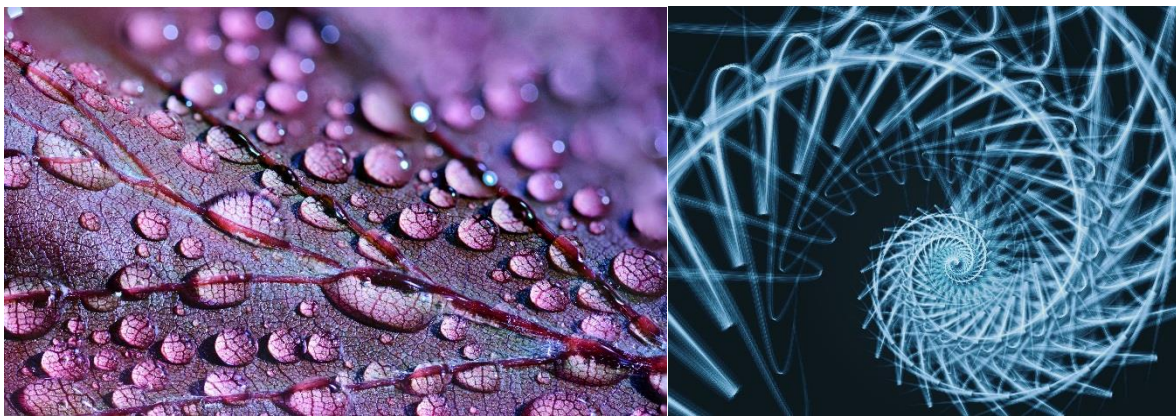


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THE GLOBALIZING WORLD AND THE REALITY OF GLOBAL RISKS AND CATASTROPHES

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ABSTRACT

This article is devoted to the possible emergence of global risks in the form of catastrophes that change the development of the Earth's space. Thus, the author motivates the necessity of measuring in advance the risks faced by nature and humanity in order to overcome these real threats and their consequences. The author analyzes the concept of "global catastrophe" and measures it as a concept and analyzes the scientific thought on this issue. It assesses the significance of the risk on the entire global space of a global catastrophe of a local or international nature. Also important is the author's approach to the issues under study and his views on the resolution of a number of conflicts and problems of global development.

KEYWORDS: global, catastrophe, risks, regional, local and problems

ABSTRACT

Dieser Artikel befasst sich mit dem möglichen Auftreten globaler Risiken in Form von Katastrophen, die die Entwicklung des Erdraums verändern. Der Autor begründet damit die Notwendigkeit, die Gefahren für die Natur und die Menschheit im Voraus zu messen, um diese realen Bedrohungen und ihre Folgen zu bewältigen. Der Autor analysiert den Begriff der "globalen Katastrophe", misst ihn als Konzept und analysiert das wissenschaftliche Denken zu diesem Thema. Er bewertet die Bedeutung des Risikos einer globalen Katastrophe lokaler oder internationaler Natur für den gesamten globalen Raum. Kritisch ist auch die Herangehensweise des Autors an die untersuchten Themen und seine Ansichten zur Lösung einer Reihe von Konflikten und Problemen der globalen Entwicklung.

STICHWORTE: global, Katastrophe, Risiken, regional, lokal, Probleme

RÉSUMÉ

Cet article est consacré à l'émergence possible de risques globaux sous la forme de catastrophes qui modifient le développement de l'espace terrestre. Ainsi, l'auteur motive la nécessité de mesurer à l'avance les dangers auxquels la nature et l'humanité sont confrontées afin de surmonter ces menaces réelles et leurs conséquences. L'auteur analyse le concept de "catastrophe mondiale", le mesure en tant que concept et analyse la pensée scientifique sur cette question. Il évalue l'importance du risque d'une catastrophe mondiale de nature locale ou internationale sur l'ensemble de l'espace mondial. L'approche de l'auteur sur les questions étudiées et son point de vue sur la résolution d'un certain nombre de conflits et de problèmes de développement mondial sont également essentiels.

MOTS-CLÉS: mondial, catastrophe, risques, régional, local, problèmes

INTRODUCTION

Our planet Earth has always been subject to natural and socio-economic changes. Today, in the global world of technology, the principles of a sustainable natural environment are linked to overcoming the geo-global natural-geographical problems caused by the interrelations of man and nature, his responsibilities towards himself, the natural environment and natural resources. Since the second half of

the twentieth century, human society has found itself face to face with numerous serious problems, among which is the predatory exploitation of the resources of the natural environment by human society itself. Humans for the first time saw their planet from space and how small and fragile it was and the prevailing picture of natural formations - oceans, seas, continents, soils, vegetation. Astrophysicists who study the evolution of stars, taking into account the irreversible nuclear changes taking place in the interior of stars, believe that with diminishing supplies of hydrogen in its interior, the Sun will become progressively hotter in the future [Kopal, 1990]. This trend will make the Earth's surface so hot that water in the oceans will evaporate and the atmosphere will dissipate into interplanetary space. The charred surface of the planet will be exposed to scorching heat and no life form could survive it. This would mean that the climatic extremes on Earth would reach or even surpass those prevailing today on the planet Mercury, where no one would even think of looking for any sign of life. Neither we nor the other planets could do anything to save us from the Sun's farewell fiery embrace. The only consolation in this pessimistic outlook is the fact that this sad end is still very far in the future. It is likely to be another five to seven billion years before the sun's light turns from a benevolent friend to a ruthless foe. Events may perhaps speed up if the planets get closer to the sun as time goes on, or slow down if the planets move slowly away at the behest of the inexorable laws of celestial mechanics. In practice the sun has constant explosions and plasma discharges into space. The probability of an explosion leading to a global catastrophe on earth is estimated at about 12%. The last strong release of plasma occurred in 1989, and one of the most powerful magnetic storms was recorded on Earth. Massive disruptions to power grids around the world were the aftermath of this magnetic storm. The year 2020 marked the beginning of our star's 25th solar cycle. We are currently at the low point of the changes. There is a lull like this every 11 years.

RESULTS AND DISCUSSION

The potential for new global risks and catastrophes. Human activity, which so far does not fit into this picture, is the main cause of significant changes in the planetary system. Global catastrophes are associated with events of a sudden nature that take place within the range of our planet and have a large deviation from their average manifestation. They have a negative impact on the economies of countries and the safety of populations. They are characterised by their great destructive power and destructive effect, which far exceed the ability of human society to mitigate or prevent their negative impact. By definition, a catastrophe (from Latin catastrophe) is an unexpected misfortune; calamity; an event with tragic consequences; a disastrous end, a disastrous conclusion [Dictionary of foreign words in the Bulgarian language. BAS]. Global catastrophes, therefore, are events that cause many casualties or damage to the health of large numbers of people, affect all of human civilization and recognize no boundaries, and no single country can deal with them alone. Any classification of global catastrophes on Earth is very provisional. Most often a combination of many factors of different nature leading to catastrophic consequences is used. There is no such thing as a ranking of all the bad things that could happen to all of us, but if there were, global catastrophe would probably be at the top. To the global catastrophes that threaten us now and in the foreseeable future we can with good reason include the evolution of the stars in the universe, the asteroid threat, and rogue artificial intelligence that can cause catastrophic destruction. These sorts of terrible things (defined as events or processes) that would lead to the deaths of roughly 1/10th of the world's population or have similar impacts may only be hypothetical for now, but that doesn't mean we shouldn't recognize them, study them, assess their causes and risks, and do everything in our power to prevent them. According to the Global Catastrophic Risks Report

[Global Catastrophic Risks 2021: Navigating the Complex Intersection. Global Challenges Foundation (GCF) annual report] by the Swedish Global Challenges Foundation, the most likely global catastrophes that may occur in the next few years in 2021 also raise the question of advance planning to prevent a catastrophe and studying the next global risks. The survival of human civilization near a black hole formation is identified as such.

The night sky may appear calm but, in reality, there are constant upheavals throughout the cosmos. Among the most extreme of these are gamma-ray bursts (GRBs). These occur when old stars collapse to form black holes. The amount of energy released is enormous. In no more than a few minutes, an amount of energy equivalent to that released by the Sun over its 10 billion-year existence is ejected in concentrated beams of high-energy radiation called gamma rays.

Problems and risks resulting from global catastrophes . What could happen to our planet if the Earth is hit by such a powerful beam of radiation? Direct damage would be limited because the Earth's atmosphere would weaken the GRB beam significantly. A brief pulse of a dangerous ultraviolet beam (UV radiation) would reach the Earth's surface, but widespread damage would be prevented. The GRB beam, however, would be catastrophic to the stratosphere (the layer 10 to 50 km above the Earth's surface where there is a high concentration of ozone), ultimately wreaking havoc on the Earth's surface.

The main destructive effects are caused by gamma rays, which ionize and dissociate nitrogen and oxygen molecules in the stratosphere, forming ozone-destroying nitrogen compounds. The subsequent destruction of the ozone layer will lead to an increase in the levels of solar ultraviolet radiation reaching the Earth over several years. It damages DNA, leading to the destruction of life forms, for example through developmental abnormalities and cancer. Surface marine inhabitants, such as plankton, which are critical to the food chain and global oxygenation, will be threatened.

A secondary effect will be smog-like nitrous oxide gas, which is produced in the stratosphere and will reduce the amount of visible sunlight reaching the Earth's surface. Although the reduction in visibility is expected to be small and to last for several years, it could lead to global cooling at the extinction level if the climate system has already reached its tipping point.

But the chance of the GRB beam threatening life on Earth is still minimal. All the flares observed so far have occurred far outside our galaxy. Consequently, the GRB beam is weak and has little effect, if any, on Earth's atmosphere. Understanding the risk associated with GRB is possible through curiosity-driven research that seeks a deeper understanding of the world without giving specific application. This leads to a better understanding of habitable zones in galaxies in general, which informs the search for extraterrestrial life [Piran, T., R. Jimenez, Physical Review Letters 113, 2014]. Only 10% of all galaxies can be hospitable to life. Regions with low galaxy densities are favoured because conditions are not conducive to GRB beam formation. It is reassuring that the solar system is in just such an environment [Spinelli, R. et al., Astronomy & Astrophysics 647, 2021]. Towards the lower risk global catastrophes is the danger of a collision with an asteroid. An asteroid is a small planet-like celestial body in orbit around the Sun. Asteroids are also considered minor planets, with sizes much smaller than those of actual planets. The exact definition of an asteroid has not yet been fully clarified, but relative to their size, asteroids are bodies larger than 50 m in diameter, unlike meteorites (solid bodies of extraterrestrial origin ranging in size from a few mm to several m).

Large space objects include asteroids over 1 km in diameter. There are about 120 known very large asteroid craters on our planet. Asteroids can reach the Earth's surface almost unimpeded, unlike meteorites, which explode as they enter the Earth's atmosphere. They are composed mostly of rocks and metals.

The asteroid that killed the dinosaurs 65.5 million years ago is about 10 km in diameter. The fall to Earth of a cosmic body 90 km in diameter is absolutely guaranteed to end life on the planet. Many scientists have developed theories that the mass extinction during the Cretaceous and Tertiary periods was caused by one or more catastrophic events, including a massive asteroid impact or increased volcanic activity.

In 1980, a team of scientists led by physicist and Nobel laureate L. Alvarez discovered that sedimentary layers from the Cretaceous-Tertiary boundary all over the world contained iridium in concentrations many times higher than normal. Because iridium is present in abundance in most asteroids, Alvarez's team suggests that it was an asteroid that impacted Earth [Alvarez, LW, Alvarez, W, Asaro, F, and Michel, HV. Extraterrestrial cause for the Cretaceous-Tertiary extinction. *Science* 208 (4448). 1980].

With the growing acceptance of L. Alvarez on the extinction of the dinosaurs and the observed collision of the comet Shoemaker-Levy 9 with the planet Jupiter in 1994, more and more attention is being paid to the identification of asteroids whose orbit crosses the Earth's and which are likely to collide with the Earth in the future. Since 1998, high performance automatic asteroid detection and observation systems have been introduced, equipped with cameras and computers directly linked to telescopes.

It is no coincidence that the Global Catastrophic Risks Report 2021 includes asteroid impacts among the 10 major risks identified. The largest of these (over 1 km in diameter) have the potential to cause geological and climatic impacts on a global scale, threatening all of human civilisation. Smaller asteroids (in the 140 m to 1 km range) could cause regional to continental destruction, potentially killing hundreds of millions of people.

Relatively smaller objects also pose a serious threat to Earth, as their blasts near populated areas as a result of the shock wave and heating can cause significant destruction commensurate with the damage of an atomic blast. By just one coincidence, the one that fell in an uninhabited area in 1908. The Tunguska meteorite (one of the most mysterious phenomena of the 20th century) did not cause such consequences. A giant orb flew over a vast area of Siberia between the Lower Tunguska and Lena rivers, its flight accompanied by sound and light effects and ending with a powerful explosion that devastated the taiga forest and destroyed wildlife. In the following nights, the skies over southern Siberia, Central Asia and almost the entire continent of Europe are illuminated in bright and unusual colours that have gone down in history as 'the bright nights of the summer of 1908'.

In 2013, a meteorite with a diameter of about 17 m and a weight of about 10 thousand kg was found. It entered the Earth's atmosphere above the town of Chelyabinsk. It disintegrated into a large number of fragments. The Chelyabinsk meteorite became the largest celestial body to fall to Earth since the Tunguska meteorite.

Asteroid studies continuing since the 1990s have found more than 26 thousand asteroids of various sizes by the end of 2021 [Global Catastrophic Risks 2021: Navigating the Complex Intersection. Global Challenges Foundation (GCF) annual report, p. 39]. The key factors influencing risk levels are related to the probability of an impact with Earth, the size and composition of the asteroid, and the location on Earth where the event will occur.

In September 2022, NASA will conduct an unprecedented test of planetary asteroid defence for the first time in the world. NASA's Double Asteroid Redirect Test (DART) spacecraft crashed into the asteroid Dimorphos about 11 million km from Earth. The mission was designed to determine if a spacecraft could alter the trajectory of an asteroid through sheer kinetic force, pushing it off course enough to keep Earth out of harm's way [Ibid, p. 40].

Scientists hope the method can be used to push asteroids and prevent cataclysms. With vigilance and advance warning, an asteroid impact is a devastating disaster that can be prevented. The International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG) provide mechanisms at the global level to address the global challenge posed by asteroids, including detection, tracking and impact risk assessment, and subsequently planetary protection measures such as civil defence and asteroid diversion.

The importance of artificial intelligence for global risks and changes. The category of emerging risk threats for global catastrophes should include malicious artificial intelligence. It may not seem like an immediate source of concern. However, we must remember that the challenges that are widely recognised as the greatest and most significant today - climate change and nuclear weapons - were unknown only 100 years ago, and delayed response as in the case of climate change has increased the level of risk significantly. Human intelligence has led to human society's greatest successes, but it is also behind some of the greatest catastrophes. What would happen if we created an artificial intelligence that was significantly more intelligent than any human on the planet. Could it help us achieve even more remarkable successes, or would it trigger the emergence of the greatest catastrophe: the extinction of human civilization. Modern artificial intelligence systems already outperform humans in the tasks for which they are trained, especially in terms of the speed at which they act. In just a few seconds, an AI system can reproduce the winning move in a chess game, translate an article, or plot a route to a destination by taking into account current traffic patterns.

Despite the fact that it takes each person longer to perform any of these actions, a key aspect of human intelligence is the fact that we can perform all of these tasks i.e. we have general intelligence. While AI systems can only perform the tasks they are programmed to do, humans can learn from experience and develop new skills and competencies or solve new problems.

Many experts worry that if an AI system achieves human-level general intelligence, it will quickly surpass us, just as AI systems have done with their narrow tasks. At this point, we don't know what artificial intelligence will do.

First, it is important to note that experts are not worried that artificial intelligence will suddenly become psychopathic and start randomly hurting or killing people. Instead, experts fear that artificial intelligence programs will either be used intentionally to cause harm or will be too competent at a task that turns out to be ill-defined.

Artificial intelligence researchers are racing to find ways to prevent the spread of fake news, as well as with the emergence of blatant fakes, in which programs alter what is seen or heard in a video. At the same time, artificial intelligence systems deployed with the best of intentions to identify images, review job applications, have inadvertently increased institutional requirements, putting jobs at risk and deepening inequality. It is not hard to imagine how dangerous advanced AI systems can become, operating across multiple platforms or falling into the hands of terrorists or despots.

The world-renowned robotics professor N. Sharkey believes we have reached a stage in the development of artificial intelligence where we have created robots that may decide to get rid of their creators. "We are moving rapidly towards a revolution in robotics and not thinking about the myriad unpredictable problems that are springing up under our noses. The time has come to take a step back, and we'd do well to think about the future of technology before we've had enough of it." [What is a global catastrophe? <https://muzruno.com/obrazuvane/207313-kakvo-predstavljava-globalna-katastrofa.html>] .

Until recently, robots were mostly applied in the manufacturing sector (mainly in industry), but the situation in a globalizing world has rapidly changed with the automation of the service sector (service industry).

Today, there are around 12 million robots in operation worldwide, while their industrial counterparts number only 1.3 million. The International Federation of Robotics predicts that by the end of 2022, the number of smart machines in the service sector will reach 31 million robots. According to H. Christensen, director of the Center for Robotics and Artificial Intelligence Machines at the Georgia Institute of Technology in the US, we will need to have ethical norms that allow for normal interaction with robots without crossing the line of what is allowed [Ignatova, I., Don't Hit the Keyboard. <https://www.banker.bg/sudbi/read/477938-ne-udriaite>]. It is no coincidence that the UK government is preparing a document on the status of robots in 2056, in which, if artificial intelligence becomes ubiquitous, there may be calls to grant them rights on a par with humans.

