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*The many de facto existing intra-civilizational conflicts do not allow modern societies to achieve the necessary level of social harmony to ensure the civilizational prosperity so desired by all. The solution to the problem obviously lies in the search for technologies that, taken together, can ultimately lead to qualitative changes in the functioning of modern societies. Technologies that can lead to the emergence of a new generation of social quality can also be called new generation technologies. In this Issue of the Journal, we will talk about various technological approaches to solving various current problems, which, perhaps, may become such technologies of a new generation in the future.*

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**THE WAR IN UKRAINE AS AN INDICATOR OF THE MALFUNCTION OF  
SOCIAL ALGORITHMS IN THE MODERN WORLD**

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**Abstract**

The political bias of the judicial and expert community turns out to be a real problem in the modern world. The distortion of objective reality in the expert process, depending on the type of political system and the degree of independence of the subject of the examination, to one degree or another, paralyzes the ability of modern societies to objectively perceive and adequately solve problems in the existing geopolitical paradigm, which is a direct consequence of the bias of the expert community. In this regard, the search for such a socio-political structure of the institution of examination that would provide the necessary level of independence and objectivity of examination to ensure correct assessment and correct decision-making from the point of view of public interests is a critically important task of today. The solution to this problem, no more, no less, could allow modern civilization to move to a new level of social development by achieving the adequacy of modern societies in self-perception and solving the problem of building a socially harmonious civilization.

**Keywords:** social algorithms, expert community, expert decisions, political dominance, dominance of the procedural-legal form, populism, social values.

The problems of the modern world become more visual and understandable if it is presented as a set of social algorithms that predetermine cause-and-effect relationships and, as a consequence, the trajectory of socio-political and economic movement. If you approach the

analysis of problems of social and harmonious development using the algorithmic method of world perception, then you can more easily discover the problem of why many critical socio-political problems are very difficult to solve or they are not solved at all. This is a kind of algorithm that causes other algorithms to fail, which does not allow finding solutions to problems in the case where it is beneficial and existentially necessary for the survival of the dominant political elites and the maintenance of their political dominance. Such an algorithm is a social principle that separates the form and content of the process, in which the procedural and legal form dominates the functional content.

The dominance of the procedural-legal form over the functional content allows socio-political institutions that carry out procedural-political and procedural-legal functions to interpret the functional content from the point of view of the interests of those political forces that directly control these socio-political institutions at the time of their decision-making [1]. In essence, this is a technology for misleading society under the guise of various socio-political concepts and ideologies that underlie legal systems of justice, materializing these concepts and ideologies into socio-political practice in the interests of dominant political forces.

The modern world is conventionally divided into autocracies and democracies. Authorities are a political system in which the executive branch dominates the management of the political process, which allows it to maintain power of the social group that controls this power at a particular point in time. In other words, it is a system of mono-elite political domination. And this is all simple.

Democracy is much more complicated to deal with. Based on the separation and election of powers and on the principles of a market economy, the political concept of democracy claims that in this way the interests of the entire society are realized. And what does this look like from the point of view of an algorithmic function?

At general elections, representatives of various political concepts representing the interests of various political groups are elected to power, that is, a multi-elite government is formed [2]. In this way, a multi-elite society is formed [3], where elites are the dominant political force [4].

At the same time, those who are focused on promises of quick solutions to problems win, that is, populists who focus on solving short-term and current interests, often to the detriment of long-

term interests [5].

The principle of separation of powers does not allow the concentration of all power in the hands of only one political elite and maintains the political balance of political elites in power in proportion to the share of their political representation in power.

A market economy makes money and profit the dominant social value, which functionally places economic interests above social values [6].

What is the result? The result is a political system in which the political interests of multi-elites dominate in proportion to their political representation, aimed at obtaining economic benefits as quickly as possible.

How do judicial and expert institutions work? Their judicial decisions are limited by legal norms that materialize the democratic concept in a specific state variation, and their evaluative expert decisions interpret objective reality from the point of view of the political concept that cements the political system, that is, the objectivity of decision-making is limited by this political concept. It is this set of algorithms in making judicial and expert decisions that limits their objectivity, often making the entire political system blind or with a distorted perception of reality [7].

If we consider the problem of the war in Ukraine from the point of view of the algorithmic dysfunction of democracies' perception of reality, then it becomes completely clear why the role of the democratic world in the defense of Ukraine occurs exactly the way it does, and not in another way. And "Western weakness is playing directly into Putin's hands [8]".

From the point of view of objective socio-political analysis, it was absolutely clear already at the end of the 90s that as a result of the political process in Russia, there was a concentration of economic and political power in the hands of a social group close to the former Soviet intelligence services, focused on the extensive seizure of resources, and On December 31, 1999, political power passed to them de facto. "The imperialist policy of Russia was characteristic of both the Russian Empire and the Soviet Union. Imperial sentiments in Russian politics remain in demand in modern Russia. Russia remains one of the most armed countries in the world. [9]" From this date, the further political process in Russia was absolutely predictable - an extensive seizure of resources using forceful methods, initially within the country, and as complete control

was established over them within the country - outside the country, that is, through external aggression. Many scientists and experts warned about this, but the democratic world remained blind to the problem even despite the war in Chechnya, the occupation of part of Georgia in 2008, the annexation of Crimea and the occupation of parts of the Donetsk and Lugansk regions in 2014 [10].

The democratic world continued profitable economic cooperation with Russia, while simultaneously pumping Russia with investment and technology, including military technology, and promoting the development of its aggressive potential. It was only with the start of Russia's full-scale military invasion of Ukraine on February 24, 2022 that only some of the democratic elites began to perceive Russia as an existential threat to themselves, which prompted them to begin providing defense assistance to Ukraine. Despite everything that is happening in Ukraine, a significant part of the democratic elites continues to not see Russia's behavior as a threat to their current benefits, which creates an inter-elite split in the Western community regarding defensive assistance to Ukraine, making this assistance extremely limited, fragmented and not constant.

Such a problem of the behavior of democracies in conditions of local and global wars is not something new. Similar behavioral problems of democracies can be found in almost all military and civil conflicts since the emergence of democracy.

What could be the solution to the problem?

A radical way to solve the problem can only be the creation of a new generation of social technologies that could harmonize the social system at the algorithmic level. From the point of view of the current correction of the problem, there could be an institution of objective socio-political expertise, not biased with specific political systems, capable of competing with traditional biased expert institutions and delivering the results of objective examination and the conclusions arising from them to public platforms and to decision-making institutions. Such an algorithm of actions could significantly influence the ability of political systems to see problems and perceive them with minimal distortion, allowing executive bodies to make adequate decisions and timely actions.

As such an institution of objective expertise, we can imagine some version of an open global expert community that could arise as a result of relevant academic initiatives. Perhaps it is the



Ukrainian academic community, which finds itself in the critical realities of today, that may have the necessary energy for such an initiative, if we take into account that finding an effective way to mobilize resources for defense, including through the academic sphere, could contribute to the defense and the survival of an entire country.

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## **KAIROS-MANAGEMENT IS THE NEW META SKILL OF TODAY**

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### **Abstract**

The traditional division of skills into soft skills and professional skills is gradually becoming insufficient in modern management and education. In 2019, the term meta skills appeared, describing the basic cognitive competencies that determine a person's ability to learn and self-develop. These skills include social intelligence, which is the basis for a person's desire to gain new knowledge and learn experience. According to Ukrainian researchers, the new direction of

Kairos-management, or management of convenient opportunities, which represents a person's desire to more effectively use their potential and all additional abilities, skills, preferences, should be introduced to the number of meta skills competencies. In addition, kairos management is closely related to social intelligence, especially its structural components such as social information processing, social skills, and social awareness.

