METHODOLOGICAL PRINCIPLES OF THE IMPLEMENTATION OF THE INTEGRATED MODEL OF THE HIGHER EDUCATION COMPETITIVENESS IN THE CONDITIONS OF DIGITAL ECONOMY

INTRODUCTION
In the context of the national economy digitalization, there is a significant increase in the role of higher education as a knowledge-generating system within which, highly-qualified personnel is trained, high-quality research is carried out, and innovative projects are initiated. However, achieving positive synergetic effects from the activities of higher education institutions requires the establishment of their long-term cooperation with a wide range of stakeholders from different sectors, including state, business and public ones. It is necessary to realize that the development of the higher education system in new conditions of digitalization requires its ability to quickly adapt to new challenges of exogenous environment.

Further research involves the need to form a methodological platform for studying the integrated model of the higher education competitiveness in digital economy. The mentioned-above determines the relevance of the topic of this paper. We consider promising in this context the application of the system-synergetic approach, which means scientific knowledge of complex systems with a nonlinear trajectory of the development, interaction and relationships of their constituent elements, as well as patterns and principles of their development under the impact of dynamic environmental factors.

LITERATURE REVIEW
Today it is said that the formation of digital economy is an inevitable process, which is observed in the vast majority of developed countries (BARZMAN et al., 2021; COSMULESE et al., 2019; KHOLIYAKO et al., 2020; DJAKONA et al., 2021; IVASHCHENKO & ORLOVA, 2017; HENRIETTE et al., 2015). New information technologies are gradually penetrating all spheres of life, including and in economy (SAMOLOVYCH et al., 2021; POPELO, 2017; SHAPOSHNYKOV et al., 2021; ZHAVORONOK et al., 2021; ZYBAREVA et al., 2021; YOUSSEF et al., 2008).

The analysis of current research in digital economy shows that many scientists define it as a global trend of economic development, without which the existence of society is impossible today (BUTKO et al., 2019; KOROLEVA & KURATOVA, 2020; ROMANOVA et al., 2020; SKALATSKYI, 2006; TØMTE et al., 2019; UGUR, 2020).

The development of information society in the XXI century takes place in the direction of large-scale digitalization of all socio-economic processes, and poses specific challenges to the higher education system, in particular, causing transformations of its activity (GROSU et al., 2021; KALENYUK et al., 2020; KHOLIYAKO, 2019; POLISHCHUK et al., 2019; RODRIGUES,
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2017; SANTOS et al., 2019; SHKODA et al., 2020; TKALENKO et al., 2017; ZATONATSKA et al., 2019). The features of system-synergetic approaches and the basic principles of their use in scientific research are revealed in publications of Armand (1988), Vasyليف (2007), Halchynskyi (2007), Gontan (2008), Kniazeva & Kurдумов (2007), Kosiev (2000), Pryhozhyn & Stenhers (1986) and others.

In our research we support the approach of Shkarlet et al. (2016) referring the analysis of the mechanism of the systematic approach application. We are impressed by the vision of these authors on the internal content of the system approach, i.e.: this is a theoretical scientific approach, which is characterized by the versatility, and the essence of which must be considered as an object of studying the system as a whole, individual phenomena, consisting of individual components and relationships. This definition is laid down as the basis in our study.

Dombrovan (2018) follows a rather broad approach to the definition of the synergetic approach. Studying the prospects of using synergetics in interdisciplinary research, Dombrovan (2018) interpreted this category as a specific theory and methodological platform that systematizes numerous fragments of knowledge about the outside world and integrates them into a complex image of the world. Along with this, we adhered to the point of view of Trushkov (2015) on the essence of the synergetic approach. In his article, he defined the content of the synergetic approach as a new direction of modern scientific activity and described the ideas of its application in economics.

In our study, we paid considerable attention to the scientific paper of Voznyuk & Zdanevych (2019). These scientists conducted research at three methodological levels (general/overall, peculiar/specific, single/individual). Based on the above the features of the application of the system and synergetic paradigm of management of social-economic, educational processes were defined.