CONCLUSION

It is undeniable that significant resources are being devoted to developing the potential of these technologies, but very little is being spent on mapping and managing the new hazards they bring. As the pace of technology development cannot be expected to be linear, and given our limited knowledge and resources, more and more experts from around the world are calling for proactive action on these risks today. Science fiction often portrays AI systems as humanoid robots, but the AI systems we interact with in our daily lives are usually algorithms running in the background of some program we use. They work so seamlessly that people outside of the AI world often don't even realize they're just interacting with an AI. For now, these programs can only perform these narrow tasks. But it is generally accepted that we will be forced to create AI systems capable of performing most tasks like any human. According to the average expert surveyed, there is roughly a 50% chance of such artificial intelligence by 2050. Despite their size, the risk of global catastrophes such as the evolution of the stars in the universe, asteroid hazards, and rogue artificial intelligence is receiving less attention. One reason is that many of these risks are unlikely in any decade of the 21st century. But even when the likelihood is small, the obvious significance of these harmful impacts threatening the survival of human civilization demands that these risks be taken extremely seriously. Reducing the risks of global catastrophes is both a global and intergenerational public good.

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IMPACT OF DIGITIZATION ON THE COMPETITIVENESS OF VITICULTURE ENTERPRISES

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ABSTRACT

At this stage, Bulgaria has a ready and established strategy for digitization of agriculture, but there is no such strategy for the viticulture industry. I believe that the digitalization strategy of agriculture should be decomposed into separate sectoral strategies if we want an effective sectoral digitalization strategy in terms of achieving competitive development. Each branch of agriculture has its specifics, which must be reflected in the strategy for its digitalization, and that each of the strategies must be complemented with the other sectoral strategies, so as to achieve the maximum effect. The aim of the current survey is to determine the impact of digitalization on the level of competitiveness of viticulture enterprises.

KEYWORDS: digitalization, viticulture, competitiveness

ABSTRAKT

Derzeit verfügt Bulgarien über eine fertige und etablierte Strategie für die Digitalisierung der Landwirtschaft, aber es gibt keine solche Strategie für die Weinbauindustrie. Ich bin der Meinung, dass die Digitalisierungsstrategie für die Landwirtschaft in separate sektorale Strategien aufgeteilt werden sollte, wenn wir eine effektive sektorale Digitalisierungsstrategie im Sinne einer wettbewerbsfähigen Entwicklung erreichen wollen. Jeder Zweig der Landwirtschaft hat seine Besonderheiten, die sich in der Strategie für seine Digitalisierung widerspiegeln müssen, und jede der Strategien muss mit den anderen sektoralen Strategien ergänzt werden, um den maximalen Effekt zu erzielen. Ziel der vorliegenden Untersuchung ist es, die Auswirkungen der Digitalisierung auf die Wettbewerbsfähigkeit der Weinbaubetriebe zu ermitteln.

STICHWORTE: Digitalisierung, Weinbau, Wettbewerbsfähigkeit

RÉSUMÉ

À ce stade, la Bulgarie dispose d'une stratégie prête et établie pour la numérisation de l'agriculture, mais il n'existe pas de stratégie de ce type pour l'industrie viticole. Je pense que la stratégie de numérisation de l'agriculture devrait être décomposée en stratégies sectorielles distinctes si nous voulons une stratégie de numérisation sectorielle efficace en termes de développement compétitif. Chaque branche de l'agriculture a ses spécificités, qui doivent se refléter dans la stratégie de numérisation, et chacune des stratégies doit être complétée par les autres stratégies sectorielles, afin d'obtenir un effet maximal. L'objectif de la présente étude est de déterminer l'impact de la numérisation sur le niveau de compétitivité des entreprises viticoles.

MOTS-CLÉS: numérisation, viticulture, compétitivité

INTRODUCTION

The digitization of the viticulture sector is a phenomenon that is accelerating its development through generous government support, both at the European and national level. In recent years, European policy has been based on the idea that the sustainable development of agriculture can be achieved by observing the principles of circularity and utilizing the resources used in the production process in enterprises to the maximum extent [Stoeva, Dirimanova and Borisov, 2021]. Achieving the maximum degree of utilization of resources requires the faster and more joint digitization of processes, both at the sector level and at the farm level. The viticulture sector is also covered by the regulatory framework of the more inclusive digitalisation policy. It is one of the viticultural industries that generates products with high added value, traded both locally, as well as in the international market. An industry that generates a significant share of the gross added value in the "agriculture" sector and in which there is a large number of employees. Sustainable competitive development requires the imposition of perfect control over all business processes in the viticulture enterprise, which is only possible by imposing the digitization approach of these processes [Fidanska, Borisov and Nikolov, 2021]. Competitiveness increasingly relies on digitization and the skillful extraction of benefits from this process, benefits to be turned into a competitive advantage over other market participants. That is why I believe that a sectoral strategy for more joint digitization is needed, which will be a key competitive determining factor for the development of viticulture in our country. At this stage, Bulgaria has a ready and established strategy for digitization of agriculture, but there is no such strategy for the viticulture industry. I believe that the digitalization strategy of agriculture should be decomposed into separate sectoral strategies if we want an effective sectoral digitalization strategy in terms of achieving competitive development [Behluli, Qerimi, Borisov and Hajdari, 2020]. Each branch of agriculture has its specifics, which must be reflected in the strategy for its digitalization, and that each of the strategies must be complemented with the other sectoral strategies, so as to achieve the maximum effect [Borisov, 2021].

The aim of the current survey is to determine the impact of digitalization on the level of competitiveness of viticulture enterprises.

An approach to impact analysis and assessment. The process of drawing up a methodology for the analysis and assessment of the competitiveness of the wine-growing enterprise covers two main stages - (1) identification of indicators for the analysis and assessment of the competitiveness of the wine-growing enterprises and (2) validation of the indicators for assessing the competitiveness of viticultural enterprises. The main methods used in the compilation of the methodology are the method of multicriteria analysis and the method of expert evaluation. [Borisov and Garabedian, 2020]

Identification of markers and indicators for assessing the competitiveness of wine-growing enterprises. The identification of markers and indicators for brevity called - (indicators) for assessing competitiveness is carried out by multi-criteria analysis. A potential list of indicators has been prepared, which are evaluated by experts from various scientific and practical fields - economists, technologists - agronomists, managers and marketers. Based on their assessments, the final set of indicators was formed, which are used to assess the competitiveness of the wine-growing enterprises and the sector as a whole. The methodology is divided into different steps covering literature review, multi-criteria evaluation, selection of indicators, integration of indicators, field study, data analysis and applicability assessment. As

a result of a comprehensive literature review, a list of indicators is drawn up, taking into account the various aspects of competitiveness. A special place among them is occupied by:

- Indicators used by national and international institutions;
- Specific indicators (used in scientific literature);
- Indicators created by the authors of the presented methodology.

Table 1. Description of the criteria for expert evaluation of the proposed list of indicators for evaluating the competitiveness of viticulture enterprises. Source: adapted model of [Borisov, Stoeva and Dirimanova, 2021]

KES		Description
1 & 2	Distinctive power by (1) time / (2) place	The ability to reflect (1) time / (2) place differences due to external factors and those in management result
3	Analytical value	The indicator must be scientifically based, i.e. yes it is calculated using established scientific terms
4	Measurability	The indicator must Yes is easy for measurement. Therefore, its use is judged by the costs, which requires
5	Transparency	The meaning of the indicator should be clear to understand and unequivocally
6	Relevance	The indicator should help to account for the effect of the management of competitiveness factors
7	Transferability	The indicator should be able to be used in different types of business structures
8	Relevance	The indicator should be maximally relevant in terms of competitiveness, related to the database

In the case of the Multi-criteria expert evaluation (MKE), the confirmation of the potential indicators is carried out by experts. They are selected on the basis of their competence and commitment to solving problems related to the competitiveness of the viticulture sector. Indicators and experts are grouped thematically in panels forming the different aspects of competitiveness. The evaluation of the potential indicators by the experts is carried out according to eight principles included in the expert selection criteria (ESC) - table 1.

After agreeing to participate, the experts receive the following documents: a list of the characteristics of the indicators (name, stability in evaluation, description, source, calculation method, necessary information, rating scale and interpretation) and guidelines for the evaluation procedure. Based on these documents, the experts, according to their thematic affiliation, evaluate each indicator according to the eight principles (see table 1). Experts use a 4-point scale to rate the indicator in terms of relevance with each of the 8 principles as follows: 0 – not relevant, 1 – low degree of relevance, 2 – strong degree of relevance and 3 – very strong degree of relevance.

The reporting is based on a scale, where indicators that received expert evaluations above a given level are selected. The indicator selection criterion includes the expert's score for each indicator and the average score for the eight principles. The different evaluations of the experts for each indicator are synthesized in an "arithmetic mean value", formed as an expert consensus score, equal to the average weighted score obtained from the sum of all experts for a given indicator. The selected indicators are included in a questionnaire that is used in a test survey in selected agricultural enterprises.



Figure 1. Results of validation of competitiveness markers. Results are from a focus group conducted with 33 experts, survey - 2021.

Validation of markers and indicators for assessing the competitiveness of wine-growing enterprises. Figure 1 shows the assessment of the experts regarding the markers for the diagnosis of the competitiveness of wine-growing enterprises. The individual evaluations of the experts for each individual marker are synthesized in an "arithmetic mean value", formed as an expert consensus score (ECR), equal to the average weighted score obtained from the sum of all experts for a given marker. Competitiveness markers that received an EQF above 2.5 points are defined as reliable regarding the underlying principles in the validation of the indicators (see in the figure, the pillars in green). As reliable markers, experts have indicated - (1) the presence of sustainable competitive advantages – the value of the indicator is 3.00; (2) adaptability to change; (3) the preservation of market power; (4) a unique value proposition; (5) efficiency

of the resources used; (6) labor productivity; (7) access to new markets; (8) diversification of the product range.

Figure 2 shows the summary expert assessment regarding the reliability of the indicators of competitiveness of wine-growing enterprises. Out of all 14 indicators, the experts have validated as reliable - 6. The results of the expert evaluation show that the following indicators are highly reliable for the diagnosis of the viticulture: (1) market share dynamics - with a value of 3.00; (2) profitability of sales - with a value of 2.6; (3) return on investment - with a value of 2.6; (4) gross margin with a value of 2.5; (5) competitive advantage index with a value of 2.5 and (6) direct cost effectiveness – a value of 2.5.

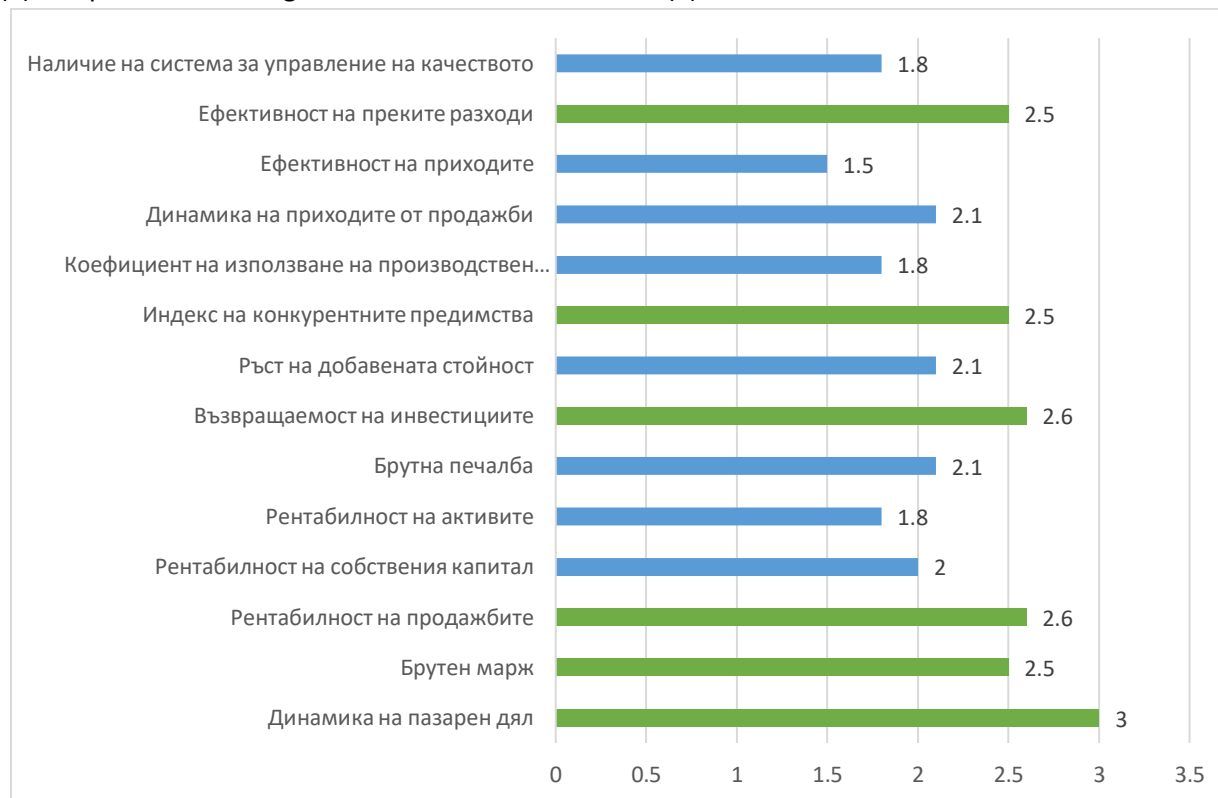


Figure 2. Results of validation of competitiveness indicators. Results are from a focus group conducted with 33 experts, survey - 2021.

RESULTS AND DISCUSSION

Impact analysis and assessment. The assessment of the impact of digitalization on the degree of competitiveness is based on the results of a survey conducted among 30 agricultural enterprises, whose owners have to some extent implemented digital technologies in the management of the activity. Of the surveyed agricultural enterprises, 75% have managed to implement several hardware solutions and related software. Which, based on the conducted field research, is defined as a high level of digitization of management activities. Of all agricultural enterprises, 33% use software for processing agricultural information, as an element of digitization applicable in the daily management of the viticulture enterprise, and 13% have relied only on a single hardware solution.

Subjective analysis of the effects of digitalization on the level of competitiveness of wine-growing enterprises. In the course of conducting a survey, the owners assess to what extent the digital

solutions used influence the level of competitiveness of the agricultural enterprises they own. Competitiveness is assessed through the indicators - profitability of sales, return on investments and gross margin. These indicators through a pilot study among wineries are defined as recognizable by the owners. The self-assessment approach is used regarding the results achieved from the application of digital solutions.

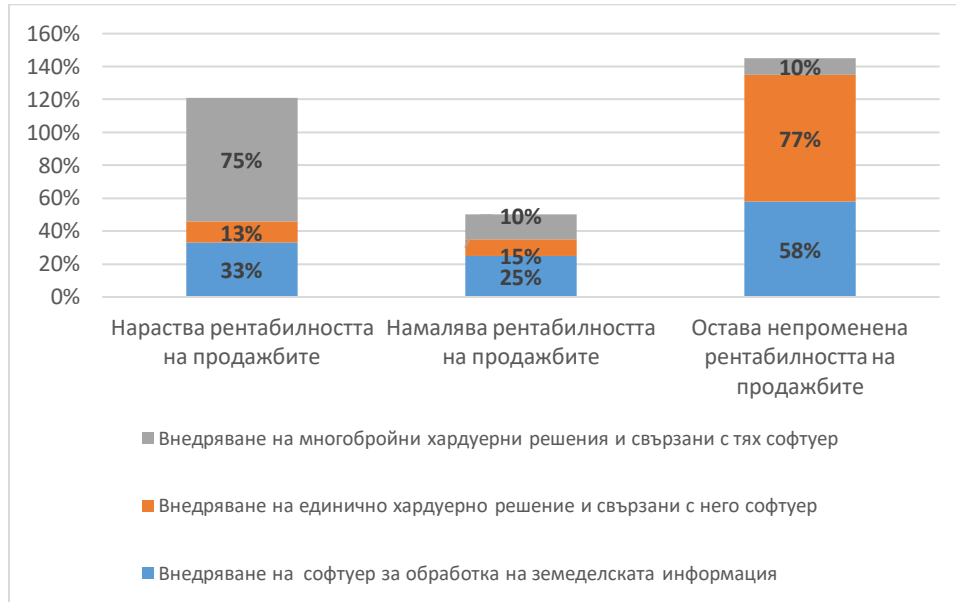


Figure 3. Impact of digitalization on the profitability of sales in viticulture enterprises. Results of a field study among 30 enterprises, 2021-2022.

The results of the survey indicate that with a high degree of implementation of digital solutions in the management of the vineyard, the profitability of sales increases - 75% of the surveyed farmers state this as a fact. Businesses that have implemented only a single hardware solution and related software also report an increase in the profitability of sales - 77% of the surveyed owners say that the profitability of the sales made increases (see figure 3).

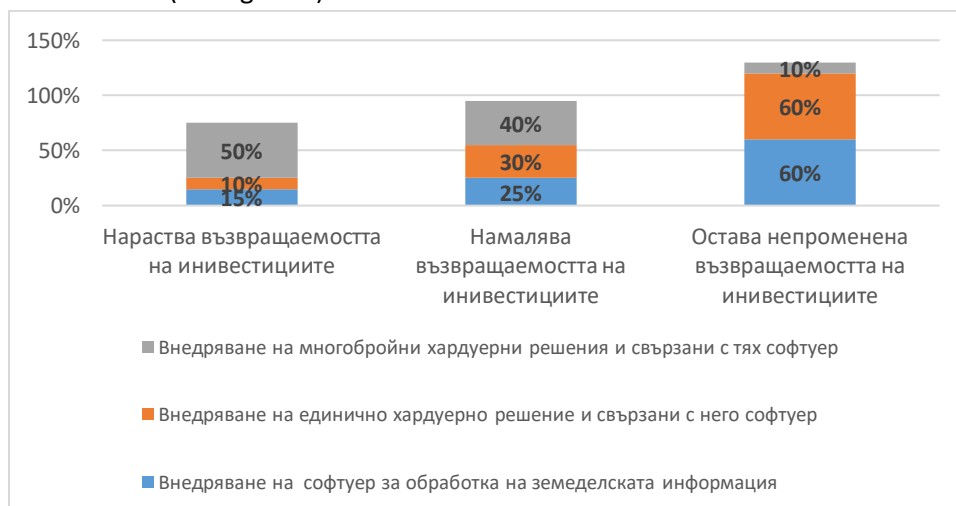


Figure 4. Impact of digitalization on the return on investment in viticulture enterprises. Results of a field study among 30 enterprises, 2021-2022.