**Keywords:** kairos management, time management, soft skills, hard skills, meta skills, networking, creativity, kaizen.

### **Introduction**

The traditional division of skills into soft skills and professional skills is gradually becoming insufficient in modern management and education. The motivational scheme of personality development by P. Moss and S. Tilly, according to which soft skills, hard skills, personality and strong motivation must be developed in order to successfully realize a person's potential, needs to be supplemented [1]. In 2019, the term meta skills appeared, describing the basic cognitive competencies that determine a person's ability to learn and self-develop [11]. These skills include social intelligence, which is the basis for a person's desire to gain new knowledge and learn experience [2]. A person is subject to the laws of living nature and society, so he can be the master of his life only up to a certain point. Then the possessions of chance, fortunes begin. Trainings and teachings on increasing personal effectiveness of a person sometimes, on the contrary, bring disharmony and disappointment. Instead of constantly being in a state of pursuit of success and re-optimization, you should stop and carefully analyze your life. Perhaps what we long for is already close at hand. Thus, a person can learn to get the maximum benefit from what we already have, to actualize our own knowledge, skills, connections and opportunities.

In the theory of Time-management, there is a double interpretation of time — a stable "Chronos" and a changing "Kairos" or a lucky chance, a lucky moment. If the first follows steadily in the direction of the future, then the second from time to time provides a person with opportunities for success. Why passively wait for these lucky moments, if you can try to attract them yourself? This is the main idea of Kairos management as a direction of management activity and a new meta skill. This approach does not contradict Time-management, but I suggest that it expands one of its directions, related to the ability to organize one's life and activities in such a

way as to attract successful coincidences.

In fact, favorable moments surround us like the apples that hung on the tree above Newton's head. According to legend, one of these fruits contributed to the discovery of the Law of Attraction by its fall. But should we, like Newton, wait for "our apple", maybe it makes sense to "shake the apple tree"?

### **Literary review**

The author of this teaching, the Ukrainian scientist and writer Ihor Lyadsky, formed the concept of kairos management in 2017 based on the study of time management, networking, kaizen and creativity. The first publications were articles in a regional glossy magazine [8] and two scientific and pedagogical publications of Ukraine [6],[7]. Trainings and lectures were also held for pupils, students and scientific and pedagogical workers of various educational institutions of Ukraine with the aim of receiving feedback, possible criticism and correcting the shortcomings of the model. Then, for five years, the author of the methodology analyzed and systematized various soft skills to make kairos management more effective. A new stage of development of this idea began in 2022, when the theoretical basis of kairos management was supplemented by research on social intelligence [4]. Studying this topic has greatly enriched the understanding of Kairos management and its implementation. First, it was possible to establish a reliable connection between social intelligence and the desire to learn other soft skills, in particular time management [9]. Secondly, the theoretical basis of social intelligence supplemented the concept of kairos management with such concepts as social capital, social information processing, social skills and social awareness.

Kairos management is the art of finding good opportunities, the ability to see "bonuses" in absolutely insignificant events and facts. This phenomenon can be considered from the standpoint of self-management and team management. Past life experiences, acquired skills, friends, acquaintances, victories and even failures - literally everything can become a source of success. The ability to see these exits opens up significant competitive advantages over less perspicacious citizens. It is not necessary to contrast individual and group Kairos management, as they are closely interconnected. Nothing prevents the work team from acting on the principle of

one smart person, trying to see advantages in the additional skills of its employees. In the same way, Kairos management can be considered in an applied aspect, both in solving everyday issues and improving professional performance. It is effective in any direction, similar to Kaizen's 5S principle, which is equally effective for optimizing the work process and personal life [3]. Both teachings are aimed at optimizing the interaction between man and the surrounding world. Kaizen and Kairos management welcome self-development. In the case of Kairos-management, first of all, comprehensive development of a person is welcomed, which is not always connected with his professional activity. This fully fits into one of the basic postulates of Kairos management - effective multifunctionality. In Kaizen, the principle of cross-functional teams and parallel design is also widely practiced, when representatives of different professions are involved to implement certain tasks. Kairos-management went even further in this, popularizing not only the dialogue between different professions, but also the application of a whole pool of human skills, not always only related to his direct work.

The new era has brought new challenges to man. In the 21st century, people increasingly have to improvise, reclaiming life space, now not only among others, but also among artificial intelligence. The philosophy of Kairos management makes it possible to make a person and his business competitive. It helps to further actualize the hidden potential of each of us, opening additional perspectives in self-realization and achieving success.

The model of effective multifunctionality recommends considering any social system from the standpoint of multi-level and multi-component, each part of which is interconnected and complementary, while being a self-sufficient structure [5]. Only by developing all components, the system is able to move to a qualitatively higher level of organization, that is, to carry out evolution. By encouraging the development and improvement of employees, not only as professionals in their field, but also as individuals with their hobbies and passions, the company has a chance to increase its competitiveness and be more flexible in the changing market conditions. From the standpoint of Kairos management, it is suggested to consider the employee not as an element of the system, but as an independent system in the corporate supersystem with all the consequences arising from changes in the management approach. The approach is more complex than the usual linear structure of building a workflow, but the expected bonuses from it are many times more significant. Directors and HR-managers are occasionally interested in and

encourage additional hobbies of their "wards", if they are not directly related to their immediate job duties.

Most often, hobbies allow us to expand our circle of communication, thus getting to know potential buyers / investors / suppliers, etc. An ordinary office manager, being a first-class athlete, can find in the section not only loyal friends, but also future consumers of products, who, respecting his sports achievements, will automatically be more attentive to advertising from his mouth. A far-sighted leader, having analyzed all the hobbies and passions of his subordinates, can benefit from them in a variety of ways, the approximate algorithm of which I indicated in Figure 1.