By formulating the patterns of the application of the system-synergetic approach to the study of the integrated model of the higher education competitiveness in the conditions of digital economy, we were guided by the interdisciplinary principle. We fully share the position of Professor A. Kolot, who considers the concept of interdisciplinary comprehensively, defining it as “the future of research and development of higher education” (Kolot, 2014) and proposes the following definition: “it is a synergy of different sciences, which involves the development of integration processes, the growing interaction of methods, tools for obtaining new scientific knowledge”.

**METHODOLOGY**

In our opinion, the issue of research of the integrated model of the higher education competitiveness in the conditions of digital economy cannot be deeply studied on the methodological basis exclusively of one economic discipline. Thus, the following needs are actualized: the need for interdisciplinary synthesis, a combination of scientific approaches to research; compliance with the condition of the completeness of the scientific problem study, taking into consideration the aspects of the interaction of subjects as a complex open socio-economic systems and the global educational environment. We consider the application of the system-synergetic approach in this context to be justified and share the point of view of Professor Marhasova V., who singled out the following aspects and features of its application in research papers:

- cognitive ability - expanding the methodological basis of knowledge of the object of study;
- possibility of isolating the system - forming parameter - must be measurable, acceptable to all subsystems, relevant to systems goals;
- nonlinearity of the subsystem interaction - causes complexity of practical impossibility of forecasting the future state and development of the system;
- specificity of the system transformation-changes can occur as a result of the influence of environmental factors, as a consequence of the interaction of subsystems, and not through purposeful management of the system; multiplicity of influence,
unpredictability of the future, diversity of subjects of influence, the need for feedback;

- multiparametric elements of the studied systems – elements, the set of which is a subsystem, consists of a number of parameters of different nature;

- considering the time factor – allows you to apply the theory of dynamic equilibrium and synergetic economics;

- specificity of the analysis – the predominance of time series of statistical data over mathematical in the study of systems and patterns of their development (MARHASOVA, 2014).

Despite the availability of sound research in the application of the system-synergetic approach, further research requires the implementation of it as a basic methodology for studying the integrated model of the higher education competitiveness to digital economy. The purpose of the article is to formulate the laws and principles of the methodology of research of the integrated model of the higher education competitiveness in the conditions of digital economy.

RESULTS AND DISCUSSION

Schematically, the integrated model of the higher education competitiveness in digital economy is presented in Fig. 1. The integrated nature of the model means, on the one hand, broad involvement of stakeholders and their interests, and, on the other hand, the focus on ensuring the introverted and extraverted adaptability of higher education and universities to new challenges of digital economy.

Fig. 1. A model of the integrated model of the higher education competitiveness in the conditions of digital economy

Source: compiled by the authors
Under introverted adaptability of the higher education system, we understand the adaptability to new conditions that are formed during the economy digitalization (planning the order and the structure of the order for training in accordance with the promising demands of the labor market; orientation of university research on the development and improvement of information and communication technologies). Introversion adaptability of higher education institutions to digital economy is interpreted as adaptability to new conditions of competition, which are formed as the results of entering the domestic market of educational services of foreign universities equipped with the latest information technologies. Extraversion adaptability of the higher education system is defined as adaptability to new conditions of the functioning of the international market of educational services, which are formed by the creation of the global international field (formation of a positive image of the national higher education system and domestic universities in the global educational space; increasing their positions in the world ratings; involvement of foreign students; inviting foreign professors; increasing the volume of academic mobility). The extraversion adaptability of higher education institutions should be considered as adaptability to new conditions of competition formed as a result of the introduction of innovative information and communication technologies by universities (expanding students’ access to study at foreign universities; online and distance education; massive open online courses (MOOC); ensuring the representation of universities on the Internet).

The implementation of the proposed integrated model is aimed at increasing the level of competitiveness of the national higher education system and provides for the achievement of a set of synergy effects for all stakeholders. These effects are manifested in the positive impact on:

- quality of knowledge students - it envisages the coordination of the educational process with current requests of employers, their involvement in the process of modernization of courses and programs, updating the list of required skills, abilities and knowledge, as well as the intensification of extracurricular activities of universities;
- competitiveness of the graduates of higher education institutions in the labor market; creates preconditions for the identification and implementation of potential and talents of applicants for higher education (during the implementation of extracurricular projects and activities, the support of students’ start-ups and innovative ideas);
- innovative development - the implementation of the model involves the establishment of long-term partnerships between higher education institutions and business, based on the generation of new knowledge, development of innovations and their transfer to the real sector of economy; successful implementation of the model will result in the transformation of universities into innovation centers, able to ensure the commercialization of research results and help ensure the pace of the innovative development of the country;
- quality of educational services, commercialization of research results of universities in the real sector of the national economy, improving the quality of products of domestic producers, the introduction of innovations in their activities, improving customer service and other synergistic effects of the model implementation contribute to improving the level of public welfare in the country.