The effects of digitization on the return on investment made are generally also positively assessed by the owners. Owners who have implemented a large number of hardware solutions and related software are of the opinion that this solution of theirs has had a critical effect on the return on investment inviticulture - 50% of them declare that profitability has increased. The share of owners (60% of all respondents) who own enterprises in which the implementation of a single hardware and related software solution leads to an increasing return on investment is also significant.

The following figure shows the evaluation of the owners regarding the application of digital solutions in the management of the farm. The data shows that the gross margin increases mostly with the implementation of a higher degree of digitization in the management of the wine-growing enterprise – 50% of the surveyed owners indicate that the gross margin has increased (see figure 4). In 60% of the surveyed owners, it is noticed that when implementing only software for processing agricultural information, the gross margin remains unchanged. One 25% of the owners state that with the digitization of farm management, the gross margin decreases over time.



Figure 5. Impact of digitalization on the gross margin in wine-growing enterprises. Results of a field study among 30 enterprises, 2021-2022.

Regression analysis of the effects of digitalization on the level of competitiveness of wine-growing enterprises. Through the regression analysis, the aim is to establish to what extent there is a statistically significant relationship between the costs incurred for digitization of the management of the viticultural economy (these costs are perceived as a factorial indicator) and its level of competitiveness, which it achieves as a result [Borisov and Radev, 2020]. As performance indicators evaluating the effects

of the degree of digitization of the management of the wine-growing enterprise are used - (1) return on investments; (2) gross profit; (3) sales revenue; (4) gross margin; (5) profitability of sales and (6) market share. All these indicators have undergone validation and can be considered reliable in assessing the level of competitiveness achieved. 6 relationships between the indicators characterizing the cause factor and the result factor are tested as follows [Petrov and Borisov, 2021]]:

- Relationship between precision technology implementation costs and return on investment;
- Relationship between precision technology implementation costs and gross profit;
- Relationship between precision technology implementation costs and sales revenue;
- Relationship between precision technology implementation costs and gross margin;
- Relationship between precision technology implementation costs and sales profitability;
- Relationship between precision technology implementation costs and market share.

Table 2. Results of a regression analysis assessing the interaction between the degree of digitalization and the level of competitiveness of wine-growing enterprises. Source: own.

Statistical indicators	Return on investment	Gross profit	Sales revenue	Gross margin	Return on sales	Market share
Correlation coefficient	0.174	0.935	0.095	0.304	0.776	0.095
Multiple R						
Coefficient of definition	0.030	0.875	0.0091	0.093	0.603	0.009
R square						
Adjusted R Square	-0.004	0.871	-0.0261	0.060	0.589	-0.026
Degree of dependence	weak	very strong	very weak	moderate	strong	very weak
Type of addiction	negative	positive	negative	positive	positive	negative
Regression coefficient b0	0.788	18805.9	6208280.2	620901.2	0.034	3.44
Regression coefficient b1	-1.797	0.05	-0.0431	-1.4313	00000.5	-2.4

Table 2 gives the results of testing the relationship between the degree of digitalization and the achieved level of competitiveness of wine-growing enterprises. The performed regression analysis proves that the costs of implementing precision technologies have a positive (there is a direct relationship between the studied factors) influence on the gross profit and the profitability of sales. A strong degree of dependence is noticeable in these two investigated relationships – the coefficients of determination are -0.875 and 0.603, respectively. Expenditure on precision technology has a negative impact on the return on investment, sales revenue, gross margin and market share of the wine industry.

CONCLUSIONS

Digitization in the viticulture sector is in its infancy. Viticulture and wine enterprises have mainly managed to digitize their accounting and supply activities. They have partly managed to digitize some critical technological phases of the production process such as irrigation and monitoring of the vineyard, control and monitoring of the distillation process.

The challenges associated with the application of precision agriculture in the industry can be divided into two broad areas: (1) those inherent in the technological means used in precision agriculture (drones, robots, GPS, etc.), raising questions of technological control, human safety, civil liability and

privacy, and (2) those emerging alongside the development of precision agriculture as an autonomous technological field.

The lack of rural broadband infrastructure and connectivity to devices (eg a tractor, computer, tablet or smartphone that records what is happening, or a device for privacy issues of satellite photography) providing access and ownership of data is one of the main problems for the accelerated implementation of the precision agriculture approach in the industry.

When applying the precision agriculture approach in the industry, some serious problems arise related to the compatibility between agricultural equipment and digital infrastructure. Among the entrepreneurial community, there is concern about hardware and software compatibility, as well as how to choose the right technical systems to implement precision agriculture. It is important that the various digital technologies that will be used in the enterprise are compatible with the hardware devices in which the entrepreneur has invested. Buying the necessary hardware devices is an expensive investment, and if these devices do not have the necessary compatibility with the software needed to solve the daily problems of farms, then this will make the investment itself meaningless;

The results of the survey indicate that with a high degree of implementation of digital solutions in the management of the wine-growing enterprise, the profitability of sales increases - 75% of the surveyed wine-growing producers state this as a fact. Businesses that implemented only a single hardware solution and related software also reported an increase in profitability of sales - 77% of surveyed owners said that profitability of sales made increased

The effects of digitization on the return on investment made are generally also positively assessed by the owners. Owners who have implemented a large number of hardware solutions and related software are of the opinion that this decision of theirs has had a critical effect on the return on investment in the winery - 50% of them declare that the return has increased. The share of owners (60% of total respondents) who own enterprises in which the implementation of a single hardware and related software solution leads to an increasing return on investment is also significant.

As a result of the conducted statistical research, it can be summarized that digitalization has an impact on the competitiveness of the wine-growing enterprise in terms of an increase in gross profit and profitability of sales. Digitization, expressed through the level of costs for its implementation in the viticulture enterprise, has a systematic negative impact on the return on investment, sales revenue and gross margin.

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MAIN DETERMINANTS OF DEMAND FOR DIGITAL SERVICES IN VITICULTURE

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ABSTRACT

Viticulture, like any economic sector, undergoes structural changes caused by changes in the business environment. From the era of the "green revolution", viticulture today develops in the framework of sustainable competitive development. Competitive development, which is based on new approaches to management and development of the economy. Today, sustainable competitive development of the industry is understood as this development that combines the principles of the circular economy and the use of bio-based technologies and products. Applying these principles requires tools such as internet connectivity, internet of things and digitization of business processes in viticulture. The aim of the present study is to identify the main determinants of the demand for digital services in viticulture. The main method used to identify these determinants is the questionnaire survey. Through a specially designed, tested and validated survey, information on the main determinants is collected.

KEYWORDS: digital services, viticulture, determinants

ABSTRAKT

Wie jeder Wirtschaftszweig unterliegt auch der Weinbau einem Strukturwandel, der durch Veränderungen im wirtschaftlichen Umfeld verursacht wird. Seit der "grünen Revolution" entwickelt sich der Weinbau heute im Rahmen einer nachhaltigen wettbewerbsfähigen Entwicklung. Eine wettbewerbsfähige Entwicklung, die auf neuen Ansätzen für das Management und die Entwicklung der Wirtschaft beruht. Unter nachhaltiger wettbewerbsfähiger Entwicklung des Sektors versteht man heute eine Entwicklung, die die Grundsätze der Kreislaufwirtschaft und den Einsatz biobasierter Technologien und Produkte kombiniert. Das Ziel der vorliegenden Studie ist es, die wichtigsten Determinanten für die Nachfrage nach digitalen Dienstleistungen im Weinbau zu ermitteln. Die wichtigste Methode zur Ermittlung dieser Determinanten ist die Fragebogenerhebung. Mittels einer speziell entwickelten, getesteten und validierten Umfrage werden Informationen über die wichtigsten Determinanten gesammelt.

STICHWORTE: digitale Dienstleistungen, Weinbau, Determinanten

RÉSUMÉ

La viticulture, comme tout secteur économique, subit des changements structurels dus à l'évolution de l'environnement des affaires. Depuis l'ère de la "révolution verte", la viticulture se développe aujourd'hui dans le cadre d'un développement compétitif durable. Un développement compétitif qui repose sur de nouvelles approches de la gestion et du développement de l'économie. Aujourd'hui, le développement compétitif durable de la filière s'entend comme ce développement qui combine les principes de l'économie circulaire et l'utilisation de technologies et de produits biosourcés. L'application de ces principes nécessite des outils tels que la connectivité internet, l'internet des objets et la

numérisation des processus commerciaux dans la viticulture. L'objectif de la présente étude est d'identifier les principaux déterminants de la demande de services numériques dans la viticulture. La principale méthode utilisée pour identifier ces déterminants est l'enquête par questionnaire. Une enquête spécialement conçue, testée et validée permet de recueillir des informations sur les principaux déterminants.

MOTS-CLÉS: services numériques, viticulture, déterminants

INTRODUCTION

Viticulture, like any economic sector, undergoes structural changes caused by changes in the business environment [Borisov and Garabedian, 2020]. From the era of the "green revolution", viticulture today develops in the framework of sustainable competitive development [Borisov, 2021]. Competitive development, which is based on new approaches to management and development of the economy. Today, sustainable competitive development of the industry is understood as this development that combines the principles of the circular economy and the use of bio-based technologies and products. Applying these principles requires tools such as internet connectivity, internet of things and digitization of business processes in viticulture [Fidanska, Borisov and Nikolov, 2021].

The aim of the present study is to identify the main determinants of the demand for digital services in viticulture. The main method used to identify these determinants is the questionnaire survey. Through a specially designed, tested and validated survey, information on the main determinants is collected.

Organization of a survey. In order to collect the necessary information, to calculate the above-mentioned indicators, the implementation of the following research activities is undertaken [Borisov and Radev (2020):

- preparation of a survey card to study the state and needs of wine farms regarding the digital services offered on the market;
- conducting a survey and focus groups from the viticulture sector in Bulgaria during the period March 4, 2022 - April 30, 2022;
- conducting a survey and organizing focus groups of wine farms in Plovdiv (03.04.2022-03.17.2022), Hisara (05.01.2022-05.14.2022) and Asenovgrad (05.14.2022-05.30.2022), Haskovo (01.06).2022-07.06.2022);
- processing of primary data from questionnaires and focus groups, as well as building a database (03.04-06.10.2020);
- performing an analysis of the strengths and weaknesses, opportunities and threats for the development of beekeeping farms in Bulgaria (11.06 – 15.06.2020);
- identification of the main needs for increasing the competitiveness of beekeeping farms in the future (15.07-18.07.2020);
- identification of the specific needs related to the restructuring of agricultural sectors, characterized by a large number of bee farms (15.08-20.08.2020).

The database of the Directorate "Development of Rural Areas" and the Directorate "Compensatory Measures" of the Ministry of Internal Affairs and Communications - Sofia was used as a source for forming the sample. The resulting general population consists of 10,542 organizations that

meet the criteria defining them as MFA on the territory of the country. In forming the sample, the method of simple random sampling was used, and the constituent units were selected through non-returnable selection. The sample size is 31 surveyed bee farms.

District	Number	Survey period
Plovdiv	81	03/04/2022-03/17/2022
Hisara	20	01.05.2022-14.05.2022
Asenovgrad	35	14.05.2022-30.05.2022
Haskovo	61	01.06.2022-07.06.2022
Total:	197	
Focus group 1 (Plovdiv)	10	
Focus group 2 (Asenovgrad)	11	
Total:	218	

Figure1. Planned number of surveyed farms by region and focus group size. Source: Own.

The survey card includes 31 surveyed vineyards during the period 04.03.2022 - 07.06.2022. The study contains a synthetic amount of data needed to conduct an objective analysis of identifying the determinants of demand for digital services.

The survey card covers a total of 10 questions, structured to quickly determine the determinants of demand [adapted model of Borisov, Stoeva and Dirimanova,2021].

RESULTS AND DISCUSSION

On the Bulgarian market there are suppliers of various services and equipment as well as software for both partial and complete transition to digital management of the viticulture. In this part of the research, we aim to profile what the demand for digital services is on the part of the Bulgarian farmer, as well as to determine the benefits and obstacles of the introduction of digitalization as a tool for effective management of the viticulture.

The following questions included in the survey aim to collect information about the main determinants of the search for digital services by the owners, as well as to identify the main obstacles limiting access to these services.

Figure 2 shows the owners' answers to the question "What digital services do you use in your business?". The data from the conducted survey indicate that most often the owners use digital services of the type - "specialized in weather info services, navigation systems, specialized software", 63.4% of the total surveyed persons. In the second place, the owners indicate that they use digital services specialized in the management of technological processes, 24.2% of the total respondents indicated this type of service. In the last place, as a preferred digital service, the owners indicated the one that specializes in the management of managerial services, 12.4% of the total respondents.

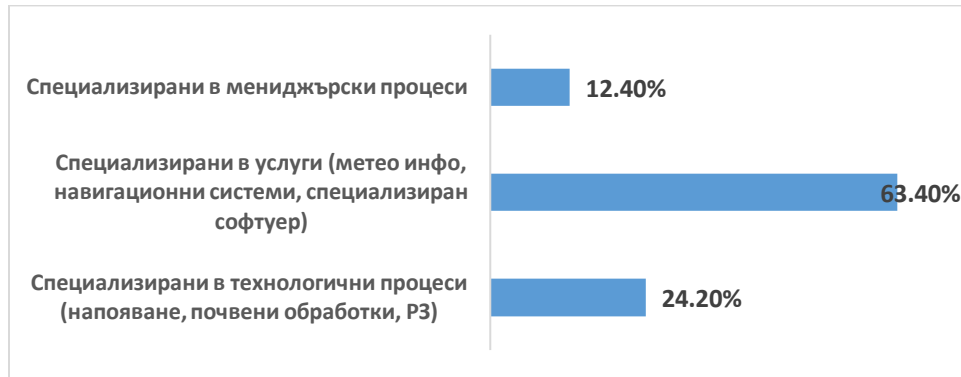


Figure 2. Digital services used by owners. Source: survey data among 197 respondents, 2022.

The next question in the survey is "How do you rate the benefits of the digital services you use?". The purpose of the question is to collect information about the generated benefit from the use of digital services, when carrying out the daily activities of the farmer on his farm. Figure 13 shows the assessment of the benefits of using digital services in farm management. Owners rate the following benefits as most significant: (1) efficient management of the viticulture enterprise (average rating – 4.57); (2) improving positions in the food chain (mean score – 4.57) and (3) price information – mean score 4.57.



Figure 3. Assessing the benefits of using digital services. Source: survey data of 197 respondents, 2022. (1-5 scale used, with 1 being the weakest and 5 being the strongest)

The next question in the survey is "Where do you get information about digital services?". Figure 3 shows the percentage distribution of the answers received by the surveyed owners. From the data thus presented, it can be seen that the majority of owners learn about the offered digital services from the websites and platforms of the providers of these services – 35.3% of all respondents indicated this answer. The next most important source of information is the sales representatives of digital services - 19.8% of all surveyed owners recognize them as a reliable source of information. Another reliable source for obtaining information is the specialized media - 17.1% of surveyed owners trust them.



Figure 4. Preferred information sources about digital services offered on the market. Source: own survey, data among 197 respondents, 2022.

The next question included in the survey is "Where is the digital service provider located?". Figure 5 presents the information obtained from this question. From the information presented in this way, it can be seen that regional providers of digital services are used - 465 of the total surveyed owners indicate this answer.

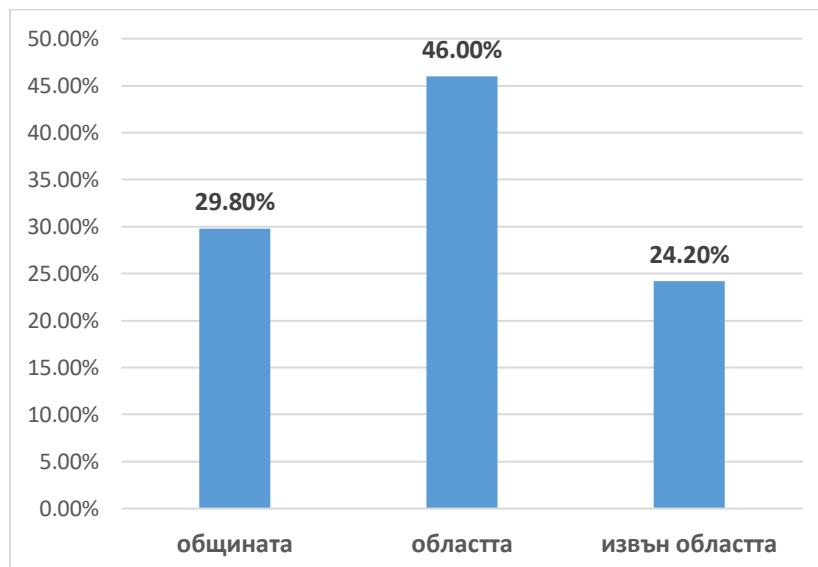


Figure 5. Location of the digital service provider. Source: survey data among 197 respondents, 2022.

By including the following question in the survey, the aim is to obtain information about the obstacles limiting owners' access to digital services. In Figure 16, the information on the main barriers to the use of digital services is presented. From the graphical analysis of survey data shows that the main limiting factors are: (1) lack of experience in using digital services on the part of the owners - 23.5% indicated this factor as the most significant problem; (2) the high price of the offered service – 21.4% of all surveyed owners and (3) complexity of the digital service – 19.6% of the surveyed owners stated that they do not use this type of service due to its complex nature.