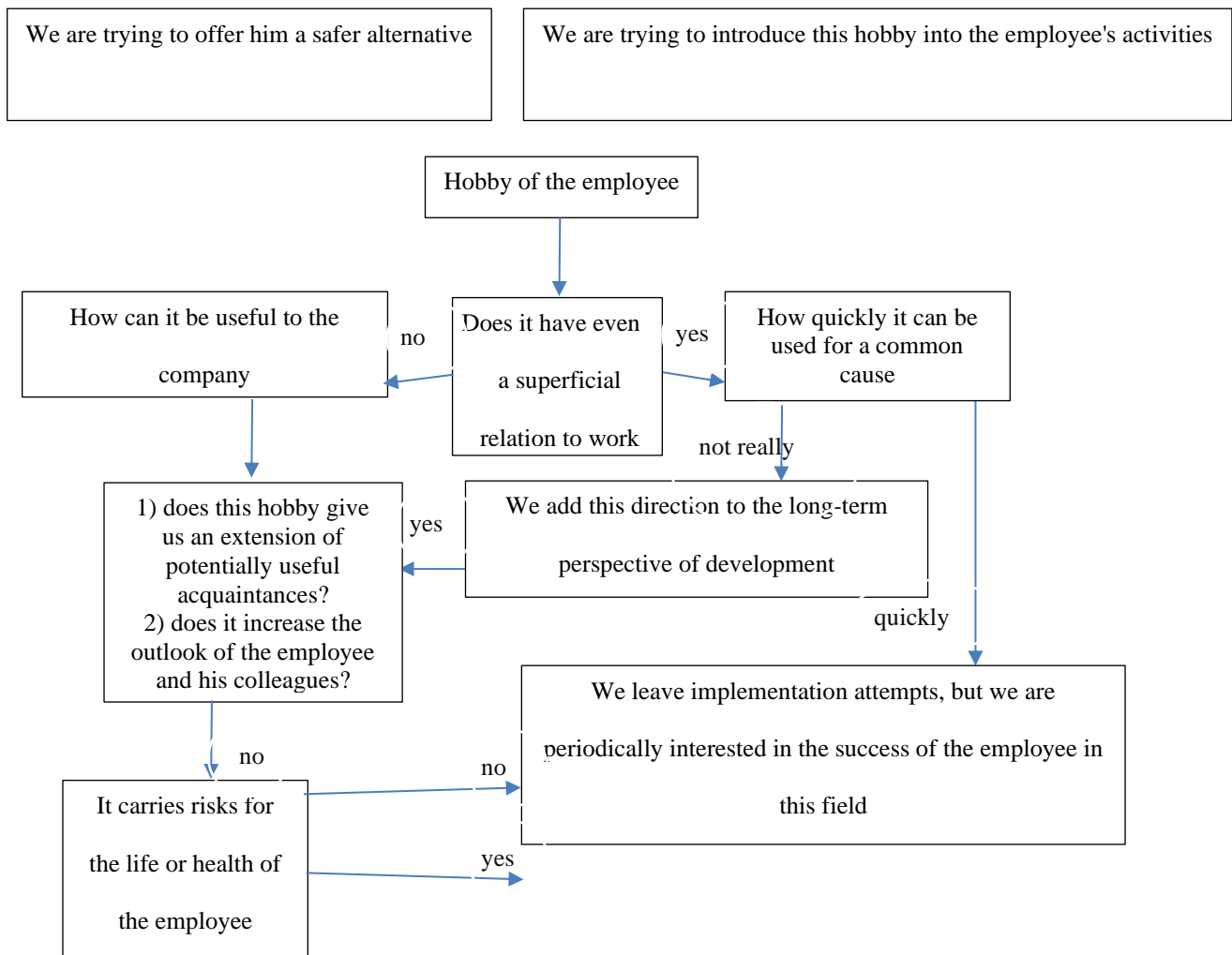


Fig. 1. Using the additional potential of employees to expand the company's capabilities [5].

If "no", answer three control questions:

- 1) does this hobby give us an extension of potentially useful acquaintances?

2) Does it increase the outlook of the employee and his colleagues?

3) Does it develop new potentially useful skills and abilities?

The second and third options are very useful, as they make it possible to more effectively implement the "Brainstorming" technology in a team, as an integral component of group methods of enhancing creativity. The first option is objectively effective, because the expansion of ties always better contributes to informing society. If all the answers here are negative, then we try to understand whether this hobby can be harmful or dangerous for the employee. If not, let him at least sometimes indulge himself in his favorite thing even at work, provided that it does not interfere with the performance of his main duties.

Everything is quite simple and obvious, but in order to implement such an approach at work, the boss also needs to meet certain criteria:

First, he must want to develop himself and improve his company, not being afraid to experiment and try something new;

Secondly, to be a real leader who knows how to lead people, charging them with his enormous energy and enthusiasm;

Third, really value your employees, and not use them as cheap labor.

It should be understood that almost everyone has a hobby. Most of us strive to implement these skills. Achieve recognition in work, but also in your passion. And if it also benefits the company, then the benefit is twofold: the employee will be delighted (additional motivation), and the company will acquire additional development tools. For example, the world-famous Guinness Book of Records at the dawn of its formation was only a small addition to the brewing company of the same name [12]. Decades have passed, and already many drink Guinness beer only because they know this book. So the hobby of one person determined the fate of a common cause. Even if the HR service does not find the use of additional skills of its employees in the near future - it is not scary! After all, the very fact of having extraordinary skills or knowledge already increases the competitiveness of the team. How? The answer is simple - brainstorming! Kairos management suggests using all human reserves, in particular during collective discussion. In this case, it is about creative potential and creativity. Especially since the main concept of Kairos management is based on the versatility of the team. The more diverse the team, the more



original ideas they can generate. The use of non-standard variations of brainstorming allows you to better reveal the creative potential of your employees, thereby turning meetings into a real exciting game.

Kairos management can be effectively applied individually — to create a successful coincidence of circumstances on your own. In other words, to adapt. The more abilities and skills a person has, the more directions he can see opportunities for self-realization.

In addition, the variety of interests causes the expansion of the circle of communication. Starts a chain of potentially useful acquaintances based on the principle of networking - building business connections. On the one hand, a person acquires additional skills, and on the other hand, he gets to know new people, each of whom is a "canon" of some possibilities.

Multifunctionality opens the way to success and big money, as it is the key to creativity. And this word is already more interesting, because creativity is part of brand generation, PR or GR technologies, advertising, marketing - those smart words, the knowledge of which makes a person in demand in the modern world.

Creativity is directed creativity. In other words, creativity to order. The broader a person's worldview, the more complex and unusual his ideas can be. Otherwise, it will be like a joke about a highly specialized doctor who perfectly understood the left nostril and did not understand anything about the right. People with great erudition are able to generate real creative ideas. A vivid example of the symbiosis of creativity and multifunctionality is bionics, a science that applies the principles of the structure and functioning of living organisms to the creation of technical mechanisms, systems, or structures. In order to master this discipline, knowledge in biology or technology alone is not enough. It is necessary to combine an in-depth understanding of the laws of living nature and the possibility of their application for technological needs [13-15].

Effective multi-functionality allows you to stand out from your competitors, develop your unique selling proposition and become a real brand. Kairos management only improves this process, as it develops the ability to see a good opportunity. Kairos management teaches how to use every human skill as effectively as possible. Creativity directly depends on the intellectual potential of a person, the level of his knowledge and the ability to form unexpected connections

between them. The stronger the multifaceted erudition, the more unexpected the conclusions can be.

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## **HISTORY AND CURRENT TECHNOLOGICAL TRENDS IN THE DIGITAL ECONOMY OF UKRAINE**

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### **Abstract**

The rapid development of information technologies determines the priority directions of development of history, society, and economy of most states. At the same time, there is a global revolution in the information and communication space. Digitization has penetrated into all spheres of human life. It also influenced the state system in the political, cultural, economic, financial, and social spheres.

One of the main goals of the digital transformation of Ukraine's economy by 2024 is to increase the share of IT in the country's GDP to 10%. Among other things, this will create favorable conditions for investors - an open market, a transparent tax and customs system, and an improvement in the offer on the labor market.

**Keywords:** digital technologies, digital economy, information technologies, digitization, modernization.

The economy at each stage of socio-historical development was a kind of "digital space". Performance indicators of any business, as well as economic terms, are expressed and reflected in numbers. Profits, losses, costs, revenues, amount and rates of taxes, tax base, inflation rate, budget deficit (surplus), GDP volume and others.

The term "information technology" came into full use after the invention of the computer (electronic computing machine). Since then, the development of information technology is primarily determined by the level of development of computer technology. Thus, if we take as the basis of periodization in the development of information technology the types of technological tools, then the following stages can be distinguished:

The 1st stage (up to the second half of the 19th century) "manual" information technology, the tools of which consisted of: a pen, an inkwell, and a book. Communications were carried out manually by sending letters, packages, parcels by mail. The main purpose of the technology is to present information in the required form.

