequently fabricate some information when they submit applications for financial services. It is critically necessary for those financial institutions to discover

a mechanism to determine the genuine credibility of customers since they now have no ability to determine whether the information is authentic or not and whether the customer enjoys a high level of credibility or not.

The lack of effective regulatory oversight and the existing state of many regulatory gaps are the main causes of the regulatory risk associated with Internet finance. In many Internet financial institutions, there is currently a widespread problem where the main oversight body is not clearly established, leading to an unclear business segmentation that is not subject to applicable rules and regulations. Additionally, neither the right definitions of the business model and the business attribute of those online financial institutions in laws and regulations that have already been introduced nor any explicit regulation concerning market access and other regulations for online financial institutions exist.

Financial products and services have undergone ongoing modification as a result of the advancement of Internet technology and financial engineering. Internet-based financial organizations have used a huge number of data models and econometric models in their management and operations, which has worsened market liquidity and caused a funding shortfall.

The traditional industries have amassed a comparatively rich experience in avoiding market risks after many years of rapid development and ongoing improvement. As a result, they create a system and industry standard that is largely complete because of the Internet's secretiveness and high level of unpredictability. Because of this, Internet finance companies frequently establish a very high rate of return on capital in order to draw sufficient capital into their businesses. However, they lack the ability to avoid market hazards, which will quickly result in the default risk.

The foundation of internet finance is technology, including computer, network, information, and other technologies. The use of diverse technologies in the creation and delivery of all types of financial services occupies a key role. However, some technological issues could also occur, which would have an impact on how Internet banking functions as different science and technology are applied. The security risks of the system mostly reflect the technical risk of Internet financing. Whether or not computer network technology is used in finance over the Internet is directly tied to the technological risk involved. The TCP/IP protocol's security and the limitations of current encryption technology are the key system security issues.

It is true that relying on computer systems can enable the Internet finance industry to operate successfully. This means that if the encryption technology used when using the computer system is imperfect, the financial data held there will either be destroyed or stolen, and the system terminal may be attacked once a hacker or virus assaults the computer system, which will seriously harm Internet finance. The TCP/IP protocol family, which offers the biggest benefit of a smooth information transfer, is the transmission protocol currently in use. The major problem with it, though, is that

it has a low level of protection, making information and money vulnerable to theft when they are being transferred.

#### *Financial Risk Management on the Internet*

The best way to ensure the healthy development is to have comprehensive laws and regulations. Based on the genuine reality of Internet finance, countries need to reform associated laws and regulations, and they should increase the oversight of Internet finance with the support of the law.

Prior to establishing a legal system that includes institutional forms, legal status, business types and scope, qualification requirements, and legal responsibilities, a country must first determine the nature and legal status of Internet finance in its legal forms. In addition, it should add regulatory tools tailored to the Internet finance sector to existing traditional financial-related laws (such as commercial bank law, securities law, bank management supervision legislation, etc.) to complement and improve them.

Last but not least, it should build a fair trading platform for Internet finance as soon as possible, give comprehensive, uniform, and fair trading standards, describe the obligations of the transaction subjects, protect consumer privacy, and ensure that players in Internet finance can have laws and rules to follow.

Real authentication and credit verification are now the only ways for both financial institutions and clients to guarantee a secure transaction. Therefore, nations should create an online credit bank for Internet finance companies and all participants, as well as a credit management system to track the fundamental data and credit history of financial companies, the identities of financial participants and their credit histories for previous transactions. To ensure that all businesses and participants may access the most recent and accurate credit information in the credit bank in accordance with the requirements specified by law, they should grade all businesses and participants and update these ratings in a timely and efficient manner.

The national public security departments should increase their efforts and investments in identifying and combating crimes involving Internet finance, as well as hire individuals with scientific and technological know-how and Internet financial crime detection technology, to enable them to quickly identify potentially fraudulent businesses and take appropriate action.

#### *Industry Self-Regulation for Internet Finance*

The Internet is a developing sector that has changed so quickly that no set pattern has yet established. It is frequently insufficient to rely solely on the government's authority for legal supervision because the government agencies have trailed behind in information gathering, the creation of legal frameworks, and the implementation of monitoring. The sector also requires self-discipline management.

Although this type of regulation cannot fundamentally replace the government's official regulatory agency, it does have the advantage of having a more

thorough awareness of the pertinent information and dynamics because the industry organization itself is in the Internet finance. „Countries can therefore promote the formation of more Internet industry associations“ (European Commission. Consumer protection policy, 2022).

„Monitoring and enforcing self-regulations are important parts of the regulatory process. The primary mechanism uses Self-regulation and self-policing as to ensure proper compliance and provide protection and remediation“ (Castro, 2011, p. 4). The regulatory regimes include the development of Industry Self-regulation for Internet Finance.

Examples of self-regulation include:

- 1) private businesses;
- 2) professional bodies' codes of conduct, industry service charters;
- 3) accreditation and complaint handling schemes;
- 4) private institutions regulating themselves;
- 5) introduction by industry participants of an industry-wide regulatory code.