Figure 6. Barriers limiting access to digital services. Source: survey data among 197 respondents, 2022.

Another factor that was investigated in the conducted survey is the provision and sharing of access to the digital services offered in the sector. Figure 7 shows the distribution of the answers received by the surveyed owners.



Figure 7. Access to digital services. Source: survey data among 197 respondents, 2022.

From the data thus presented, it can be seen that the owners prefer to use digital services individually - 73.1% of the surveyed owners stated this. Next is the group of owners who use digital services on a subscription basis - 19.9% of all surveyed owners.

The next question in the survey is "Do you participate in specialized information events related to digital solutions?". The data from the responses obtained are presented in Figure 8. Of all surveyed owners, 50.9% stated that they participate in seminars and conferences dedicated to the issue.

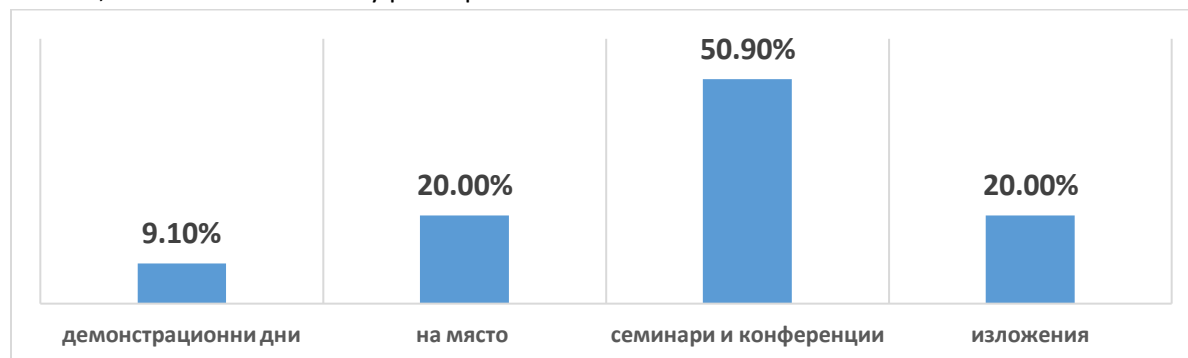


Figure 8. Do you participate in specialized information events related to digital solutions (services).

Source: survey data among 197 respondents, 2022

CONCLUSIONS

- Digitization in the viticulture sector is in its infancy. Viticulture and wine enterprises have mainly managed to digitize their accounting and supply activities. They have partly managed to digitize some critical technological phases of the production process such as irrigation and monitoring of the vineyard, control and monitoring of the distillation process.
- The challenges associated with the application of precision agriculture in the industry can be divided into two broad areas: (1) those inherent in the technological means used in precision agriculture (drones, robots, GPS, etc.), raising questions of technological control, human safety, civil liability and privacy, and (2) those emerging alongside the development of precision agriculture as an autonomous technological field.

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DIGITAL TRANSFORMATION OF CRM STRATEGIES: ANALYSIS OF POTENTIAL AND INNOVATIVE STRATEGIES

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ABSTRACT

The last two decades of the previous century and the first two decades of the current century enabled CRM to become ubiquitous in both global companies and small businesses. This process continues and changes. With the present development, I aim to identify and illuminate this transformation, which I identify as the transition from CRM to e-CRM. Therefore, at the beginning, I characterize the key concepts for the development, then I discuss the similarities and differences between digitization, digitalization and digital transformation. We continue with an analysis of digital transformation and its main principles and processes. Here, in parallel with many other transformations in the corporation/organization, I emphasize the need for it to become an "agile organization" and to adapt its specific digital culture. In this regard, I compare the features and identify the similarities and differences between CRM to e-CRM. To illuminate all this, case studies of companies - leaders in digital transformation and e-CRM are used. Finally, I conclude with a conclusion in which I focus on the need to run the digital transformation process in parallel with the digital adaptation process of the company/organization.

KEYWORDS: CRM, e-CRM, digital transformation, CRM trends

ABSTRAKT

In den letzten beiden Jahrzehnten des vergangenen Jahrhunderts und in den ersten beiden Jahrzehnten des laufenden Jahrhunderts wurde CRM sowohl in globalen Unternehmen als auch in kleinen Betrieben allgegenwärtig. Dieser Prozess geht weiter und verändert sich. Mit der vorliegenden Arbeit möchte ich diesen Wandel, den ich als den Übergang von CRM zu e-CRM bezeichne, identifizieren und beleuchten. Daher charakterisiere ich zu Beginn die Schlüsselbegriffe für die Entwicklung und erörtere dann die Gemeinsamkeiten und Unterschiede zwischen Digitalisierung, Digitalisierung und digitaler Transformation. Weiter geht es mit einer Analyse der digitalen Transformation und ihrer wichtigsten Prinzipien und Prozesse. Hier betone ich, wie bei vielen anderen Transformationen in Unternehmen/Organisationen auch, die Notwendigkeit, eine "agile Organisation" zu werden und ihre spezifische digitale Kultur anzupassen. In diesem Zusammenhang vergleiche ich die Merkmale und ermittle die Gemeinsamkeiten und Unterschiede zwischen CRM und e-CRM. Um all dies zu beleuchten, werden Fallstudien von Unternehmen herangezogen, die bei der digitalen Transformation und beim e-CRM führend sind. Abschließend ziehe ich eine Schlussfolgerung, in der ich den Schwerpunkt auf die Notwendigkeit lege, den digitalen Transformationsprozess parallel zum digitalen Anpassungsprozess des Unternehmens/der Organisation durchzuführen.

STICHWORTE: CRM, e-CRM, digitale Transformation, CRM-Trends

RÉSUMÉ

Les deux dernières décennies du siècle dernier et les deux premières décennies du siècle actuel ont permis à la gestion de la relation client (CRM) de devenir omniprésente, tant dans les entreprises internationales que dans les petites entreprises. Ce processus se poursuit et évolue. Avec le présent développement, je vise à identifier et à éclairer cette transformation, que j'identifie comme la transition du CRM à l'e-CRM. C'est pourquoi, dans un premier temps, je caractérise les concepts clés du développement, puis j'examine les similitudes et les différences entre la numérisation, la digitalisation et la transformation numérique. Nous poursuivons par une analyse de la transformation numérique et de ses principaux principes et processus. Ici, parallèlement à de nombreuses autres transformations de l'entreprise/organisation, je souligne la nécessité pour elle de devenir une "organisation agile" et d'adapter sa culture numérique spécifique. À cet égard, je compare les caractéristiques et identifie les similitudes et les différences entre le CRM et l'e-CRM. Pour éclairer tout cela, des études de cas d'entreprises - leaders en matière de transformation numérique et d'e-CRM - sont utilisées. Enfin, je termine par une conclusion dans laquelle je mets l'accent sur la nécessité de mener le processus de transformation numérique en parallèle avec le processus d'adaptation numérique de l'entreprise/organisation.

MOTS-CLÉS: CRM, e-CRM, transformation numérique, tendances CRM

INTRODUCTION

There are many interpretations of what constitutes digital transformation. This is due to several facts. The level and development of technologies are one of the prerequisites for this to happen, and they change at an extremely fast pace, which in turn leads to the constant modification of the understanding of the world of digital transformation. The readiness of each enterprise and the alternatives before it to undergo this transformation is the other aspect that nuances and constantly changes the term. However, the core of the concept remains largely unchanged – digital transformation is the process of using digital technologies to create new or modify existing business processes, culture and customer experience to meet changing business and market demands. It represents a complete rethinking of business in the digital age and goes beyond the traditional division of business structures such as sales, marketing and customer service. Instead, digital transformation begins and ends with how employees, processes and overall thinking are customer-centric and engaged in the brand-consumer-brand interaction.

As companies move from paper to spreadsheets and to smart business management applications, they have the chance to rethink how they do business, ie. how, through digital technologies, they engage their customers. In other words, to answer the question: How and in what do we change the corporate business model? "Any digital transformation will start and end with the customer, and I can see that on the mind of every single CEO who is reading or happens to be reading this right now." [Marc Benioff, CHAIRMAN and CO-CEO, SALESFORCE]

RESULTS AND DISCUSSION

In one of its articles, [McKinsey,2019], defines digital transformation as “an effort to activate existing business models by integrating advanced technologies”. It allows digital technologies to be integrated into already existing business models, changing the way a company makes and delivers its product or service. A study [McKinsey, Digital Quotient, 2019] shows that 93% of executives believe that digital technologies are critical to achieving their strategic goals.

In the same study, McKinsey also mentions that when considering a digital transformation for an organization, it is really important to prepare beforehand and answer the question: "How ready is the company for this step?" ". To reap the full benefits of transformation, the focus must be on three main dimensions (Fig.1):

Structure– the structure of the organization needs to be rethought. Of fundamental importance is whether the company has a chief digital officer, whether it has one main unit that centrally shapes digital operations or will be decentralized, and whether the existing structure is flexible enough or whether a change to a more value-oriented agile configuration will be necessary.

People -when it comes to people, the questions that need to be asked are about utilizing existing employees. Initially, whether they have the necessary skills to take the company through a digital transformation. How does the company plan to build a capable team - by hiring talent externally or through a series of trainings for people internally?

Processes –do the current processes meet the needs of a full-fledged digital transformation process with which the organization works. Depending on the answer, it is possible that the company needs some rethinking, because every single change has a direct or indirect impact on the financial results. In order not to have a negative effect, it is possible to decide that the changes will happen gradually rather than all at once.



Figure 1. Main directions for preparing for digital transformation. Source: [Ruskov and Boevski, 2022]

CRM strategy from the point of view of digital transformation. Today, the Internet is a significant economic and social force and has brought much more than just a technological revolution to the world of business. The Internet has changed the traditional business model of organizations and forced the majority of companies around the world to undertake a number of operational changes. The difference

between CRM and e-CRM is that e-CRM refers to electronic customer relationship management. Broadly speaking CRM that is targeted and located on the web.

The concept of CRM is defined as the process of acquiring, retaining and developing a profitable customer. This requires a clear focus on the service attributes that deliver real customer value and create loyalty. It is a comprehensive sales and marketing approach to build long-term customer relationship management and improve business performance. To be successful, the organization must better understand the needs of the users. It is important for the organization to understand these needs and be able to act quickly. This focus is critical in times when a customer can switch providers with the click of a mouse. From a technical perspective, CRM involves the collection and storage of customer data,

CRM initiatives are high risk and often fail to deliver the desired results. However, the success of initiatives must depend on senior management support, IT system integrations, employee training and significant customer data. This also requires adequate allocation of human, organizational and technological resources for CRM projects. Ideally, customer data should be collected from every transaction to improve the customer relationship. CRM systems enable two-way communication with the customer that can be used to further enhance the relationship. In addition, the spread of the Internet has largely enabled the evolution of CRM and the use of big data and artificial intelligence as promising avenues for future development.

E-CRM - Electronic Customer Relationship Management has the same general meaning and concept as CRM. Along with technological development, digital business continues to develop rapidly, which leads to changes in the operational management of the company's business, including in the process of building relationships with consumers. CRM change refers to the transformation of CRM to e-CRM to adapt to the digital consumer behavior of the current era. In addition, e-CRM is a company's strategy for building customer relationships online. According to [Richard and Feinberg, 2002], e-CRM is a comprehensive business and marketing strategy that relies on the use of the Internet. Additionally, e-CRM has emerged as a customer management process due to changes in consumer behavior when making online purchases. A more detailed definition of e-CRM is given by [Nicholas and Romano, 2015], stating that e-CRM is a combination of corporate management commitments to customer-related software, hardware, processes and applications. From these definitions it can be briefly said that e-CRM is a strategy similar to CRM but controlled through the Internet.

The ease of use of all Internet functions, online shopping and the variety of websites can increase consumer expectations of all online-based services and is directly influenced by how ease of use is perceived. Users' desire for everything to happen easily and quickly when it comes to technology makes e-CRM pay special attention when designing all the functions of a website. An e-commerce platform must be able to manage the website design and its features to build an e-CRM experience for its users. The shift in company activities from CRM to e-CRM brings benefits to both companies and consumers. This advantage generates a certain value for the e-CRM activities that companies have. It can be called e-CRM value. Several studies indicate that companies and consumers greatly benefit from improving the quality of e-CRM. The shift from CRM to e-CRM is driven by the need for company strategies to capture the value of e-CRM. For companies, e-CRM can eliminate or reduce the costs required to interact directly with consumers. In addition, it can save time and effort and reduce administrative and operational costs, which directly affect sales performance, by offering a lower price and improving the quality of user interaction, which is not limited by time and space, because the interaction can be carried out 24 hours a day without the need for direct involvement of the company. The shift from CRM to e-CRM is driven by the need for company strategies to capture the value of e-CRM. For companies, e-CRM can eliminate or reduce the

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Technological difference between CRM and e-CRM. There are significant technological differences between the conventional use of CRM and the electronic one:

Table 1. Benefits and Comparison of Traditional to Digital Marketing. Source: Developed from [Salesforce, 2017]

Традиционен маркетинг	Дигитален маркетинг	Ползи и въздействие върху бизнеса
Хартиени принт материали	Дигитални материали	Намалява разходите за печат и разпространение; способност за оценяване на потенциални клиенти въз основа на цифрови взаимодействия
Кампании с хартиени писма	Имейл кампании	Намалява пощенски разходи и разходи за печат; много по-висока степен на персонализация
Печатна / билборд реклама	Реклама в социалните мрежи	Персонализирано таргетиране; създаване на аудитории по сходство в поведението
Витрина на физически магазин	Уебсайт	Елиминира наема на пространство; по-добра достъпност и развитие
Физически карти за лоялност	Дигитални карти в приложения	Намалява разходите за печат и доставка; възможност за оферти в реално време; персонализирани оферти; push-известия

Within the scope of the research, I identified the following 10 trends:

Strategy 1. AI (artificial intelligence) is becoming a key part of CRM systems. If there's one thing that affects all industries, it's artificial intelligence (AI). We use a lot more of it than we realize in our daily life as well as at work. Software resources driven by artificial intelligence – programs for intuitive conversations with end customers to sales analytics platforms – are present in almost every industry that is based on SaaS solutions;

Strategy 2. Fewer barriers for first-time CRM adopters. According to LinkedIn's 2020 Official Report, 65% of sales professionals use a CRM and 97% consider technology to support sales to be "very important" or "important." However, a third of sales professionals still do not use a CRM. Common barriers to CRM adoption include reservations about cost and the lack of resources and technical knowledge to implement a CRM system. As the trend toward CRM systems becoming cheaper, easier to implement, and easier to use continues, these objections become increasingly irrelevant;

Strategy 3. Social CRM continues to grow. Social CRM is the integration of social media channels into CRM platforms. By looking at social media and CRM as a whole, companies gain a more powerful view of what people are posting on social media, as well as a clearer understanding of brand sentiment. If organizations can use social CRM to respond to comments quickly and thoughtfully, they can build stronger relationships with existing and potential customers and incorporate more user feedback into their customer journeys;

Strategy 4. Increasing variety of platforms. Customers choose from a diverse marketplace of over 650 CRM systems, with tools that meet both general needs and specific niches and requirements. According to a recent ranking published in a specialized publication (<https://www.g2.com/categories/crm>), the current leaders are: Salesforce Sales Cloud; Hub Spot Sales Hub; Active Campaign; Zoho; Freshsales; Pipedrive; Sharp; Spring; CopperKeep

Strategy 5. Businesses will automate more and more processes using their CRM. To keep up with highly technological customers, the best CRM systems must offer advanced automation features that do not require significant IT resources to integrate with various platforms and replace human activities.

Many of the top companies for such system solutions have invested heavily in automation over the past few years—including Hub Spot, Salesforce, and Active Campaign, which have placed automation at the center of their product portfolio and marketing. With the latest trends in the market, Hub Spot predicts that CRM will become synonymous with automation. For example, using chatbots to communicate with customers, automatically resolving tickets from robotic processes in customer service units, or using automated workflows to send emails to nurture the sales contact down the sales funnel (Fig. 1). With automation, businesses can offer high-quality customer service while optimizing operational costs—something that



Figure 1. Stages of the "Sales Funnel" in digital marketing. Source: Evan Bailyn, 2021

Strategy 6. CRM will offer a "high resolution" view of customers. Choosing a strong CRM and populating it with reliable data that is enriched by other applications is the easiest way for a company to

build a comprehensive view of its customers. According to LinkedIn's 2020 State of Sales Report, top-performing salespeople have more confidence in their CRM data than their peers. Of the top group, 53% are very confident, and below that group, only 32% are only confident. This shows a direct correlation between sales performance and high-quality data that comes from taking the time to maintain data cleanliness and integrity.

Strategy 7. CRM is intertwined with IoT technologies. From smart home devices to portable health monitors and cybersecurity scanners, there are expected to be more than 64 billion IoT devices worldwide by 2025, according to a recent publication in a specialist publication [TechJury, 2022]. This also applies to the corporate world, according to a recent publication in a specialized edition (<https://techjury.net/blog/internet-of-things-statistics/#gref>) and 93% of enterprises have adopted IoT technology in 2019, which will continue in the coming years. Such type of IoT devices range from electricity meters and smart appliances, to more advanced solutions for greater cost efficiency, organizational capabilities and supply chain visibility. Customer experience will improve in industries where most businesses use data generated by IoT solutions.

Strategy 8. CRM will not only be used by customer-facing teams. CRM platforms are traditionally thought of as a tool for sales teams and customer service teams. Times are changing and CRM is now an important part of the technology set of platforms used by the majority of teams in the company. In 2022, more organizations will realize that CRM is beneficial for everything. Marketers can use CRM to better understand touchpoints in their process and monitor whether all digital tools are delivering results and driving sales. Customer service teams have access to a 360-degree view of the customer to provide the most personalized experience. Management has access to valuable performance data across teams and channels.