The 2nd stage (the end of the 19th century - the 40s of the 20th century) "mechanical" technology, the tools of which consisted of: a typewriter, a telephone, a dictaphone, equipped with the most advanced means of delivering mail. The main purpose of the technology is to present information in the required form by more convenient means, to reduce costs for correcting losses and distortions.

The 3rd stage (4-60s of the 20th century) "electrical" technologies: large computers and corresponding software, electric typewriters, teletypes (telexes), photocopiers, portable recorders. Organization of delivery of information at a given time.

During this period, the purpose of technology changes, the emphasis in information technology begins to shift from the form of information presentation to the formation of its content.

The 4th stage (70s - mid-80s XX century) "electronic" technologies, the main tools of which are large computers and automated control systems (ACS) and information search systems (ISS) created on their basis, equipped with a wide range of basic and specialized software complexes. The "center of gravity" of technologies is shifting even more to the formation of the meaningful

side of information for the management environment of various spheres of public life, especially to the organization of analytical work.

Experience is gained in the formation of the meaningful side of management information and a professional, psychological and social basis is formed for the transition to a new stage of technology development.

The 5th stage (from the mid-80s of the XX century) is "computer" ("new") technology, the main tool of which is a personal computer with a wide range of standard software products for various purposes. At this stage, the process of personalization of ACS (automated control systems) takes place, which is manifested in the creation of decision support systems by certain specialists. Global and local computer networks are beginning to be widely used in various industries.

The 6th stage (from the mid-1990s) - "Internet/Intranet (latest)" - technologies. Distributed systems, global, regional and local computer networks are widely used in various fields of science, technology and business. E-commerce is developing. In connection with the transition to a microprocessor base, the technical means of communication, means of household, cultural and other purposes undergo significant changes.

There are several points of view on the development of "computer" information technologies, which are determined by various signs of division. What is common to all the approaches outlined below is that with the advent of the personal computer, a new stage in the development of information technology began. The main goal becomes the satisfaction of the personal information needs of a person, both for the professional and for the everyday sphere.

A sign of distinguishing periods in the development of information technology is the type of tasks and processes of information processing:

The 1st stage (60-70s of XX century) - data processing in computer centers in the mode of collective use. The main direction of the development of information technology was the automation of operational routine human actions and the development of automated production management systems (MES) and technological process management (BPM technology).

The 2nd stage (from the 80s of the 20th century) - the creation of information technologies aimed at solving strategic tasks and the implementation of information systems for process

management and business decision support.

A sign of distinguishing periods in the development of information technology - problems standing in the way of informatization of society:

The 1st stage (until the end of the 60s of the XX century) is characterized by the problem of processing large volumes of data in conditions of limited hardware and software capabilities.

The 2nd stage (until the end of the 70s of the XX century) is associated with the spread of the IBM/360 series of computers.

The problem of this stage is the possibility of using large universal computers (Mainframe) only by powerful corporations, given their high cost and complexity of operation.

3rd - stage (from the beginning of the 80s) - the computer becomes a tool for non-professional users (the first personal computers), and simple information systems (IS) - a means of supporting decision-making. Problems - the need to meet the user's needs as much as possible and create a suitable work interface in the computer environment, development of applications for corporate and individual use.

The 4th stage (from the beginning of the 90s) - the development of modern technologies for the creation of large IS, local, regional and global networks. Among the numerous problems of this stage, the following are the most significant:

- Development of agreements and establishment of standards, protocols for computer development and telecommunications;
- The need to develop distributed IS;
- Organization of access to strategic information;
- Organization of protection and security of corporate information.

A sign of distinguishing periods in the development of information technology is the advantage that computer technology brings:

The 1st stage (from the beginning of the 60s) is characterized by fairly effective processing of information when performing routine operations with a focus on the centralized collective use of computing center resources. The main criterion for evaluating the effectiveness of the created information systems was the difference between the resources spent on development and the

resources saved as a result of implementation. The main problem at this stage was psychological - poor interaction between users, for whom information systems were created, and developers due to the difference in their views and understanding of the problems to be solved. As a result of this problem, systems were created that were poorly perceived by users and, despite their rather large capabilities, were not used to their full extent. This stage is characterized by the implementation of the principle of obtaining information "in one place and now".

The 2nd stage (from the mid-70s) is associated with the appearance of personal computers. The approach to the creation of information systems has changed, the orientation is shifting towards the individual user to support the decisions made by him. The user is interested in development, contact is established with the developer, mutual understanding of both groups of specialists is established. At this stage, both centralized data processing, characteristic of the first stage, and decentralized, which is based on solving local tasks and working with local databases at the user's workplace, are used. This stage is characterized by the implementation of the principle of obtaining information "in one place and at any time".

The 3rd stage (from the beginning of the 90s) is related to the understanding of the analysis of strategic advantages in business and is based on the achievements of the telecommunications technology of distributed information processing. Information systems aim not just to increase the efficiency of data processing and help the manager, but to create highly efficient production. The used IT should help the company stand out from the competition and gain an advantage. This stage is characterized by the implementation of the principle of obtaining information "anywhere and at any time".

Today's digital stage is primarily aimed at forming an innovative information society. At the heart of such an environment:

- Use of new digital currencies;
- Virtuality of economic relations;
- Reduction of the need for bulky transport infrastructure;
- Reduction of business expenses;
- Disappearance of traditional markets, etc.

The first theoretician in the field of digital economy was computer scientist from the USA



Nicholas Negroponte. In 1995, he formulated the concept of electronic economy in his book *Being Digital* (translated from English - "Digital Existence") [1].

In the 1990s, a number of countries began to widely use digital terms in their legislation. At the beginning of the 21st century, regulatory and legal acts related to the spread and development of information and communication technologies were approved. The basic international acts in this area are: adopted on July 22, 2000 at the summit of the leaders of the G8 countries, the "Okinawa Charter of the Global Information Society" (Okinawa, Japan, 2000), which established global approaches to the development of information and communication technologies (IT technologies), which consist in the fact that IT technologies have become one of the most important factors influencing the formation of the society of the XXI century, as well as stimulating the development of the world economy [8]. The "Declaration of Principles for Building an Information Society" and "Action Plan" signed on December 12, 2003 (Geneva, Switzerland, 2003) confirmed the continuity of the approaches of the Okinawa Charter and formulated the basic principles of using IT technologies, as well as defined the role of public administration bodies, international and regional cooperation for the purpose of creating an information society [2]. The "Tunisia Commitment Action Plan" (Tunisia, Republic of Tunisia, 2005) became the third fundamental international act, which established worldwide approaches to the formation of a global information society using IT technologies in order to ensure sustainable development, economic growth, international stability and security [3]. Other final documents defining the principles of formation of post-industrial trends in the economic, socio-political, and spiritual spheres of public life were also adopted.

The digital economy is essentially a system of economic, social, and cultural relations, which is based on the creation, distribution, and application of digital and computing technologies, and, accordingly, related products. This process primarily affects: the activities of companies, the way of life of society, education, employment of people; mechanism of interaction between the state and citizens, including obtaining various important services.