Significant role of the government in encouraging industry self-regulation also has an impact on compliance costs and the flexibility in the coverage of this process (Industry Self-Regulation in Consumer Markets, 2000, p. 5).

#### *Collaboration and oversight amongst online finance companies*

The government and industry groups may not be able to perform a meticulous oversight for such a sizable industry because they frequently concentrate on the administration and supervision of the entire industry. Governments and trade groups can so promote and support coordination and oversight among various Internet financial enterprises. Companies in an industry will be able to support the quick and healthy development of the sector if they can work together in a win-win and benign competitive style. The industry's businesses as well as consumers will profit from this. That is to say, Internet finance organizations can send personnel to other businesses so that they can interact with one another, learn from one another, and gain insight into how other businesses manage.

Additionally, mutual supervision is possible. If a business or employee learns that another organization is using dishonest tactics like fraud, they can inform the appropriate government oversight body or trade group and direct the investigator. If it is accurate, the regulatory body must penalize the reported enterprise in accordance with the law and honor the pertinent reporting business or person.

#### *Cybersecurity and the Internet Finance Security System*

There are significant security flaws in both the Internet and Internet finance. The possibility that viruses and hackers may infiltrate a network and steal user-stored information, usurp their wealth, and cause them to suffer significant losses serves as proof. For Internet finance to develop healthily and sustainably, network technology security is crucial. However, financial organizations frequently lack knowledge in

network technology research and development (Baur-Yazbeck, Frickenstein & Medine, 2019).

In order to create a reliable and safe database, the government should encourage collaboration between financial firms and scientific and technology industries. Their efforts can pay off by boosting capital investment, as evidenced by the increased ability of hardware devices to thwart hackers and viruses. Additionally, since it is possible that a virus or hacker from outside may attack the network, businesses can cooperate with foreign Internet finance organizations to understand how such companies developed their network security systems. They can then implement similar strategies for their own businesses. In order to prevent the leakage of user privacy information, it is required to strengthen the protection of personal data kept by users and to actively develop key management and Internet encryption technologies (Bowcut, 2021).

#### *Consumer defense*

More and more consumers are getting involved in it thanks to the excellent ease it offers. However, not every participant has acquired professional finance expertise. In other words, they are unable to identify and efficiently manage dangers associated with online money. Therefore, the governments need to increase the protection of consumers involved in Internet financing.

In order for participants to conduct business acceptance in accordance with a unified process and to facilitate the management of regulatory agencies, the government must first enact pertinent laws and regulations concerning consumer protection. These laws and regulations should also make clear provisions on information disclosure and the responsibilities of institutions during the transaction process. Second, a specialized platform for consumer inquiries can be created to give customers and supervisors avenues for consultation, information sharing, and knowledge acquisition in order for customers to fully grasp their own demands and make the best financial product choice, it is important to comprehend the characteristics of Internet finance operations and product characteristics. Additionally, by collaborating with workers in the financial business, government agencies can put up both online and offline knowledge instructional activities about Internet finance security. These initiatives enhance public awareness of Internet finance dangers and risk mitigation strategies among regular people.

#### *Training initiatives for internet financial management personnel and staff*

The daily operation of Internet finance is regulated by the managerial staff. The managerial skills and attributes of these individuals contribute significantly to how Internet finance typically runs. Governmental organizations must therefore improve professional skill development for Internet financial management. „First and foremost, the nation has to improve the training of practical operational skills and professional financial understanding for financial management staff. Outstanding

employees may be sent abroad for study and exchanges so they can get knowledge about superior and advanced management practices both at home and abroad and develop their own professional management skills“ (Van der Meulen, 2021).

Additionally, it is essential to increase the professional quality of staff members and strengthen their quality education in order to guarantee that they would uphold the law impartially and refrain from misconduct. The success of an organization, and even the growth of the Internet finance sector as a whole, depends on its people. The top Internet finance organizations require the same qualified financial and marketing skills as established financial institutions. Additionally, Internet finance companies require professionals with expertise in risk management and computer science.

It may be more convenient for the business to create and operate its own network security solutions if it has expertise in this area. The Internet financial companies can also send their staff members to organizations with cutting-edge technology both domestically and overseas to train them in pertinent professional skills, assuring a more diverse talent pool.

#### **4. Conclusion**

In conclusion, as a response to the current risk factors, the government should strengthen the supervision and collaboration of Internet finance as well as international cooperation. It should also update the laws and regulations relating to Internet finance. The online finance sector should be encouraged to practice self-discipline management in addition to legal oversight. Enterprises should work together and monitor one another while also establishing an Internet finance credit management system, increasing consumer protection for Internet finance, and developing an Internet finance security system to increase network technology security. In the meanwhile, individuals should be informed about money security on the Internet. Additionally, the assessment and evaluation process must be improved, and managers and employees in the Internet financial sector need more training.

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