Strategy 9. Consumers will expect companies to know more and more about them. The business-customer relationship increasingly resembles any other human relationship. A company must remember previous conversations with a customer, understand their needs and expectations, and adjust communication accordingly. To make this possible, all necessary customer data must be quickly accessible and accurate. This is not always guaranteed. 87% of consumers believe that companies should provide a more consistent customer experience. Having a CRM as part of a connected technology stack is the best way to fix this as it allows different team members to store customer data on all previous conversations and known preferences.

Strategy 10. Even small companies will be big enough for CRM. 28% of Millennials believe (<https://99firms.com/blog/crm-statistics/#gref>) that CRM applications are “extremely critical” to their success, compared to 18% of Gen Xers and 9% of Baby Boomers. This CRM trend will grow as millennials and Gen Z continue to gain purchasing power and the next generations enter and fill the workplace. Over the next decade, more teams will become technology-centric and push to maximize productivity through intelligent CRM technology.

CONCLUSION

CRM allows companies to align their strategy with customer needs to best meet those needs and thus secure long-term customer loyalty. For any business, the successful implementation and management of CRM is becoming increasingly important in today's competitive commercial and business world. Customer expectations are always growing, and business services must grow along with those expectations. Business and commerce, combined with a successful CRM strategy, achieve a better understanding of customer needs, which in turn helps unify all communication channels and marketing

tools and focus them in the "customer" direction and offer personalized offers. This in turn creates a competitive advantage that will increase sales, customer satisfaction and the success of companies in the telecommunications industry. The use of CRM technology is serious and critical to keeping costs low as well as to cope with the pace of digitalization and market development.

For the transformation to e-CRM to occur, it is necessary for companies to focus more and more on the "digital customer", which requires the use of e-CRM, which in turn requires an adaptive change of the overall culture and strategy of the corporation/organization. as well as investing funds in the use of modern software solutions for processing large data sets.

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DISTRIBUTION MANAGEMENT OF AGRICULTURAL PRODUCTION

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ABSTRACT

Theoretical judgments lay the foundation of any research. In the present article, they outline the essence of the realization of agricultural products and allow to analyze the main ones features accompanying this process. Understanding the essence of the main types of agricultural production markets requires a characterization of each of them. In this sense, it is important to take into account the essence of a value chain in the agricultural sector, taking into account the peculiarities of agricultural production, the specificity of agricultural products, the entities through which production is realized, the demand for agricultural products, the organization of production and the realization of production and the management process itself in agricultural holdings.

KEYWORDS: distribution management, agricultural production, farm management

ABSTRAKT

Theoretische Urteile bilden die Grundlage jeder Forschung. Im vorliegenden Artikel wird das Wesen der Verwertung landwirtschaftlicher Erzeugnisse umrissen, und es werden die wichtigsten Merkmale dieses Prozesses analysiert. Um das Wesen der wichtigsten Arten von Märkten für landwirtschaftliche Erzeugnisse zu verstehen, muss jeder einzelne von ihnen charakterisiert werden. In diesem Sinne ist es wichtig, das Wesen einer Wertschöpfungskette im Agrarsektor zu berücksichtigen, unter Berücksichtigung der Besonderheiten der landwirtschaftlichen Produktion, der Spezifität der landwirtschaftlichen Produkte, der Einheiten, durch die die Produktion realisiert wird, der Nachfrage nach landwirtschaftlichen Produkten, der Organisation der Produktion und der Realisierung der Produktion und des Managementprozesses selbst in landwirtschaftlichen Betrieben.

STICHWORTE: Vertriebsmanagement, landwirtschaftliche Produktion, Betriebsführung

RÉSUMÉ

Les jugements théoriques constituent la base de toute recherche. Dans le présent article, ils exposent l'essence de la réalisation des produits agricoles et nous permettent d'analyser les principales caractéristiques qui accompagnent ce processus. Comprendre l'essence des principaux types de marchés de production agricole nécessite une caractérisation de chacun d'entre eux. Dans ce sens, il est important de prendre en compte l'essence d'une chaîne de valeur dans le secteur agricole, en tenant compte des particularités de la production agricole, de la spécificité des produits agricoles, des entités à travers lesquelles la production est réalisée, de la demande de produits agricoles, de l'organisation de la production et de la réalisation de la production et du processus de gestion lui-même dans les exploitations agricoles.

MOTS-CLÉS: gestion de la distribution, production agricole, gestion des exploitations agricoles

INTRODUCTION

The agricultural production system is a multifactorial open system, maintaining a stable dynamic equilibrium state through multiple connections of its constituent elements and interactions with other systems of the environment. It functions in conditions of uncertainty, predetermined by the economic and ecological factors of the individual microdistricts of the country [Kolaj, Borisov, Osmani, and Arabska, 2022]. These features predetermine the essence of the agricultural production system. It can be defined as a complex of interconnected and subordinated to varying degrees natural, biological, material, technical and other elements, combined (combined) in a complex dynamic unity, ensuring the production of agricultural products through the implementation of many interconnected processes [Borisov, & Popova, 2021]. The specificity of the agricultural production system is determined, on the one hand, by the features of its constituent elements and their combinations, and on the other by the interaction of the system itself with its surrounding environment [Kolaj, Borisov, Osmani, Arabska, Radev, 2021]. The immobility of the production base is the main prerequisite for the mobility of the means of labor, in contrast to other industries, where the subject of labor is more often the object of transportation [Kolaj, Borisov, Osmani and Arabska, 2022].

RESULTS AND DISCUSSIONS

The restructuring of agricultural holdings is a relatively long process for most countries in the EU, but for Bulgaria the rates of change in the structure of agricultural holdings are one of the most significant [Radev, Borisov and Miladinovski, 2019]. According to data from the 2020 census, the number of agricultural holdings in Bulgaria meeting the threshold criteria specified in the Law on the Census of Agricultural Holdings in the Republic of Bulgaria in 2020 is 132,400 (graph 1), which is 64% less than the number reported during the 2010 census.

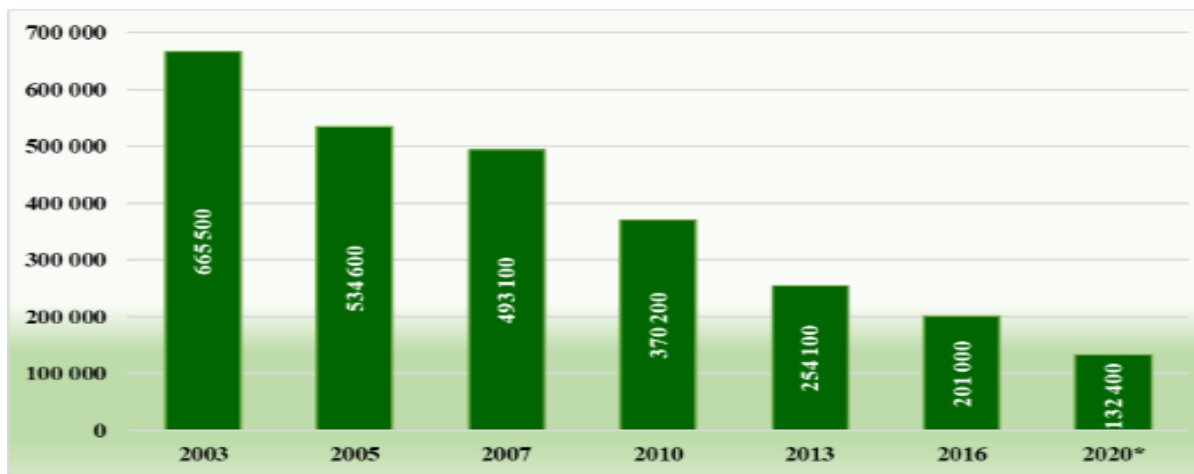


Figure 1. Number of agricultural holdings by year. Source: "Agrostatistics" MZHG – Bulgaria

In 2003, their absolute number was 665,548, and in 2010 – 370,222 in number, with the predominance of small and medium-sized farms. In 2020, they are only 132,633 farms. Of the total number of farms, 13,440 do not farm land. The submitted applications for support with direct area payments for 2020 are 57,822 in number, or this represents 44 percent of the total number of agricultural holdings in the country.

The total number of farms managing agricultural areas in 2020 is 119,193, which represents a drop of 67 percent compared to 2010. For the period under review, a significant increase in the used agricultural area (UAA) was registered. In 2003, the EPA was in the amount of 2,904,480 ha. After the country's accession to the EU, the interest in expanding the area of farms was significant and, accordingly, within three years, the agricultural area reached 3,616,965 ha (+25%). The average land size for holdings increased from 4 to 10 ha in 2010. This is a result of both an increase in arable land (+17%) and permanently grassed areas (+256%). In 2020, the average size of holdings reached 33 ha.

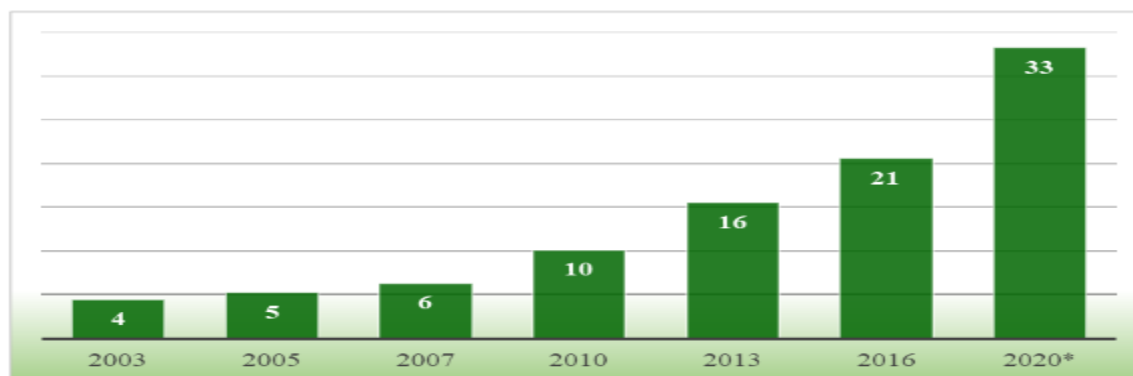


Figure 2. Average arable are of holdings with land (ha). Source: "Agrostatistics" MZHG – Bulgaria

In 2020, the agricultural area managed by agricultural holdings reached 3,959 thousand ha and increased by 9% compared to 2010 and by 34% compared to 2003. The average FZ of agricultural holdings with land increased to 33 ha, compared to 10 ha reported in 2010 (graph 2).

Economic activity in agriculture can be considered as a process in which a person interacts with nature to create material goods and at the same time interacts with other people in carrying out this process. The process is based on the creation of consumer value and its realization on the market. Therefore, agricultural economic activity includes two interrelated activities [Boevsky, 2020]. One is directly related to the attraction and use of resources to obtain a final product. And another activity refers to offering the product on the market and facilitating their consumption by considering the specifics of the market. These two activities are dynamic in nature and it is imperative that they be coordinated in order to achieve the objective of the business activity. These activities are subject to management by the agricultural producer to overcome the differences between the desired and the actual state of economic activity. Management is decision-making for the rational use of resources to achieve certain goals. Management is a process that is carried out under the influence of the results of already implemented decisions and their evaluation by the agricultural producer. In order to form his assessment, the owner (manager) must know well the structure and functioning of the farm (the object of management) and the purpose of its existence. This is a condition for clearly defining criteria for business development. Having an appropriate evaluation criterion allows, once development options have been developed,

In the process of making management decisions, the agricultural producer proceeds from the understanding that his economic activity is determined by consumer demand and, in the long term, should be considered as satisfying needs [Borisov, P., T. Radev (2020)]. Concentrating the producer's attention solely on the production process will limit his opportunities to participate in the supply of consumer value

in the marketing chain, but it is also a possible farm management strategy [Yovchevska, 2015]. Each agricultural holding has its own characteristics that have an impact on the organization and management of economic activity. Most often these are the type of product produced, the geographic location of the farm, the markets served, the technology used, the management philosophy and the market image of the farm.

The analysis of the production potential of the agricultural holding is an important prerequisite when developing a strategy for the realization of the production. In this context, a number of questions should be answered:

- what is the technological level of production;
- what resources does the farm have;
- what is the nature of the proceedings;
- can production be diversified;
- what production and economic results the agricultural holding achieves;
- what is the quality of the manufactured product and what criteria are used to determine the quality;
- what are the fixed and variable costs associated with each production and how are they managed over time.

The human factor is an integral part of any economic activity and is often of key importance for the successful functioning of the agricultural holding. In this sense, the qualities of the farmer and his philosophy on how to manage his farm are important in making management decisions. When assessing the potential of the agricultural producer, the purpose of his economic activity, his experience, his technological knowledge, knowledge of consumer behavior, his ability to motivate, his attitude towards economic entities in the marketing chain, interest in innovation are taken into account.

The market is the starting point for any economic activity and determines the parameters in which the agricultural holding functions. Each market has its own characteristics that must be known by the farmer [Stoeva, Valcheva, 2016]. Also, the market is not static and changes in it create both new opportunities for the development of economic activity and threats to its existence in the long term. Market analysis involves estimating the size and trends of the market, describing the agricultural customers (their location, their needs, their price sensitivity, their market power and market image), identifying the profile of the target segment (age , gender, social status of consumers, how often and where they buy the product, what qualities of the product shape the consumer's purchase decision).



Figure 3. Stages in the process of agricultural management. Source: own

Changes in market conditions require a corresponding change in the strategic and ongoing management of the farm [Nikolov, Anastasova, Radev, Borisov, 2015]. The strategy must have the flexibility to take account of uncertainty and the conditions under which it develops and to allow for changes when necessary. In modern market conditions, where market demand is a critical factor for agricultural business development, it is imperative to conduct regular research and analysis of market requirements.

When making management decisions related to the realization of agricultural production as a starting point for market analysis, it is appropriate to apply Michael Porter's model for determining competition in market segments and their attractiveness and potential for development.

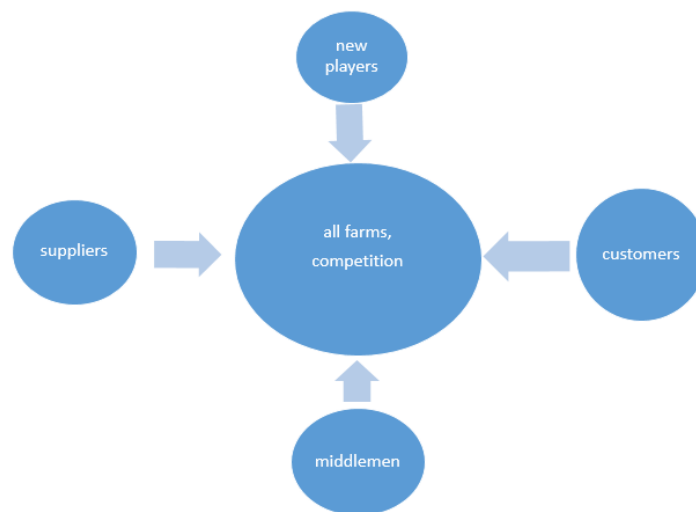


Figure 4. Factors Affecting the Type and Degree of Competition. Source: [Borisov, P., T. Radev, D. Nikolov (2019)].

First of all, the strength of competition of the farms in the market segment, producers of the product, must be analyzed. The presence of a large number of manufacturers makes the competition very strong and the market not particularly attractive due to low profits. Conversely, the monopoly position of the farm gives many advantages. In addition, it is also important how the competition is conducted on the basis of price or on the basis of other product characteristics. For smaller farms, markets are more attractive, where they get advantages not from cost reduction, but from achieving higher quality. Distribution channels aim precisely to deliver these benefits to buyers.

Another important factor, buyers also have influence through their ability to influence the cost of realization, trying to reduce it by raising their quality requirements or pitting farms against each other. This usually occurs when buyers are larger and organized, the market is undifferentiated, and products occupy a large relative share of buyer spending. A good practice in such a case is for farms to unite and lead a common marketing policy and shorten the supply chain.

Products will be available for purchase by end users only if certain activities have been performed to move them. These activities are the essence of distribution and their skillful management is an

important prerequisite for market success. Intermediaries realize the production of the producers and to a certain extent ease their activity. The farmer must analyze the advantages and disadvantages, the benefits and losses of using different intermediaries and consider what distribution strategy to use.

Suppliers are companies that supply (deliver) the necessary goods, raw materials and materials to ensure the production process. A marketing policy aimed at collecting the necessary information, comparison and selection of the offered prices, term of delivery and their quality, terms and methods of payments, additional services, etc. must be conducted with them. Thus, each farm has a selective attitude towards suppliers.

The possibility of new entrants entering the market determines the dynamic nature of the market. In many of the markets of agricultural products (tomatoes, peppers, cucumbers, salads, potatoes), the access of new participants is very easy, which in certain years attracts many producers, thus increasing competition and lowering prices. In other productions (fruit, animal breeding) larger investments and periods are needed for their absorption, which is a kind of investment barrier and prevents a rapid change of the established competition.

The business environment has a significant impact on the development of agricultural activity. This is because each farm operates within the conditions imposed by its business environment.

These conditions are determined by many factors that are external to agricultural holdings. Characteristic of these factors is that they are always dynamic. Therefore, changes in the business environment create conditions for success, but also for uncertainty and threat. Although the future is unpredictable, marketers must be able to determine what is most likely to happen. Entrepreneurs who fail to respond to changes in the business environment leave agriculture unprepared to deal with the changes that occur, which can lead to undesirable results. Therefore, monitoring the business environment factors is vitally important for the survival of the agricultural holding and the achievement of its long-term goals. To keep up with the changes in the marketing environment, marketers will need to perform scanning and analysis.

Scanning the marketing environment is the process of gathering information about the factors of that environment. It includes monitoring secondary sources such as: business, trade, government and other publications and marketing research. It is necessary to determine well what information they need, since not always a lot of information allows accurate conclusions to be drawn.