The digital economy is focused on two important principles - information and network technologies. Electronic data is the main strategic resource of digitization. Modern IT tools, including business models, are developed and developed for the use of information. The essence

and significance of the digital economy is the acceleration of the mechanism of exchange of large volumes of electronic information between participants, the simplification of routine processes.

The main tools of the digital economy:

Blockchain is a fully functional technology for recording and storing digital information. The distributed ledger system groups all records into blocks, which are connected to each other by means of a cryptographic signature. Depending on the type of system, the blockchain platform is used to accelerate business processes in vertically integrated organizations. For example, for the organization of a digital treasury system or bank support for contracts. The public blockchain system is used for transactions with cryptocurrency.

Big Data is a set of methods, approaches, and tools aimed at transforming huge amounts of data, including unstructured and structured, into human-understandable results. For example, information about transactions, retail purchases; reports on user activities in the network; information from city video cameras. The term unites various technologies that allow storing and processing data.

Information technology - the process of processing information using AI (artificial intelligence). The scope of its application is becoming more and more, in connection with which soon most of the processes will be automated. The participation of people in their implementation will be reduced to a minimum. AI is a complex of technological solutions that studies ways of imitating human cognitive functions.

The Internet of Things (IoT) is a global computing network that connects various physical objects capable of interacting with each other or with the world without human intervention. The advantage of technology is that many processes (in trade, production, health care, energy) can be fully automated due to remote monitoring of capacities and resources.

Leadership in digitization belongs to the financial industry: online banking, electronic payments, crowdfunding, scoring models for assessing credit risks, investment advisor robots, cloud storage of information, cryptocurrencies, blockchain, P2P lending.

Electronic technologies of enterprises are related to the management, control and analysis of business, with the realization of products, services or works. Many financial products (loans, investments, payments, etc.) become available through the Internet or through mobile

communication. Access to data is possible anywhere at any time, the main condition is the presence of the Internet.

Digital economy progressively affects public development, increases the convenience of operations for all participants of relationships: small businesses, people, medium and large enterprises, government bodies.

Many services, goods or works can be found on the Internet, paid for online and actually received at the right place. This saves resources and time. Among other advantages, the following should be highlighted:

- Focus on customer needs - from choosing the right service at a low price to solving socially significant tasks;
- Simplification of the process of obtaining any services by individuals and legal entities - thanks to the development of electronic and information technologies, the supplier can directly interact with the buyer. There is no need to involve intermediaries. Almost everything (from groceries to tickets, from assistance to a passport) can be issued via the Internet;
- The birth of new startup ideas, trends, industries - there is a sharp increase in investment in all projects related to digital services, software, technological research. This contributes to the creation of new jobs, i.e. the growth of labor productivity;
- Reducing the costs of online business - those companies that have accepted the changes and switched to an electronic format are thriving. Direct sales are growing, costs for sales, marketing, transport, and logistics are decreasing;
- Transparency of business operations - a large part of operations in the digital economy is conducted online, information about purchases is transferred to tax authorities. This helps to reduce the amount of "black" revenue, to combat corruption and fraudulent schemes.
- Increasing the competitiveness of domestic production, expanding the geography of doing business.

The more possibilities something has, the higher the risks. The main problem of the digital economy is related to information leaks and legal restrictions in some areas of legislation. Global

digitalization of the economy carries the following threats:

- Increase in the level of fraud - information security must be ensured from the point of view of legal, technical, physical and cryptographic data protection;
- The growth of unemployment - against the background of the emergence of new professions and jobs, some specialties, and in some places even entire industries, disappear, losing their relevance;
- Technological gap - it is possible to ensure full penetration of digital technologies into the economy, if there are appropriate developments.
- Digital divide - general digitalization is not available to everyone. For example, in order to receive government services, a person needs to have access to the Internet, create a verified account, but not everyone has the opportunity for this, which directly affects the level of well-being.
- Digital slavery - as soon as the user begins to actively interact on the Internet, he becomes less free. You have to constantly enter your personal data, every step can be tracked; interests - to abuse. The product becomes the person himself, his attention and loyalty to something.

When thinking about the digital economy of Ukraine, it is necessary to distinguish three main groups of technologies:

- Of the near future - this is man-machine interface (human-machine interface), cryptocurrency, quantum computing, UAVs and business drones.
- Gradually implemented - the group includes the development of applications for smartphones, digital platforms for citizens and businesses, chatbots and integration.
- Breakthrough - the third group combines the most promising technologies of blockchain, large volumes of data, the Internet of Things, artificial intelligence, neurotechnology and augmented reality technology.

According to the results of the work of 2023, the Ministry of Digital Transformation of Ukraine summarized the Digital Transformation Index of the regions of Ukraine and evaluated the effectiveness of the digital solutions of the chief specialists in the digital transformation of the regions and the digital teams according to new measurement indicators, in particular in the areas

of health care and civil security and the availability of administrative services, which reflect capacity indicators in the economy, digital skills, infrastructure, public services and digital transformation of local governments, which contributes to the faster implementation of digital reforms [6].

As part of the International Economic Forum (WEF) in Davos, on January 17, 2024, at Ukraine House Davos, the Ministry of Digital Transformation of Ukraine together with the Swiss Agency for Development and Cooperation (SDC) held an event dedicated to the development of digital Ukraine. It presented the domestic experience of the development of the digital state, in particular: the WIN-WIN innovation development strategy for creating benefits for all involved parties, the implementation of the "Dream" project, which will contribute to the digital transformation of certain areas, and projects for car customs clearance in "Dia" and strengthening transparency in the work of customs [4].

According to the results of 2023, in the field of digital transformation, the results of the work of the fundraising company UNITED24 with more than half a billion dollars were significant achievements. USA collected funds; the launch of the "yesRecovery" program, as a result of which 34,500 applicants received payments in the total amount of UAH 3.2 billion, and the "Brave1" cluster, which financed 137 developments for \$2.3 million. USA, etc. In addition, 39 new electronic services were implemented on the Diya portal and application, and the number of service users increased to 19.9 million citizens; UAH 221.8 million was raised for Ukrainian business within the educational grant programs of the "Diya.Business" network of centers and the "EU4Business" initiative [5]; favorable conditions were created for UAV manufacturers, thanks to which the number of drones on the front increased hundreds of times; 25,000 "Starlink" terminals and 900 "Tesla Powerwall" devices were imported, which provide backup power during blackouts; the development of fixed Internet and mobile communication, resistant to power outages, etc., is ensured. [7].

Currently, Ukraine is in an active stage of development of the digital economy. In order to reduce the gap with other countries, the introduction of digital technologies in all spheres of life is necessary:

- Increase the country's domestic spending on the development of the digital economy;
- Provide access to secure information and telecommunication infrastructure and broadband Internet access for all households;
- To ensure regulatory sectoral regulation of the development of the digital economy.

The declared strategic goal of the government is to increase the share of IT in the country's GDP in the field of digital transformation of the economy in 2024, the implementation of innovative projects in 2024 related to the study of foreign markets and the state of stability of the domestic economy will contribute to attracting significant idle resources to meet the needs of the reconstruction of the Ukrainian economy, filling the state budget and development of domestic digital ecosystems with high added value.

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## CONCEPTS OF STRATEGIC PLANNING OF THE EDUCATIONAL SECTOR

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### **Abstract**

In the conditions of global challenges, the modern realities of the functioning of the educational sphere prompt a transformation in the educational sector in the directions of increasing its contribution to solving the tasks of the transition to an innovative model of the development of the national environment, the question arises of using the potential of strategic planning as a basic tool of the mechanism of modernization of education in the context of the needs of the national economy and stakeholders.