Analysis of the marketing environment is a process of evaluating and integrating the collected information [Dirimanova, Radev, 2017]. Through it, farmers must be able to determine the upcoming changes, which in turn are the likely threats and opportunities for the functioning of the agricultural holding. All this helps to assess the marketing conditions at the moment and develop a marketing strategy for the future. Marketers offer two general approaches to react to changes in the marketing environment [Nikolov, Boevsky, Borisov, Radev, 2020]. One of them makes it possible to consider the factors of the marketing environment as completely uncontrollable and difficult to predict. In this approach, farms are passive towards the environment. In the second approach, they approach the environment aggressively and attempt to influence the factors determining the marketing environment. It cannot be said which approach is better and successful. The choice of one or the other is influenced and depends on the management philosophy of the farmer, on the goals, financial possibilities, markets, skills, etc.

The task of marketing is to study the market in the most detail and analyze the results obtained for making adequate management decisions by the agricultural producer.

CONCLUSIONS

The management of agricultural holdings in the realization of production must be in accordance with the specifics of the market factors that have a direct connection with the agricultural holding. In this regard, every agricultural holding must study the behavior of consumers in order to attract them. For this purpose, it is appropriate to develop a system of characteristics and indicators by which the market is divided in terms of consumers. Knowing them facilitates the selection of the marketing policy and is especially important when making decisions about the marketing strategy.

Depending on the type of buyers, two types of markets are defined: consumer and industrial. The differentiation of the consumer and industrial market is very important in the realization of the product. The customers of the two markets have different behavior, which requires the application of a different marketing mix, including and distribution solutions. The goal is to find good customers who pay well and on time, appreciating the value of the product offered.

Expanding the market presence is possible using the achievements of the scientific and technical environment. Studying the possibilities of the modern scientific and technical environment is an important prerequisite for the success of agricultural holdings. It is necessary to analyze the technological innovations and changes that have a huge impact on the way of life, on the behavior of consumers and their preferences. Of particular importance are modern means of communication, which can facilitate activities for the sale of agricultural products.

Also for the understanding and knowledge of the market environment, the culture of the participants in the marketing chain occupies an important place. In a sense, culture means the traditions, mores, customs, religion, education, preferences, way of making buying decisions, etc. Each market is characterized by some generally accepted value system that influences the behavior patterns of each individual buyer.

In conclusion to the questions asked, it should be noted that the factors of the marketing environment should be studied, analyzed and evaluated as favorable or not. Moreover, these factors are always dynamic, which is why it is necessary to monitor changes and especially trends in their development.

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METHODOLOGICAL APPROACH FOR GAINING COMPETITIVENESS ON THE MARKET OF AGRICULTURAL PRODUCTS

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ABSTRACT

The environment or business environment has a significant impact on the development of economic activity. This is because every business organization operates under the conditions imposed by its environment. These conditions are determined by many factors, which can be divided into two groups, internal and external. Characteristic of these factors is that they are always dynamic.

The purpose of the article is to clarify the specifics of market structures for agricultural products and the possibilities for differentiating agricultural products.

Analyzing the market environment is a process of evaluating and integrating the collected information. Through it, the entrepreneur must be able to determine the upcoming changes, which in turn are the likely threats and opportunities for the company. All this helps the farmer to assess the market conditions at the moment and develop a marketing strategy for the future.

KEYWORDS: competitiveness, market power, agricultural products

ABSTRAKT

Die Umwelt oder das Unternehmensumfeld hat einen erheblichen Einfluss auf die Entwicklung der Wirtschaftstätigkeit. Das liegt daran, dass jedes Unternehmen unter den Bedingungen arbeitet, die ihm von seinem Umfeld auferlegt werden. Diese Bedingungen werden von vielen Faktoren bestimmt, die in zwei Gruppen unterteilt werden können: interne und externe. Charakteristisch für diese Faktoren ist, dass sie stets dynamisch sind.

Ziel des Artikels ist es, die Besonderheiten der Marktstrukturen für landwirtschaftliche Erzeugnisse und die Möglichkeiten zur Differenzierung landwirtschaftlicher Erzeugnisse zu klären.

Die Analyse des Marktumfelds ist ein Prozess der Auswertung und Integration der gesammelten Informationen. Dadurch muss der Unternehmer in der Lage sein, die bevorstehenden Veränderungen zu bestimmen, die wiederum die wahrscheinlichen Bedrohungen und Chancen für das Unternehmen darstellen. All dies hilft dem Landwirt, die gegenwärtigen Marktbedingungen zu beurteilen und eine Marketingstrategie für die Zukunft zu entwickeln.

Stichworte: Wettbewerbsfähigkeit, Marktmacht, landwirtschaftliche Erzeugnisse

RÉSUMÉ

L'environnement ou l'environnement des entreprises a un impact significatif sur le développement de l'activité économique. En effet, chaque entreprise fonctionne dans les conditions imposées par son environnement. Ces conditions sont déterminées par de nombreux facteurs, qui peuvent être divisés en deux groupes : les facteurs internes et les facteurs externes. La caractéristique de ces facteurs est qu'ils sont toujours dynamiques.

L'objectif de cet article est de clarifier les spécificités des structures du marché des produits agricoles et les possibilités de différenciation des produits agricoles.

L'analyse de l'environnement du marché est un processus d'évaluation et d'intégration des informations recueillies. Grâce à elle, l'entrepreneur doit être en mesure de déterminer les changements à venir, qui constituent à leur tour les menaces et les opportunités probables pour l'entreprise. Tout cela aide l'agriculteur à évaluer les conditions actuelles du marché et à élaborer une stratégie de marketing pour l'avenir.

MOTS-CLÉS: compétitivité, pouvoir de marché, produits agricoles

INTRODUCTION

The environment or business environment has a significant impact on the development of economic activity. This is because every business organization operates under the conditions imposed by its environment [Borisov and Radev, 2020]. These conditions are determined by many factors, which can be divided into two groups, internal and external [Borisov, 2021]. Characteristic of these factors is that they are always dynamic.

The purpose of the article is to clarify the specifics of market structures for agricultural products and the possibilities for differentiating agricultural products.

Analyzing the market environment is a process of evaluating and integrating the collected information. Through it, the entrepreneur must be able to determine the upcoming changes, which in turn are the likely threats and opportunities for the company. All this helps the farmer to assess the market conditions at the moment and develop a marketing strategy for the future [Borisov and Miladinovski, 2022].

RESULTS AND DISCUSSION

The environment or business environment has a significant impact on the development of economic activity. This is because every business organization operates under the conditions imposed by its environment. These conditions are determined by many factors, which can be divided into two groups, internal and external. Characteristic of these factors is that they are always dynamic [Rezeal, Borisov, Radev, and Osmani, 2019]. Therefore, for business organizations, changes in the market environment create conditions for success, but also for uncertainty and threat. Despite the fact that the future is unpredictable, entrepreneurs estimate the likelihood of certain changes occurring. Farmers who fail to respond to changes in the market environment leave their business unprepared to deal with the changes that occur, which can lead to undesirable results [Radev, Borisov and Miladinovski, 2019]. Therefore, the monitoring of market subjects is of vital importance for the functioning of agricultural holdings and for the achievement of their long-term goals. To monitor changes in the market environment, entrepreneurs perform scanning and analysis [Borisov and Radev, 2020]. Scanning the market environment is the process of gathering information about the factors of that environment. It includes monitoring secondary sources such as: business, trade, government and other publications and marketing research. It is necessary to determine well what information they need, since not always a lot of information allows accurate conclusions to be drawn [Borisov and Garabedian, 2020]. Analyzing the market environment is a process of evaluating and integrating the collected information. Through it, the entrepreneur must be able to determine the upcoming changes, which in turn are the likely threats and opportunities for the company.

Two general approaches to responding to changes in the market environment are described in the literature [Borisov, Stoeva and Dirimanova (2021)]. One of them makes it possible to consider the

subjects of the market environment as completely uncontrollable and difficult to predict. In this approach, business organizations are passive towards the environment. In the second approach, they treat the environment aggressively and try to influence the entities determining the specifics of the market environment. Can't say which approach is better. The choice of one or the other is influenced and depends on the entrepreneur's philosophy, goals, financial capabilities, skills, etc. The task of the farmer is to study the market subjects in the most detail and, based on the results, make the right management decisions.

Internal factors. These are the factors that are amenable to management by the agricultural producer and are formed by the behavior of the personnel, the production processes, the finances of the agricultural holding. These factors are grouped into strengths and weaknesses. If an element has a positive impact on the company, it is considered a strength. If one factor hinders the company's development, it is a weakness. Internal factors determine how the organization progresses, both as an independent organizational unit and in response to the external environment.

The staff is an important factor with the help of which the set goals of the business organization are realized. It is obvious that the range of different qualifications to be taken into account in the selection of workers on a given farm can be very wide. This is because the activity in the production and sale of the product is, by its very nature, work with people and information. In this regard, the entrepreneur must monitor, report and exercise the motivation of his employees. The employees who join are very important. If managed properly, they can change the politics of the organization. However, poor staff management can lead to a disastrous situation for the company.

The production of a product requires the application of a certain technology. Technology is a set of methods and means to achieve a desired result; a way of converting the given into the necessary. Questions related to the used machines, equipment, tools, raw materials and materials are resolved here. Manufacturing is part of a complex process that depends on raw materials, human capital and labor, and the capacity to produce goods and services to meet people's needs according to demand. and their supply.

The finances of the agricultural holding ensure its activity and its opportunities for development. In this sense, financial resources are an important prerequisite for the successful implementation of the planned economic activities. That is why it is important that the finances of the agricultural holding are well managed.

External factors (microenvironment). These are market entities that have a direct relationship with agriculture - suppliers, intermediaries, competitors and customers. Every company functions under certain external conditions that make demands on its behavior. The consideration, consideration and adjustment of the company's activity to these conditions are essential for its further development. They have a significant impact on her chances of survival and her prospects, while she can hardly influence the nature of the changes in her. That is why it is very important for every company to study the emerging and forecast possible changes in the environment, to evaluate the favorable opportunities and threats that they bring to it. As a result, it can and should develop strategies for adapting to and changing these conditions. The company's environment is a set of all external forces, actions and conditions that affect its ability to fulfill contractual obligations, to improve its relations with consumers, as well as its opportunities for future development. These external factors, forces and conditions are the elements of the environment. On the layer side, it is composed of micro and macro environment.

The microenvironment consists of the firm's immediate surroundings that affect its ability to serve its markets.

Suppliers are companies, organizations or individual legal entities that supply the business organization with the necessary raw materials, materials and services. A marketing policy aimed at collecting the necessary information, comparison and selection of the offered prices, term of delivery and their quality, terms and methods of payments, additional services, etc. must be conducted with them. In this way, the individual firm has a selective attitude towards suppliers. Organizations get the resources they need through a network of suppliers. But some have one supplier and others have many. Therefore, they are to varying degrees dependent on the provider.

Suppliers pose a threat or source of stress to an industry primarily through the ability to raise prices or lower the quality of the goods and services they supply. Strong suppliers can "squeeze" profitability into a particular business if it is unable to cover its increased costs with price increases. The company must determine and analyze the number of its suppliers, motivate the reasons for using their services and production. It is necessary to highlight the advantages and disadvantages of the applied procurement and inventory management systems.

We distinguish several varieties of the supplier factor.

Material suppliers - the company is dependent on the quantity, quality, volume, price and delivery time.

Providers of financial resources - for a company to prosper, it needs not only materials, but also capital. Hence its dependence on government funding programs, banks, shareholders and private individuals.

Labor suppliers and labor market - without people capable of effectively using complex technology, materials and capital with a specific task, a firm cannot prosper. It needs highly qualified specialists.

Intermediaries are companies, organizations and legal entities that are mainly related to the realization of the product. Here it is necessary to note that the intermediaries realize the production of the producers and to some extent facilitate his activity. This requires special attention to management decisions related to the choice of sales channels and work with market intermediaries. Intermediaries are a traditional and widespread form of customer market access. Manufacturers need their services when entering a new market, when distributing a new product, as well as when it is necessary to optimize distribution costs. From the point of view of the criterion of ownership of the product they market, intermediary companies are divided into: commercial intermediaries, physical distributors,

Proprietary traders buy the manufacturer's products on the basis of a brokerage contract in order to sell them for their own profit. Very often these intermediaries act as wholesalers (distributors). Also, resellers can be retailers (dealers) who sell on their own behalf and at their expense the products purchased from the manufacturer or from the wholesaler to end users. The second large group of intermediaries, also called functional intermediaries, includes the variety of agents who do not acquire ownership of the products they offer or buy for their customers. These include commission agents, consignors, commercial representatives, brokers, factors and others.

Competitors are business entities that have oriented their activities towards the same customers. They offer similar products, therefore it is necessary to determine the main competitors and know their

potential (size, goals, financing) and marketing strategy (market share, product assortment, product quality, pricing strategies and other characteristics suitable for understanding their market behavior). In today's conditions, every manager should know that if he does not satisfy the needs of his buyers at least as much as they are satisfied by competitors, the organization will not stay afloat for long. Often, not only consumers but also competitors determine what to sell and at what price.

It is necessary to identify the main competitors of a company in the country and abroad, their goods and services, price policy and market share. Important questions are:

- Studying their market - what part of their activity is competitive with the company, what is their share of the market, how is it distributed geographically, what changes are expected over time, who are the users of their products and why
- The study of their production activity - capacities, plants, enterprises, divisions, sizes, location, flexible automated production systems, costs of raw materials, production costs, etc.
- Study of technological resources (patents, know-how) and human resources
- Study of competitors' marketing activity - system for studying the market, assortment, prices, service, distribution channels, advertising, employment.
- Financial status of competitors - own and borrowed funds, long-term and short-term investment, liquidity of funds, depreciation policy.

The customers are the ones who buy the products produced in the farms. In this regard, the farmer must study consumer behavior in order to win them over as regular buyers (customers). For this purpose, a system of user characteristics and indicators is used, through which the market is divided into parts. Knowing them facilitates the selection of the marketing policy and is especially important when making decisions about the marketing strategy. The goal is to find a good customer (buyer) who pays well and on time, expanding their own markets and appreciating the importance of the products offered.

Table 1. User research features and metrics. Source: [Dietel, 1992]

Characteristic of the separation on the market	User features	
	General	Specific
A. Objective	1. Demographic factors: /gender, age, profession, education, standard of living, place of residence/ 2. Socio-economic factors /volume of consumption, income, traditions, etc./	1. Method of consumption – often, occasionally in large quantities, in small quantities, in medium quantities 2. Loyalty to certain commodity signs - brand, stores, method of sale and purchase
B. Subjective	3. Characteristic personality traits 4. Lifestyle	3. Way of buying behavior - determination, indecision, neutrality, phlegmatic, etc. 4. Reaction of the marketing means – price, advertising, who makes the purchase decision and who implements it, etc.

External factors (macro environment). In the field of business, the study of the elements determining the external market environment (macro-environment) acquires special importance. They are the following: demographic, economic, natural and ecological, political, scientific and technical, legal, cultural and competition. The specified elements of the external market environment cannot be controlled by the business organization, but it must comply with them in order to successfully achieve its goals.

Demographic conditions need to be known, because the market consists primarily of people. The processes of fertility, mortality, aging, changing characteristics of the family are some of the most important factors directly related to the size of the market. Changing demographic conditions are having a major impact on demand. For example, an increase in the population of a country always leads to an increase in the demand for food products and everything related to their production. Their producers will always have a better chance of exporting there than in countries where the population is declining.

Market demographic analysis is very important because population is one of the main components of any market. Therefore, special attention should be paid to demographic characteristics.

The potential of the market in a given country is also determined by current incomes, production prices, the volume of savings, the possibilities of obtaining credits and others. Their parameters depend on the economic conditions and the created economic mechanism, which to a very large extent influence the so-called solvent demand. It also depends on the inflation rate, growth rates, unemployment, interest rates, etc. In this regard, economic conditions must be constantly analyzed in order to implement a correct marketing policy in business.

The main criterion for measuring the market potential is the reliability of the researched data, which should be checked with at least one additional source to confirm their legitimacy.

Some of the methods used to research market potential are:

- Statistical information
- Statistical studies of legitimate market research organizations
- Own market research of target audience by creating surveys and questionnaires
- SWOT
- How they position themselves in the market
- Competitive products and differences with them
- Problems that different products solve
- Customer benefits of different products
- Factors in customer decision making
- Key Selling Points

The most reliable method of measuring market potential is the official statistics, but with a comment that it must give reliable information, and this is possible only if correct source information is available, which is a component of these statistics.

The influence of natural and environmental factors has grown a lot in recent years. They are related to the climatic and geographical conditions, the distribution of natural resources and the production of ecologically clean products. Increasingly, these conditions are associated as part of human activities contributing to environmental pollution and damage to the human organism. Therefore, natural

and environmental issues occupy an increasingly important place in the study and analysis of the market environment.

Political conditions reflect political stability, ethnic and religious relations. A particularly important condition for companies involved in international business is the study of the international political situation. For a given country, the level of government, lifestyle, economic policy and capital are analyzed. Last but not least, the influence of social and professional groups, public organizations, science, etc. must also be taken into account. on political decision-making.

Studying the scientific and technical environment is an important prerequisite for the success of business organizations. It is necessary to analyze technological innovations and changes that have a huge impact, both on production processes and on the way of life and behavior of consumers and their preferences. Of particular importance are the legal regulations regulating the performance of the relevant activities in each country. In order to assess that there are prerequisites for actively entering a new market, the company and its marketers must thoroughly study the system of legal norms relating to the production, import and trade of the relevant goods in the given market.

In terms of understanding and knowing the external market environment, culture occupies a particularly important place. Broadly speaking, culture means traditions, mores, customs, religion, education, preferences, the way buying decisions are made, etc. Every country is characterised by some commonly accepted value system which influences the ways in which each individual behaves. It is a well-known fact that in order to gain a good position on the international market it is necessary to know the so-called potential customers in detail. In practice, business organisations and especially those in international business deploy their activities in a marketing environment full of competitors. One of the tasks of every business actor is to know, observe and try to outperform their competitors. This activity is directed towards the market in order to satisfy needs. It is known that anyone who serves the same needs appears as a competitor. In conclusion to the issues raised, it should be noted that the factors of the market environment should be studied, analysed and evaluated as favourable or otherwise. Moreover, these factors are always dynamic, which is why it is necessary to monitor changes and especially trends in their development. The main characteristic of a public environment is its composition. In a marketing sense, it is determined by various individuals and public groups who are interested in the economic activity of companies and can seriously influence their development. These are representatives of local and central government, banking circles, trade unions, associations, chambers of commerce, journalists, politicians, etc., who shape public opinion. In this regard, companies must conduct and maintain good contacts with the specified persons and public groups (Public relations). Through these contacts, companies strive to create a good image among the public. A specific place in the Public Relations system is occupied by the statements that companies also perform important public functions, influencing their future marketing positions.

Depending on the organization of the market, the behavior of the main market entities is predetermined. The behavior of the entrepreneur is determined depending on the number of companies that offer production on a given market, on the nature of the produced production, on the freedom of access to the market. Knowledge of market organization helps to explain the behavior of firms selling their products and to make predictions about reactions to changes in market conditions.

Several conditions must be present for a market to be defined as perfectly competitive. Conditions affect the behavior of each farm and the nature of the industry in which it operates.

In perfect competition, the producer has no control over price. It can raise or lower the rate of production and sales without having an effect on the cost of the output sold. The individual producer receives the market price of his output as a result of the general demand and supply of a uniform product. The competitive market is made up of a large number of producers who have a small share in the industry, therefore they cannot influence the market price.

Farmers produce uniform products. Therefore, there are perfect substitutes for buyers, so the producer must comply with the market price in order not to lose all his buyers. The demand curve for agricultural products is a horizontal line at the market price level, i.e. demand is perfectly elastic. The decisions made by the individual entrepreneur do not depend on the decisions of the other companies in the industry. Firms are related only through the given market price and therefore perfect competition is defined as price competition.

The industry can be entered and exited.

New entrepreneurs are attracted by the assumption that incumbent firms will make good profits. When a firm exits the industry it simply stops producing due to insufficient profits and due to incurred losses.

CONCLUSION

Market structure shows those characteristics of the market affecting the behavior of firms and determine the relationship between the market demand curve and the supply of the product of an individual firm.

Market organization reflects the way an industry is structured. By industry we understand the set of companies producing the same or uniform product.

The market organization, which is related to the structure of the agricultural sector, can be described by the following characteristics:

- many and relatively small farmers;
- the product is most often standard, with a low degree of differentiation;
- there is no ability of an individual farm to influence the price of production;
- free entry and exit from the market, as the free access of competitors determines the dynamic size of the industry.

The market structure of the agricultural sector is characterized by a high degree of competitiveness, which determines the weak influence of individual producers on the market. The structure of the market is more competitive and its influence on the behavior of each producer is often critical.

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TRENDS IN THE MODERNIZATION OF PLOVDIV AND PAZARDZHIC AGGLOMERATION AREAS INTO INNOVATIVE ECONOMIC CENTERS AND SMART CITY

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ABSTRACT

This article focuses on the need to develop agglomeration areas through innovative development and the imposition of the model of smart settlements. The purpose of these development policies is to achieve the integration of information and communication technologies, use of human and social capital to improve the quality of life of citizens and achieve sustainable economic development. The focus of the article predetermines the need for the settlements of the Plovdiv-Pazardzhik agglomeration area to achieve a high level of intelligent management. Through the introduction of electronic management, user-oriented administrative services are implemented, and the convenience and safety of electronic services are implemented in every way. Fostering collaboration between the public and private sectors and city dwellers is key to developing smart citizens who will be engaged and empowered to make positive contributions to their cities and communities.

KEYWORDS: model, information, intelligent management, integration, regional, areal

ABSTRAKT

Dieser Artikel befasst sich mit der Notwendigkeit, Ballungsräume durch innovative Entwicklung und die Einführung des Modells der intelligenten Siedlungen zu entwickeln. Das Ziel dieser Entwicklungspolitik ist die Integration von Informations- und Kommunikationstechnologien, die Nutzung von Human- und Sozialkapital zur Verbesserung der Lebensqualität der Bürger und eine nachhaltige wirtschaftliche Entwicklung. Im Mittelpunkt des Artikels steht die Notwendigkeit, dass die Siedlungen des Ballungsraumes Plovdiv-Pazardzhik ein hohes Maß an intelligenter Verwaltung erreichen. Durch die Einführung der elektronischen Verwaltung werden nutzerorientierte Verwaltungsdienstleistungen implementiert und der Komfort und die Sicherheit elektronischer Dienstleistungen in jeder Hinsicht umgesetzt. Die Förderung der Zusammenarbeit zwischen dem öffentlichen und privaten Sektor und den Stadtbewohnern ist der Schlüssel zur Entwicklung intelligenter Bürger, die sich engagieren und befähigt werden, einen positiven Beitrag zu ihren Städten und Gemeinden zu leisten.

STICHWORTE: Modell, Information, intelligente Verwaltung, Integration, regional, räumlich

RÉSUMÉ

Cet article se concentre sur la nécessité de développer les zones d'agglomération par le biais d'un développement innovant et de l'imposition du modèle des établissements intelligents. L'objectif de ces politiques de développement est de parvenir à l'intégration des technologies de l'information et de la communication, à l'utilisation du capital humain et social afin d'améliorer la qualité de vie des citoyens et

de parvenir à un développement économique durable. L'objet de l'article est de déterminer la nécessité pour les établissements de la zone d'agglomération de Plovdiv-Pazardzhik d'atteindre un niveau élevé de gestion intelligente. Grâce à l'introduction de la gestion électronique, des services administratifs orientés vers l'utilisateur sont mis en place, et la commodité et la sécurité des services électroniques sont mises en œuvre de toutes les manières possibles. La promotion de la collaboration entre les secteurs public et privé et les citoyens est essentielle pour développer des citoyens intelligents qui seront engagés et habilités à apporter des contributions positives à leur ville et à leur communauté.

MOTS-CLÉS: modèle, information, gestion intelligente, intégration, régional, local

INTRODUCTION

Modernization goes through the introduction of new technologies and their management in order to create a new labour market that will bring new occupations and new industries to the forefront of the 21st century economy. According to leading experts in urban studies, the development of cities is conditioned on the development of urbanism as the platform and smart cities are some of the trends in engagement cities in digital [Petrov, 2021]. This predetermines that, in addition to the ongoing processes of modernization and optimization of the level of urban development in cities and their areas, the application of the smart city model is required. Thus, according to the understanding of the European Parliament, the idea of a smart city means the development and integration of information and communication technologies, the use of human and social capital to improve the quality of life of citizens and to achieve sustainable economic development. This approach also has a dedicated Digital Europe (2021-2027). programme, which focuses on the digital future. According to its contents, the main priority areas are supercomputing, artificial intelligence, cyber defence, advanced digital skills, etc. Cities and urbanized areas in the Asenovgrad-Plovdiv-Pazardzhik direction are specific territorial formations that are characterized by a high degree of dynamism in development and variability over a relatively small distance. These are the territories carrying the growth, concentrating the main growth factors - human resources, investments, technologies, etc. On the other hand, these growth generators are also the source of the manifestation of social and economic problems in a concentrated form on small territories [Vassileva, 2018]. These characteristics of cities make them a kind of priority in regional policy. Thus, in practice, the modernization of urbanization between Plovdiv and Pazardzhik goes in search of innovative solutions in the field of connectivity, infrastructure, ecology, shared resources, transport, energy, education, etc. Which in practice means the need for an integrated type of territorial management based on the practical-applicational field of innovation and modern technologies. In this direction, it is necessary for the territory to have the necessary level of intelligent specialisation. The authors Lyubomirova and Tsolov define smart specialization as an approach to regional development guided by the strengths of the region/territory/urban agglomeration/municipality [Lyubomirova and Tsolov, 2022]. This approach should of course build on the In this context, the design of regional strategies and policies should take into account analyses of the level of development of the region between Pazardzhik and Plovdiv, which can be expressed through a number of elements of economic potential, but can also be expressed through analyses of the overall competitiveness of the region (as measured by the degree of qualification of the territory) or the competitiveness of the regional supply of goods and services. Given that a region can be defined by the interaction of its structure, behaviour and functionality within a general system, we can consider the region as a complex subsystem characterised by a series of specific or common variables.

These variables can be input or set variables, state variables characterizing the behavior of the subsystem at a given time or over a given period, and output or set variables [Georgiev, 2022]. Between these variables, which can be grouped according to certain criteria, there are a number of relations and relationships, causal or functional relationships. The development of the functional nature of regional development can be argued by laying down a model of the Plovdiv-Pazardzhik mega-agglomeration area, which should strive for a smart city model. Through this aspiration, the Asenovgrad-Plovdiv-Pazardzhik area is able to successfully solve the multitude of public problems through solutions based on the latest technologies and through partnerships between citizens, academic organizations, businesses, municipalities and public administration. When talking about such a large spatial area, at least six "smart or intelligent" dimensions are usually mentioned: economy, mobility, environment, lifestyle, people and urban governance. These dimensions are manifested through the model of "sharing economy". This economy has already begun to underpin the business models embedded in modern cities, and knowledge is gradually becoming the most valuable capital and growth factor of any modern city. The smart city or municipality uses information and communication technologies to increase operational efficiency, share information with the public, and improve the quality of government services and the well-being of citizens.

RESULTS AND DISCUSSION

Planning and development of innovative development and smart villages. Planning focused on urban design as a means to develop healthy cities and smart living. A positive trend in this direction is the creation of a common tourism product first with municipalities such as Plovdiv, Velingrad, Panagyurishte from the South Central region offering rural, ecological, hunting, fishing tourism (Pazardzhik), urban, cultural and congress tourism (Plovdiv) and spa and balneo tourism (Velingrad). This shows that the development of individual industries helps to develop the Asenovgrad-Plovdiv-Pazardzhik agglomeration area with its subsystems for creating smart living - smart home, provision of basic services, education, health security, culture and tourism (standard of living). With a modern smart economy dominated by small and medium enterprises, green technologies and jobs, innovative local industry and business (competitiveness). Imposing in the Asenovgrad-Plovdiv-Pazardzhik area a smart environment achieving emission reduction, green and open spaces, green buildings with efficient use of natural resources, water management, waste management, disaster risk management (sustainability). Also smart mobility - environmentally friendly modes of transport such as cycling, pedestrian access, alternative fuel vehicles, reducing congestion, providing logistical information (connectivity). Achieving high levels of smart energy through renewable energy resources, energy efficiency, smart grids, smart meters, fuel cell energy storage (energy efficiency). Enforce the educated people model with modern local schools for human and social resources, universities, schools, business communities, adolescents, social integration, social cohesion (knowledge). Last but not least, imposing in the Plovdiv-Pazardzhik area a model of smart governance that rests on a mechanism of communication between local government and residents of e-government, open data centers with transparent data, community consultation (participation).

In this direction, it is necessary to work to achieve social cohesion and reduce regional disparities in the social sphere by creating conditions for human capital development. This involves drawing up a balanced territorial development by strengthening the network of urban centres, improving connectivity

in the regions and the quality of the environment in the settlements [Evrev, 2018]. In this direction, the construction of the Kableshkovo Intermediate Terminal between Plovdiv and Pazardzhik is important. The aim is to free the road network from heavy loads and to develop rail transport. The terminal is co-financed by the European Regional Development Fund through the Operational Programme Transport. It is located on an area of 71 450 sq. m. in the area of Todor Kableshkov railway station and is part of Plovdiv railway junction. It is built on the route of the Kalotina-Sofia-Plovdiv-Dimitrovgrad-Svilengrad railway, part of the European corridor connecting Europe and Asia. The distance from Pazardzhik to Plovdiv along the railway line will be covered in less than 20 minutes at a speed of 160-200 km/h. This will ensure the movement of passengers and freight in this section much faster. Modern communication and telecommunication has been built, which ensures a good level of security.

Another important project is the creation of an urban railway in the direction Asenovgrad - Plovdiv Airport - Plovdiv - Pazardzhik. This will be done by building three rings, the first is the construction of the main ring of the urban railway, the second - the construction of connections to individual settlements, and the third ring will serve the settlements in the direction Plovdiv - Stamboliiski - Pazardzhik - Septemvri. The first ring will have 13 stops will have the city railway station of Plovdiv - railway station Asenovgrad, Mavrudovo, Krumovo (crossing to airport Plovdiv), Southeast industrial zone (in the area of the former plant "Piščešišti stroje"), Central railway station Plovdiv, Pehstersko shose (in the area of the store Kaufland), bul. "Sixth of September (in the area of the station "Пловдив"), District Hospital, Filippovo railway station, Industrial zone Voyvodinovo (industrial zone), Skutare (industrial zone), Ravadinovo, Benkovski. The second ring will connect the municipalities of Plovdiv, "Rodopi", "Maritsa", Asenovgrad and Kyklön and has a chance to be the first railway in the country. The third ring is to create conditions for this railway to be joined by the Plovdiv-Peshtera and Plovdiv-Pazardzhik lines by including a number of smaller settlements in order to create effective connectivity in the Asenovgrad-Plovdiv-Pazardzhik agglomeration area.

The modernization of Plovdiv Airport could also be an important project. Investments in Plovdiv airport are necessary, especially after the increasing interest in the airport from aviation operators and low-fare airlines that are entering the country as a result of the liberalisation of the air transport sector after EU membership. The passenger terminal at Plovdiv Airport meets passenger service standards but needs upgrading and further strengthening of its capacity. At present, Plovdiv Airport is in the process of developing its customer portfolio, placing the most significant emphasis on the expansion of the aviation route network. The aim is not only to increase the volume of flights during the active winter season, taking into account the period of transformation of the aviation business, but also to attract year-round scheduled flights. At the same time, we believe that the professional support of the tourism industry and the local authorities will be necessary to build a quality and effective marketing strategy for the development of aviation services at Plovdiv Airport. Achieving these goals will inevitably lead to the promotion of other business opportunities for us, expansion of commercial non-aviation activities, attraction of new partners and [Yovcheva, 2012].

The construction of the South-Eastern Bypass of Plovdiv /from the Karaulkata of Plovdiv to Skobeleva Maika/ and the South-Western Bypass of Plovdiv /the old Ring Road to the Trakia Highway/ is of great importance for the connectivity to Plovdiv Airport and other settlements to it. A structural determinant for the economy of the region and the state is also the enterprise "KCM" JSC, which together

with the developing economic zones "Trakiya" and "Maritsa", where the automotive parts factories are being built at an accelerated pace, define Plovdiv as a center for serious investments. All this contributes to the increase in freight and passenger traffic on the existing road network, which is almost at capacity. The design gauge of the section from the Skobeleva Mama junction to the roundabout with Asenovgradskoe Shose should be G20. The road will thus be classified as an expressway with a maximum speed of 120 km/h. One is for drainage and hydraulic calculations of trenches and the other is for an overpass over the Burgas railway at km 102+115.02 (railway km 161+050). After the completion of the south-eastern ring road (Route II-56 "Brezovo - Plovdiv - Route II-86", section from km 90+000 to km 102+820), it will be possible for freight traffic to reach the newly built intermodal railway terminal near Plovdiv.

Important for the agglomeration area Pazardzhik-Plovdiv is also the construction of the Western bypass of Pazardzhik, which will start at km 123 of the secondary road II-37 Panagyurishte - Pazardzhik - Peshtera before the northern entrance of the town of Pazardzhik /from Panagyurishte/ and will end at km 128+900 of the secondary road, before the village of Glavinitsa. With the construction of the bypass, the heavy traffic coming from the Trakia motorway will move out of the town centre. This will increase traffic safety for commuters by avoiding entering the district town. There will be four major facilities on the Western Bypass of Pazardzhik. It is planned to build a bridge over an irrigation canal and an overpass over the railway line Sofia - Plovdiv. A new right lane will be built on the bridge over the Maritza River, and the existing left lane, built in 1995-96 and 205 m long, will be rehabilitated. The other major structure on the bypass is an existing bridge over a drainage channel. In the longer term, a project for the design and construction of an eastern bypass from the I-8 main road to the II-37 secondary road around Pazardzhik should be considered. Construction of local lanes on the main road I-8 in the section from the town of Pazardzhik. Pazardzhik to the village of. Malo Konare". Also construction of local lanes on Second class road II-37 in the section from Pazardzhik to the Trakia motorway junction.

Another important aspect is the experience in the Plovdiv-Pazardzhi agglomeration area to develop new technologies leading to competitive advantages and increasing the added value of national products and services in the field of healthy living industry and biotechnologies. The healthy living and biotechnology industry in the field of plant science is developing rapidly in the Plovdiv-Pazardzhik area. In recent years, the HORIZON 2020 project "PlantaSyst" has been implemented by the Institute of Molecular Biology and Biotechnology - Plovdiv (IMBB) and partners.

The potential for rural tourism and traditional handicrafts remains untapped, as does the creation of a common tourism product for the South Central Region offering sightseeing, rural, ecological, hunting and fishing tourism (Pazardzhik municipality), urban and cultural tourism (Plovdiv municipality) and spa and wellness tourism (Velingrad, Bratsigovo, Rakitovo municipalities, etc.). In general, in the area of Pazardzhik-Plovdiv there is a need to improve the capacity of local entrepreneurship to apply for EU operational programmes, which would provide good funds for modernisation, especially in the sectors of agriculture, textiles and tourism.