**Keywords:** strategic planning, educational sector, educational policy.

Planning is a basic function of strategic management in the educational field and is focused on the development and implementation of subjective plans that determine the future state of the educational field, directions or vectors, models, methods, algorithms and mechanisms for their implementation under the influence of controlled and uncontrolled factors. Planning the functioning and development of the educational sector, especially in the face of global challenges, is a complex type of management activity.

Planning processes in the educational field have a corresponding intra-branch feature and should take into account the following aspects:

- State educational policy;
- The state of the educational sphere;



- The nature of the planning object and subject;
- Given limits in time space;
- Digitization in the educational space;
- Influence of industry controlled and uncontrolled factors;
- Competition in the market of educational services;
- The level of theoretical, methodological, methodical, information and communication support;
- Financing of the educational sector;
- Integration processes at the national and international level, which affect the functioning and development of the educational sector.

The planning system in the educational field is an effective tool for coordinating the process of functioning of its subjects and adapting to changes under the influence of controlled and uncontrolled factors, thanks to which they coordinate the directions of activity with trends that are formed outside their borders and take into account the future needs of society

H. Mintzberg noted that planning is a formalized procedure aimed at obtaining a clearly defined result and has the form of an integrated system of management decisions [1].

In the conceptual direction, planning is a management function in an intra-industry environment and involves preliminary analysis and assessment, goal determination, forecasting, creation of new algorithms, programs, projects, etc., covers a specific range of actions that must be visualized in the process of drawing up plans and will ensure the development of the educational industry and its subjects. In the local aspect of planning in the educational field, it must be perceived as a way of making management decisions at the appropriate intra-branch level, as a tool for achieving defined goals.

The intra-branch plan as a product of a management decision lays down the foundations of systematization, organization, coordination and integration of activities in the educational sector. Planned indicators are the basis of feedback and a tool for monitoring the results of activities in the educational field.

Thus, systematic, purposeful and analytical planning allows you to correctly orient management activities, helps to achieve certain effectiveness and efficiency.

Strategic planning is one of the components of effective planning of the development of the educational industry in the system of intra-industry strategic management.

In general, strategic planning is a systemic process by which an institution, organization or relevant socio-economic system plans and forecasts its activities.

Strategic planning of the educational industry is focused on the formation and practical application of intra-industry plans that determine the future development of the industry and subjects operating in the educational environment.

Emphasizing the relationship between strategic planning and management activities in the educational sector, it is necessary to study it in the context of the concepts of intra-industry management and regulation as a component focused on goal formation and resource provision for their achievement.

In the educational field, strategic planning is visualized in a purposeful, formalized and adaptive process of definition with a strategic feature of the goal, tasks, parameters and development of a multivariate strategic plan of achievement based on the proposed strategy, which should take into account the following aspects:

- Determination of strategic goals, objectives and parameters taking into account the general mission of the educational sector;
- Models, algorithms and mechanisms for achieving strategic goals and parameters, as well as solving tasks;
- Separation of controlled and uncontrolled factors of influence on the intra-industry environment;
- System-functional analysis of the intra-industry environment;
- Consideration of the investment and innovation component in the educational sector.

Intra-industry strategic planning by its functional essence is aimed at managing change, that is, from its future to the present and taking into account the influence of controllable and uncontrollable factors. The general result of strategic planning is the determination of intra-branch algorithms, actions, steps, resources and processes that will allow achieving a strategic goal and solving specific tasks that will contribute to the development of the educational sector and its subjects.

An important aspect of the study of strategic planning in the field of education is its methodology. Scientific studies note the negative impact on intra-branch management practice of traditional approaches and methods of strategic planning, as well as the lack of connection between strategic state goals in education and specific programs for implementing innovations in the intra-branch environment. So, applied methods of strategic planning in the educational field can be:

- A program-target method, which provides for the adaptive structuring of goals and tasks to a set of intra-branch target parameters and standards that quantitatively describe the desired state of development of the object of intra-branch planning in future periods, taking into account the strategic potential of the educational sector;
- A structural-functional method, which involves the construction of an intra-industry structure and interaction between its elements, which ensures the proper functioning of the educational industry and satisfies the needs of stakeholders;
- The factor method, according to which indicators are determined based on the influence of controlled and uncontrolled factors of the internal or external environment, which cause changes in indicators in the intra-industry space;
- An indicative method that takes into account standard intra-industry indicators that visualize the qualitative characteristics of the strategic development of the subject of the educational industry;
- Economic-mathematical modeling that allows you to obtain synthetic or analytical information about the future state of an intra-industry entity and the necessary actions to achieve it, taking into account the influence of controlled and uncontrolled factors;
- The balance method, which provides for the balance of intra-industry opportunities and needs for material, non-material and human resources in terms of time and volume;
- The matrix method, which is focused on building models of interrelationships and interdependence in the intra-industry environment.

Thus, planning in the strategic management of the educational sector is a targeted intra-sectoral management activity that, taking into account the strategic potential, ensures the proportional and dynamic development of the educational sector, the determination of the main

social and economic parameters in the educational environment in the future and their achievement taking into account the human capital of the educational sector. The methods of strategic planning are visualized in selected technologies, models, mechanisms, algorithms and actions regarding planning calculations and justification of the parametric component of the intra-industry strategic plan.

Note that in the strategic management of the educational sector, purposeful activity takes place according to a defined plan that takes into account the appropriate algorithm and the influence of factors. An algorithm is a reflection of the results of the functioning of subjects into the future, that is, into a model, therefore modeling is a mandatory element of intra-industry planning, inevitable for any activity in the educational field, it organizes it and is one of the aspects of intra-industry activity [2].

The main tasks of strategic planning in the field of education:

- Adaptation to the European educational space;
- Multi-variability of intra-industry strategic development;
- Consideration and distribution of the strategic potential of the educational sector;
- Mobilization of intra-industry capabilities;
- Digitization of processes in the intra-industry environment;
- Transformation in the structural and functional environment of the educational sector;
- Systematic, comprehensive and coherent development of innovations in the field of

education.

In the conceptual provision of strategic planning in the field of education, a significant role also belongs to the principles that the subjects must adhere to.

The set of principles used in strategic planning is universal and can be extended to the entire cycle of work, including pre-planning stages, the actual stage of strategic planning and work performed after the end of the planning period, and which consist in determining the results of the implementation of planned tasks in the strategic management system.

The basic principles of conceptual support for strategic planning in the educational field are:

- Legality – regulatory and legal support of strategic planning that meets national and international standards;
- Conceptuality – means the requirements for the integrity, completeness and logical construction of intra-branch strategic plans in the educational field;
- Scientificity – means scientific validity, objectivity and reliability in the development of intra-branch strategic plans in the field of education and the application of modern methodology and support tools;
- Systematicity – the systematic approach is the main method of strategic planning in the educational field, which ensures compliance with the requirements of stability, dynamism, flexibility, orientation and intra-branch structural balance, also strategic planning is a subsystem of the strategic management system at all levels;
- Priority – substantiation of priority areas of activity in the intra-industry environment and strategic choice;
- Transparency – means the openness and openness of the process of forming intra-industry concepts, programs, plans with the involvement of stakeholders in the consideration and examination of draft documents, i.e. strategic plans of the education industry are available to all interested subjects;
- Complexity – means the need to consider all elements of intra-industry strategic planning in relation to each other and consideration of all parameters of intra-industry characteristics;
- Segmentation – it is necessary to take into account all the prerequisites and limitations that are characteristic of the educational field;
- Adaptability – the ability to take into account changes occurring in the intra-industry and external environment, due to flexible adjustment of the strategic goal, tasks, priorities and mechanisms for their implementation and modification of reverse intra-industry relations;
- Variability – when developing the concept of strategic planning, a variable component is necessary, which will provide the best of all possible options for the development of the intra-industry environment;
- Efficiency – the process of strategic planning in an intra-industry environment will ensure the best result at the lowest costs;

- Competence – means that intra-branch strategic planning in the educational field is provided by specialists with appropriate qualifications;
- Riskiness – means that various risks, which are characteristic of the educational sector, must be assessed during intra-industry strategic planning;
- Responsibility – the system and completeness of responsibility of the subjects of the intra-industry strategic planning process.