Modeling of industrial zones in agglomeration area of Plovdiv- Pazardzhik. The industrial zones are also important for the development of the Plovdiv-Pazardzhik agglomeration area. There are several zones located in the area. The leading one is the Thrace Economic Zone (TIZ), which is an industrial-commercial zone in the Plovdiv area and one of the largest economic projects in Bulgaria. The TIZ covers

a total area of 10 700 000 m², of which 3 250 000 m² are built-up. The zone comprises six industrial zones around Plovdiv, where projects worth over EUR 1 billion have been implemented by Bulgarian and foreign companies. As of 2015, the TIZ employed over 30,000 people. The Rakovsky Industrial Zone was created through a public-private partnership in Rakovsky was born in Italy when the then mayor of Rakovsky, Franz Kokov, visited the country's economic zone together with a business delegation. A few months later, the Municipality of Rakovski organised an auction for 815 acres of municipal land. The bid was won by the Plovdiv construction company "Syenit". The company has experience in the construction of factories, having previously built production facilities in the Maritsa zone near the Plovdiv village of Radinovo. Other zones are Industrial and Commercial Zone Kuklen, Agrocenter Kaloyanovo, High Technology Innovation Park Trakia, Educational and High Technology Park-Plovdiv and Industrial and Commercial Zone Maritsa. The important significance of these industrial zones is that they will promote the regional development of the Plovdiv-Pazardzhik agglomeration mainly in two directions - first, thousands of new jobs will be created for highly and low-skilled personnel from Plovdiv and the region. And secondly - the presence of large investors means that gradually in the city and surrounding municipalities will develop companies from small and medium-sized businesses as subcontractors and suppliers at the local level, are categorical representatives of business and state institutions. Once large companies enter the zone, they are joined by their partners and supporting industries, thus creating the backbone of small and medium-sized businesses [Kolev, 2008]. Economic zones can be developed and expanded, which will lead to even better opportunities in the logistics sector. Very soon, much better developed rail transport will also be available. This will shorten the supply route, which is currently a major problem. There is also the concept of carbon neutrality in the last mile of deliveries. This includes plans to build buffer depots in the periphery and rely only on electric transport in the centre. For example, the Thrace Economic Zone has even more ambitious plans for carbon neutrality. It is planned that 45% of the energy used in the zone will come from renewable sources in 2025, 60% in 2030 and full neutrality will be achieved in 2040. In the "Thrace Economic Zone" it is planned to build an "EU-China New Economy Cooperation Pilot Zone - Plovdiv" - an innovative public platform for business, logistics, finance, direct connection between consumer and producer, for online and offline trade. This comprehensive platform, bringing together the markets of Asia and Europe, aims at price competitiveness of goods and higher turnover [Kalinkov, 1999].

The food industry is important for the Plovdiv-Pazardjik area. This sector has a wide production specialization - meat processing, dairy processing, fruit and vegetable processing (canning), milling, production of confectionery, beer, soft drinks, cigarettes and others. The development of the sector is linked to the favourable opportunities provided by the city as a market for production and the availability of suitable raw material resources. The food industry is the leading industry in the Plovdiv region, accounting for around 30% of total production in the region. The industry has the highest relative share in the production of food products, beverages and tobacco products, which account for 24.4% of the net revenues of the industry in the region. In addition, the essential oil processing industry is highly developed on the territory of the Plovdiv-Pazardzhik area. Large and smaller companies engaged in similar activities [Kalinkov and Kalchev, 2007]. Due to its favourable geographical location and well-supplied infrastructure, the extraction and processing of essential oils in the district is extremely well developed and provides opportunities for intensive production processes in line with the application of the latest technologies in

this industry. Companies involved in medical and pharmaceutical activities and manufacturing are also strongly represented, accounting for about 14.4% of the net industry revenues in the region.

The development of economic spatial clusters (zones) in the Plovdiv-Pazardzhik area is the other fragment leading to competitive advantages and increasing the added value of products and services in the field of new technologies in all sectors of the economy. The focus is in the direction of imposing new innovations and practices [Kalinkov and Kalchev, 2007]. In this direction, a number of pilot projects are being implemented in the municipality of Plovdiv. A case in point is the implementation of the Smart Parking Meter concept, which uses an app to help drivers find available parking spaces without a lengthy detour through crowded city streets. A step in this direction is its full application in the municipalities of Plovdiv and Pazardzhik, where paying for parking in the city centre is also possible via SMS. In transport, smart traffic management involves monitoring and analysing flows in order to optimise the operation of streetlights and to prevent congestion on roadways based on busy times. In Plovdiv and Pazardzhik, since 2017, a "Traffic Management Center" has been operating, in order to achieve optimal traffic control, the intersections in Plovdiv are divided into separate groups, which in different parts of the city are managed by different methods, namely:

- By synchronizing the traffic lights on the main avenues and the traffic in the different time zones, a green wave is provided in certain directions;
- for single intersections in the city, an own automatic control cycle is achieved by traffic detectors;
- the dispatch centre for the control and management of urban bus routes ensures a better quality of service for citizens.

Smart cities also need smart governance. By implementing e-government, the user is put at the centre of administrative services, taking all possible measures to achieve convenience and security when using electronic services [Lyubomirova and Tsolov, 2022]. It promotes: the effectiveness and efficiency of services by increasing the return on investment, creating an environment of administrative accountability and transparency in the provision of e-services and in the decision-making process, enhancing user confidence in e-security and improving the protection of their data and rights in a digital environment. The main objective of smart digital technologies in the field of state and municipal government is to increase the share of residents receiving state and municipal services electronically. E-government requires not a literal electrification of existing administrative services, but a complete re-engineering of work processes. This implies that all administrations should model their administrative service processes with the aim of moving towards providing them automatically and electronically [Mladenov, C., E. Dimitrov, 2009]. The proven effects of e-government are the reduction of the administrative burden for citizens and businesses, the simplification and streamlining of administrative workflows in the provision of administrative services, service-oriented automated data and information exchange that "follow" the user, fully electronic document exchange that reduces document turnover and eliminates the risk of document loss/destruction, etc. With the national e-ID scheme in production mode, the user becomes identifiable to the systems and receives electronic administrative services efficiently and effectively. This means that administrations collect the data, information and evidence they need ex officio and, by providing services based on automated processes, orient the results of administrative services towards the user. National e-government policies are conducive to the development of cross-

border e-services that citizens and businesses need when travelling, working, studying or doing business within the EU[Mehandjiev and Ovcharova, 2013].

Smart public transport in smart cities, provides public transport that meets consumer demand. Smart transit companies coordinate services and meet citizens' needs in real time, improving efficiency and making them as convenient and efficient as possible. The project "Plovdiv Intelligent Transport Systems" implemented by the Traffic Management Center for a total cost of BGN 6,223,620 including VAT as part of Plovdiv's major transport project has its difficulties and satisfactory sustainability. On the other hand, a traffic management system including new traffic controllers with advanced technology, traffic detectors at strategic locations, traffic light displays and devices including a system for giving priority to buses serving the mass public transport, CCTV system at specific locations, sub-systems and equipment for the traffic management centre were constructed and implemented within the project. Adjustments were made at 50 intersections to provide an accessible environment for the public, including people with disabilities[Mladenov and Dimitrov, 2010].

Bicycle rental is a possible public service in a smart city that saves time, money and emissions. In this respect, a 48-kilometre bicycle lane network has been built in Plovdiv through the Operational Programme Regional Development (OPRD) 2007-2013, which has contributed to a significant increase in the number of citizens opting for the greener alternative transport. And since 2021, through a memorandum of cooperation between the Municipality of Plovdiv and a private company, citizens can use environmentally friendly transport, namely electric scooters. Due to the excellent results and appreciation of the citizens, in 2023 an electric bicycle system is expected to be operational.

Let us not forget the implementation of innovative technologies in tourism. The unique history and modern atmosphere of Plovdiv and Pazardjik make them a popular tourist destination for over 800,000 foreign tourists and Bulgarians every year. A modernization for easier access and targeting of tourists is the introduced "City Card" program. City Card is a digital platform that allows tourists to visit museums, galleries and other attractions, as well as places to eat and have fun, for free or at a discount, using their digital card called Plovdiv City Card. In less than a year, the Plovdiv City Card has helped increase tourist traffic to key sites by 10% - especially museums, galleries and tours, through a platform that has worked equally well for tourists and the municipal enterprise. The digitised Plovdiv City Card product also helped drive attention and traffic to the city through targeted marketing efforts and content. The smart city concept is increasingly being used to improve public safety by monitoring high crime areas and improving emergency preparedness with sensors. Smart sensors can be critical components of an early warning system before natural events such as earthquakes, floods, landslides or hurricanes.

Smart buildings are also part of the One Smart City project. The introduction of digital smart technologies in construction and housing and utilities is an important prospect to increase the efficiency of the design, construction and operation of real estate sites, to ensure high-quality planning of settlements, housing and services provided in the housing and utilities sector, and to increase market transparency for end users. Existing infrastructure can be upgraded and new buildings built with sensors that not only provide real-time space management and ensure public safety, but also monitor the structural health of buildings. Attaching sensors to buildings and other structures can detect wear and tear and notify officials when repairs are needed. Citizens should be proactive and notify officials, via a smart city app, when repairs are needed to buildings and public infrastructure such as potholes. Sensors

can also be used to detect leaks in water mains and other pipe systems, helping to reduce costs and improve efficiency for public workers. Smart city technologies also contribute to the efficiency of urban production and urban agriculture, including job creation, energy efficiency, space management and fresher goods for consumers. Smart city initiatives must involve the people they aim to support: residents, workers and visitors [Nikolov, 2016]. City leaders must not only raise awareness of the benefits of smart city technologies being implemented, but also promote the use of open and democratized data for their citizens. If people know what they are participating in and the benefits they can contribute, they are more likely to engage and become active in the creation of such cities. Fostering collaboration between the public and private sectors and city residents is the key to creating a smart citizenry that will be engaged and empowered, and will contribute positively to the city and community. New and innovative methods of collaboration can improve engagement. Smart city projects should include plans to make citizen engagement transparent and accessible, often through an open data portal or mobile app. This allows residents to engage with the data and understand what it is being used for and what is being done. Through the smart city app, residents can also perform personal tasks, such as monitoring their home energy consumption, paying bills and finding efficient public transport(13). In this respect, the municipality of Plovdiv is implementing a system from the beginning of 2023 that will allow passengers to charge with mobile apps, debit and credit cards. In this way, there will be a much greater control over compliance with public transport timetables.

Of course, there are also risks in smart cities, such as city managers not maintaining data privacy and security, possible exposure of the data that citizens produce on a daily basis, risk of hacking or misuse. The presence of sensors and cameras could be perceived as an invasion of privacy or as government surveillance. To prevent this, city data collected should be anonymized and not be personal information.

Resilience is a key aspect of smart cities... In this direction, the cities of Plovdiv and Pazardzhik could think about more fully deploying the use of IoT-enabled sensors and cameras to monitor the cleanliness of public spaces, the density of moving people and the movement of locally registered cars. Its smart technologies will help companies and residents monitor energy use, production waste and water use in real time. For example, Narrowband IoT (NB-IoT) technology could make inroads in Plovdiv and Pazardzhik. It is a technology standard that connects a wide range of devices, machines and services using cellular telecommunication technologies. The main advantages of the technology are lower device costs, longer battery life, better indoor coverage, optimized data transmission, two-way communication, low latency, high connection security and quality of service. The air monitoring solution detects pollution and particulate levels, and also measures temperature and humidity. The system is applicable for indoor and outdoor spaces and the information is monitored using a web-based application. With the solution, municipalities will have real-time information on air quality. The smart waste management service is suitable for municipalities and waste collection companies. With the help of sensors, it automatically identifies how full the garbage containers are. The system offers automated route calculations and navigation based on information analysis and also offers a garbage collection report to customers [Petrov, 2009]. Its use saves time resources and financially can reduce up to 70% of garbage collection costs. The smart lighting system uses LED modules to optimise the control of street lights, automatically adjusting the degree of illumination throughout the day. The modules are compatible with existing lighting poles and are easy to adapt. The use of smart lighting using Narrowband IoT technology improves living

conditions in urban areas and reduces annual costs by up to 25%. The Narrowband IoT smart parking solution detects available parking spaces, enables online parking space reservation, automatically determines the shortest route to the available space and performs cashless transactions in pay zones. The system performs centralised monitoring, taking into account parking trends, occupancy rates and violations. Its implementation improves the occupancy of parking spaces by up to 25% and increases the collection of revenue from violations by up to 20% per year in all settlements of the Plovdiv-Pazardzhik agglomeration. Plovdiv is also thinking about the gradual enforcement of autonomous vehicles, which are complemented by smart bus stops that provide free Wi-Fi, USB charging stations and bus information updates for citizens. A bike sharing program and a smart parking app that includes online payment options are also available. At the same time, building a smart municipal agency will also allow Plovdiv and Pazardzhik to actively use sensors to monitor temperature, pollution and noise, as well as monitor humidity and rain levels, regulate traffic and more.. For example, the implementation of smart bulbs in Plovdiv and Pazardzhik are used to increase the energy efficiency of street lighting, and increasingly the home, which can help to protect the home, turn an ordinary light switch into a dimmer, and much more. Some of these bulbs require a one-time purchase of a small control hub, which must be plugged into the current and control up to 50 of these smart bulbs. Smart doorbells allow one to see who is outside the home even when we are not home, using a camera that allows a connection to the person at the door. When someone rings, the host receives a video call on the phone. He can answer or completely ignore the call, and if he has a smart lock he can even open without being in his home. Most popular smart security devices use a motion detector to notify when someone is at the door. More and more companies are investing in developing innovative building materials that help builders around the world build homes that use less energy. Plovdiv has joined the General Assembly of the European Innovation Partnership on Smart Cities and Communities, or EIP-SCC for short. In practice, the EIP-SCC is one of five important tools to create a common European smart city market, focused on energy, mobility and integrated infrastructures and engaging with all sectors and all scales to create and ensure a growing, open and inclusive market. This initiative is starting to attract from across Europe representatives of the main market leaders to work together and want to offer integrated solutions leading to the growth of this market. But at the moment, smart city business models are severely hampered by factors such as a lack of public funds to cover the full investment [Petrov, 2021]. Also the way of outsourcing, the value system of the society and the increasing participation of the society in financing - e.g. crowdfunding, social media, etc. These factors create needs and opportunities for innovation in the Plovdiv-Pazardzhik agglomeration to develop and implement new approaches to manage and return on investments made in infrastructure and services. These changes affect all stakeholders, who need convincing evidence of the value and viability of using new business models. Active work with young people and the creation of employment opportunities is offered by the Centre for Social Innovation at the Municipality of Plovdiv. It is the first of its kind in Bulgaria and aims to reduce unemployment and bring young people back into public life. The Centre works with people between 15-29 years of age, and an important condition is that they are not engaged in employment, education or training. Its main goal is to unite all the services of the Municipality of Plovdiv at a single point of contact and thus facilitate young people in their contact with companies, organizations and foundations looking for employees, workers and/or trainees.

CONCLUSION

All initiatives and activities in innovative development will enable the Plovdiv-Pazardzhik area to gain experience that will allow for wider access to the European Union structural funds in order to be able to use these funds to attract and stimulate private investment through the application of appropriate and innovative business models and hybrid financing. There is also a need for a change in the attitude of investors and the way of dealing with them. Most investors characterise smart city investments as relatively small, too slow and too risky, and this is the case at this stage. A change in the mindset, expectations and way of working with private investors is needed, which means using appropriate business models and strengthening public-private partnerships. The city market is becoming one of the largest in the world, private investors cannot miss it just because it is more complex. To make this market attractive for direct investment, work needs to be done to reduce investment risk by increasing investor confidence in the return on investment in urban projects. This means involving the investment community early in the preparation and structuring of deals, ensuring knowledge transfer, building innovative commercial capabilities and innovative business processes in cities. Controlling diversity - applying standards Globally, the creation of smart cities is already in a 'maturity' phase and it is quite understandable that some cities benefit more and others less from the introduction of smart city technologies. The term "smart city" can be used for some world cities, but the opportunities for Plovdiv and Pazardzhik to join this group are not small at all. These cities should have the opportunity to study and apply best practices in creating smart cities and even contribute in testing or collaborating in offering innovations. Because cities like Plovdiv, Pazardzhik and their satellite cities and towns can be more flexible and faster in introducing individual solutions. Thus, through common action and inclusiveness, an extended investment market is created, and within the EU.

Winning over and engaging civil societies is particularly important to ensure higher investor confidence, although it is a process of multiple activities and initiatives at city level. Cities should try to plan the transformation process by setting fundamental smart objectives. In most cases, to achieve these goals and to account for the expected financial, social and environmental outcomes, cities need to make significant changes but public support is needed.

The initiators of the concept must therefore know public attitudes very well, understand them and use them to ensure active public engagement. These are city actions and initiatives that may not be directly visible to the investment community, but which are vital to the development of a smart city. A toolkit is needed to support cities in this endeavour and an example of such a toolkit is the Sofia City of Knowledge Cluster. But increasingly there needs to be an awareness and information campaign to make people understand and realise the essence of the Smart idea and Smart Cities. The concept needs to be embraced by the scientific community developing the ideas and technologies, by investors and implementers of smart solutions, by city governments, but also by the citizens using and living in these cities Citizens should feel free and comfortable, have security, but also space to develop their own qualities and creativity. In contrast to the above objective conditions, the Plovdiv-Pazardzhik agglomeration area has a very good potential for accelerated socio-economic development, determined also by the good condition of the settlement network - good infrastructure development, connectivity and accessibility of the territories, positive development of the social sphere and human resources, good

ecological condition, excellent geographical characteristics and the presence of numerous natural resources, rich history and cultural heritage.

Good interaction between local and central authorities with proven opportunities for the use of EU funds and programmes, etc. are factors which in the medium term create preconditions for calming internal and external migration processes, ensuring higher employment and income levels, higher natural population growth and balancing regional disparities. Thus, the improving state of the settlement network is one of the favourable preconditions for a balanced and sustainable development of the local community. Partnership frameworks should be intensified and diversified with innovative measures, necessarily including digital transformation of the public sector for the benefit of larger community groups, contributing to making information a key asset and improving digital connectivity. Digitalisation at the service of citizens and businesses and effective partnerships for resource sharing ensure the quality functioning of the Plovdiv-Pazardjik area in every partnership.

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