Hryhoriyev H., in order to ensure effective state regulation of financial, economic and social processes in the context of strategic planning, proposed options for dividing the relevant principles into five classification groups:

1) Conceptual:

- Conceptuality;
- Scientific knowledge;
- Objectivity;
- Legality;

2) Methodological:

- Balance;
- Complexity;
- Systematicity;
- Adaptability;
- Innovativeness;

3) Organizational:

- Priority;
- Decentralization;
- Segmentation;
- Controlling;
- Responsibility;

4) Economic:

- Variability;

- Efficiency;
- Riskiness;

5) Social:

- Democracy;
- Legitimacy;
- Sociality [1].

The basic principles of ensuring strategic planning in the educational sector are an important lever and conceptual support in the system of strategic management of the intra-industry environment. The education sector is an object of strategic planning and is positioned as an open complex socio-economic system, which consists of relevant strategic components that ensure the development of the educational environment of the country and society.

The strategic component in intra-branch planning is visualized in directions or vectors of activity in the intra-branch environment with a quantitative and qualitative focus on the consumption of educational services and other stakeholders.

Under the influence of global challenges of 2014-2022, strategic planning in the educational sector acts as an effective system management mechanism in the intra-industry environment. Note that in the context of the crisis phenomena of recent years, the education industry cannot count on an increase in the resources that the country can direct for its innovative modernization, therefore intra-industry strategic planning under the conditions of limited resources and a competence-based approach should contribute to the realization of intra-industry potential and effective, efficient modernization of the educational environment countries.

Let us agree that the strategy of education management in the national space, which is carried out on the basis of the application of strategic management and planning in the state educational policy as priority management tools, acts as an effective means of implementing educational reforms and transformations in the conditions of crisis processes or phenomena [4].

Strategic planning in the education sector should be aimed at forming a national program for the development of the country's educational space and contribute to increasing the competitiveness of the education sector and its subjects. The main attention should be paid to educational innovations and digitization of intra-industry processes.

The main conditions that must be met during strategic planning in the educational field:

- Taking into account the current state of the educational industry and its subjects of activity;
- Modern conceptual, methodological and instrumental support;
- Degree of resource provision;
- Based on the source of resource support;
- Assessment of the level of competitiveness in the market of educational services;
- Taking into account the current and future needs of the national economy in intellectual resources;
- Taking into account the current and future needs of consumers of educational services;
- Taking into account the influence of the European educational space and the dynamics of change.

Intra-industry strategic planning requires mandatory preliminary research processes:

- Intra-branch monitoring of activities in the educational sector;
- Diagnosis of strengths and weaknesses of the educational sector;
- Analysis and assessment of intra-industry threats, negative challenges and risks;
- A comprehensive assessment of the possible development trajectory of the educational sector and its subjects of activity;
- Analysis of the strategic needs of the national economy and society;
- A study of the strategic potential of the country's educational sphere.

The adaptive model of strategic planning is based on the construction of possible strategies for the development of the educational industry, which are formed on the modeling and multi-variability of the parameters of the development of the intra-industry environment, taking into account the identified strengths and weaknesses, favorable actions, threats and strategic potential of the educational industry.

Strategies for the development of the educational sector are models of actions in the intra-industry environment, which contribute to the optimal achievement of the planned results of activities under the condition of effective use of resource potential and the influence of factors of any nature.



The strategy defines the principles, directions, parameters, mechanisms and models that ensure the effective functioning and development of the educational sector, the solution of strategic tasks based on the increased interest of all stakeholders, the national economy. The process of implementing a strategy for the development of the educational sector can be theoretically modeled in terms of graph theory and visualized by the quality of movement from a point on the plane that determines the existing state of the strategy object to a point determined by the intra-branch strategic goals.

Thus, in the author's opinion, strategic planning is a modern tool of the strategic management system in the educational sector, which ensures dynamic, sustainable functioning and the effectiveness of the development of its intra-industry environment. Conceptual support for strategic planning in the educational field is focused on:

- Intra-industry strategic aspects;
- Complexity;
- Objectivity;
- Intra-branch system and interconnection;
- Quality and flexibility;
- Adaptability and authenticity;
- Reasonableness, effectiveness and efficiency;
- Intra-branch coordination of actions and feedback;
- The adequacy of the tasks of the strategic management system in the educational sector.

Note that strategic planning in the educational sector is an important lever and methodical support of the intra-branch strategic management system, which consists of relevant strategic components.

The main criteria and conditions of strategic planning in the field of education:

- Regulatory and legal support;
- Intra-industry orientation;
- Complex hierarchical and system support;
- Relevant intra-industry restrictions;
- Competence approach;

- Modern instrumental support;
- Innovative direction.

In the system of strategic management of the educational sector, strategic planning should be focused on a purposeful and formalized process of determining strategic directions, vectors, priorities, tasks and developing a multivariate set of actions that will ensure their achievement on the basis of the formed intra-sectoral development strategy and the strategic potential of the country's educational sphere.

Thus, the proposed conceptual support for strategic planning in the educational sector provides for and justifies the choice of adaptive strategies and parameter modeling in the intra-industry environment, to realize the strategic potential of the educational sector and its development in the face of global challenges. The results of strategic planning in the educational sector will ensure coordination and mutual compromise of the intra-industry environment. Strategic planning in the educational field is carried out within the established stages and solves tasks that detail vectors, tactical goals and operational actions with a position on the peculiarities of managing the development of the country's educational environment.

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## THE DIGITAL DIMENSION OF VOCATIONAL EDUCATION FOR IMPROVING THE QUALITY OF TEACHING

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### **Abstract**

The article emphasizes that professional education should actively contribute to the development of digital competencies. The focus is on the idea that the digital dimension allows for effective measurement and analysis of learning outcomes, ensuring continuous improvement in the quality of teaching and learning. The use of digital technologies stimulates innovation in the professional education system, which is necessary for the implementation of advanced methods and the preparation of professionals. The integration of digital measurement allows for adapting educational programs to the needs of the labor market and ensuring graduates possess relevant skills.

**Keywords:** professional education, digital measurement, qualification enhancement, informal learning, innovations.

**Formulation of the problem.** The modern world not for the first time faces the rapid development of digital technologies, which expands opportunities in all spheres of life, including education. Vocational education, playing a key role in training qualified professionals, needs to be adapted to these changes. The growing use of digital technologies in all spheres of life requires the training of qualified professionals with digital skills. Digital tools enable flexible and remote education, which is especially important in today's environment, when we face changes in work processes and global challenges. The digital dimension allows us to individualize learning, taking into account the personal needs and progress of each student.

The question of digital measurement in professional education for improving teaching quality is addressed by contemporary scholars such as: Kademya M., Hrytsenchuk O., Verbivskyi D., Karpliuk S., Fonaryuk O., Buynytska O., Dikhnich L. and others. For instance, Kademya D. explored the issue of forming professional competence of future teachers using ICT. Hrytsenchuk O. examined the European experience in developing teachers' digital competence in the context of modern educational reforms. Verbivskyi D., Karpliuk S., Fonaryuk O., in their research, highlight the digital competence of future vocational education teachers.

**The purpose of the study.** The aim of the article is to present the features of digital competences in professional education to enhance the quality of teaching.

**Introduction.** Vocational education should actively promote the development of digital competences, which are fundamental for a successful career in modern society. The digital dimension allows effective measurement and analysis of learning outcomes, providing continuous improvement in the quality of teaching and learning. The use of digital technologies stimulates innovation in the vocational education system, which is necessary for the introduction of advanced methods and training of specialists. The integration of the digital dimension allows the curriculum to be adapted to the needs of the job market and to provide graduates with relevant skills. Digital technologies help to strengthen cooperation between educational institutions, organisations and specialists from around the world, which expands opportunities for learning and exchange of experience [10, p. 119].

Thus, taking these factors into account, it is important to continue researching and developing digital initiatives in vocational education to provide high-quality teaching and graduates'

readiness for the challenges of the modern world.

**The basic research.** The advantages of the digital dimension of vocational education for improving the quality of teaching are as follows: improved assessment, individualized learning, development of digital competences, flexibility and accessibility, analysis, and continuous improvement.

Digital measurement allows objective and accurate measurement of students' academic progress, contributing to the objectivity and fairness of assessment. The digital dimension allows the creation of individualized learning programs, taking into account the needs of each student. The use of the digital dimension contributes to the development of digital skills and students' readiness for the challenges of the modern digital society. Thanks to digital tools, learning material becomes more accessible and flexible, facilitating distance learning and self-education. The digital dimension allows to analyze the results in detail, which enables continuous improvement of teaching and learning methods [2, p. 78].

As of today, it is possible to identify the disadvantages of the digital dimension in vocational education for improving the quality of teaching. The disadvantages are mainly defined by the following aspects: technological challenges, unequal access to technology, data privacy, and security issues, the possibility of technical failures, intensive training, and the need for teachers' training [8, p. 118].

Implementation of the digital dimension may require significant funding for technological infrastructure and educational equipment, which may be limiting for some educational institutions. Not all learners have equal access to modern technology, which can create differences in learning environments and social inequalities. The collection and processing of digital data may raise questions about the privacy and security of students' personal information. Dependence on technology can lead to the possibility of technical failures, which can affect the normal flow of learning and assessment. The intensive use of the digital dimension may lead to an increased focus on quantitative indicators, instead of developing students' creativity and critical thinking. The use of the digital dimension requires additional training and education for teachers, which can be time and resource consuming [5, p. 74].

Understanding both the advantages and disadvantages of the digital dimension in vocational

education is key to the rational implementation of these technologies to improve the quality of teaching.

The modern world requires an ongoing development and implementation of innovative approaches in education. The digital dimension, which is becoming an essential element of the educational process, offers us new opportunities and prospects. Today's era is characterized by rapid technological development and dynamic changes in job market requirements. In this context, vocational education should provide graduates not only with theoretical knowledge but also with practical skills that meet the requirements of the work environment [7, p. 288].

The digital dimension is defined as the usage of digital technologies and tools to measure, analyze and evaluate students' learning achievements. The approach provides objective information on the level of learning and development of key competences [9, p. 295].

Improving the quality of professional education teaching with the help of information and communication technologies comes down to understanding certain actions in modern society:

1. Development of interactive learning tools.
2. Use of remote learning platforms.
3. Creation of electronic textbooks and resources.
4. Organizing virtual workshops and lectures.
5. Promoting cooperation and interaction among students.
6. Use of virtual reality (VR) technologies.
7. Application of adaptive learning systems.
8. Assessment and reporting with the electronic tools.
9. Technological support for teachers and opportunities for professional development.
10. Providing access to the Internet and equipment.

The quality of teaching in professional education institutions can be improved by creating interactive learning materials, including video tutorials, simulations and virtual laboratories, which help students to learn and understand the material more easily. The introduction of

platforms for remote learning and interaction will provide schedule flexibility and access to learning resources from anywhere and at any time. Developing e-textbooks that contain interactive content, tests and self-testing tasks will facilitate a convenient and accessible learning environment. Holding virtual workshops and lectures using video conferencing platforms to engage experts and practitioners in the learning process will increase students' motivation to study [3, p. 46].

It is also recommended to use online forums, social media groups and other tools to facilitate collaboration, ideas exchange and mutual assistance among students. The introduction of VR for simulations and virtual environments will allow students to gain practical skills in a controlled virtual space. The implementation of adaptive systems that take into account the individual characteristics and learning progress of students, providing a personalised approach to learning, will improve the educational process. The use of electronic assessment and reporting systems will allow effective tracking of learners' progress and provide real-time reporting [1, p. 13].

Providing technological support and training for teachers to implement and effectively use Information and Information Communication Technologies (ICT) in teaching will significantly improve the educational process and make it of high quality. Providing learners with access to a stable Internet connection and the necessary equipment to use ICT effectively will enable learners to complete various tasks on time. These practices are aimed at ensuring the effective use of ICT in vocational education, improving the quality of teaching and developing modern teaching methods.

The digital dimension allows objective assessment of students' academic progress, taking into account various aspects of their development. The digital dimension tools allow to adapt the learning process according to the individual needs and progress of the student. Interactive elements of the digital dimension stimulate students' activity and independence in the learning process. The introduction of electronic assessment systems allows testing and analysing results in real time [4, p. 316].

After considering and analyzing the role of the digital dimension in vocational education, several important conclusions can be drawn that indicate the importance and prospects for using digital technologies in higher education. This mainly concerns improving objectivity and



accuracy, adapting to the students' diversity, improving the learning process, developing key competences, organizing the teaching process more effectively, and promoting innovations in vocational education [6, p. 104].

The digital dimension provides an opportunity to obtain objective and accurate data on student progress. With the help of digital tools, teachers can effectively determine the level of learning and respond to students' needs promptly. The digital dimension contributes to the creation of personalized learning paths for students. Individualization of learning allows each student to work at a pace that meets their individual needs and capabilities.

Using digital technologies, such as virtual laboratories and simulations, helps to enrich the learning process and provide students with the opportunity to gain practical skills in a controlled virtual environment. The digital dimension contributes to the development of both academic and key skills. Students have the opportunity to work with interactive tasks, which contributes to the development of critical thinking, communication and problem-solving skills. Digital tools allow teachers to organize and teach more effectively, monitor students' progress, and provide quick notifications and feedback [11, p. 18].

**Conclusion.** The digital dimension in vocational education is not just a technical innovation, but also a means of achieving higher quality teaching and preparing students for the challenges of the 21st century. This is a necessary step to improve the quality of teaching and training of qualified specialists. The use of digital technologies in education opens up new horizons for learning, making it more accessible, efficient and adapted to the needs of modern society. This transformation in vocational education reflects not only technological progress, but also a strategic approach to training the future generation of specialists.

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