Based on the application of the system-synergetic approach as a methodological basis of the study, the key patterns of the integrated model implementation of the higher education competitiveness in digital economy are identified and highlighted. In the following section of the article we will reveal their content in detail.

The regularity of the integrity of the higher education system is based on the need for organizational (the ability of a set of elements of the system with complex relationships and relationships to the development) and functional (the ability of the system to implement the functions focused on achieving goals) unity. In the context of the study, it should be emphasized that this pattern is most clearly manifested in the generation of new contracts and connections between the system and the environment, the development of communication paths. The pattern of integrity is based on the importance of finding common interests of all
stakeholders, their coordination, balancing and streamlining. It is of fundamental importance to preserve the integrity of the system, which can be violated by its excessive openness.

The regularity of the required diversity is revealed by the complexity of the studied system and the depth of synergistic connections that arise between stakeholders. The higher education system itself contains subsystems and elements that can be considered as complex systems. In essence, these subsystems and elements are not completely identical. In addition, the higher education system has a hierarchical organization (the national higher education system is a subsystem of the global education system).

This pattern presupposes the expediency of accessing the consistency of the goals of the integrated system of the higher education competitiveness with the national strategic goals of the state and the global trends in the development of the educational environment. The same is applied to the goals setting at the local level. Due to such coordination of goals at different system levels, the risk of making unfounded, impulsive management decisions that can have negative manifestations in the medium or long term is reduced.

Guided by the regularity of the necessary diversity, we can identify several key functions of the higher education system: ensuring self-reproduction; creating and maintaining conditions for effective functioning of the system, its subsystems and elements; consistency and compliance with the goal of higher order system (both to achieve their own goal and to promote the goal of higher order systems, acting as their subsystems or elements).

The regularity of the emergence of the higher education system clarifies complex connections and relationships between the elements of the system. According to this pattern, the national higher education system with its inherent properties and objectives is the formation of a higher order compared to any of its subsystems (governing or managed), or element (university, which is also in its internal structure and a set of links is a system). In other words, the regularity of emergence substantiates the following provisions: properties of the system are not identical to the amount of properties of its constituent elements; the amount of goals of the system is not identical to the amount of goals of its constituent elements; properties of the system depend on the properties of its constituent elements; existence of system-saving properties; the system has specific properties that are not inherent in any of its elements.

The regularity of synchronization and regulation should be considered in two complementary aspects. The synchronization expresses the ability of the system subjects to move to a single rhythm of coexistence, joint development. Following the classification offered by I. Blekhman and O. Erokhyna (BLEKHMAN, 1981; EROKHYNA, 1999), we shall consider the following types of synchronization:

- **internal** - occurs mainly as a consequence of the interaction of subjects of the same level, i.e., it is the so-called mutual synchronization of the similar in structure systems, subsystems and elements; for example, the cooperation focusing on achieving a common system goal synchronizes the functioning of the system from within;

- **external** - the ability of a higher order system to set or at least influence the rhythm of the development of other systems (Blekhman, 1981; Erokhyna, 1999); for example, the national higher education system with regulatory levers of its elements may be so powerful in the studied context.

The system desynchronization may occur after the bifurcation point; further, there are processes of the elements adaptation both to each other in the changed condition, and to new factors and tendencies of development; as a result, mutual synchronization of the system is achieved. Thus, the desynchronization and related factors should not be considered sharply negative, because due to their impact, the system as a whole acquires new qualities, forming new nature of the interaction of elements and subsystems.

A number of developing countries are characterized by a significant “detachment” of the higher education system from real economy and current social needs. In such circumstances,
it is advisable to public authorities (as national entities), which have full access to the information about potential, reserves and real opportunities of domestic higher education institutions, to encourage representatives of business, education and public sectors to integrate, interact in educational, research and technical spheres. Such mutual integration lays the foundation for ensuring the integrity of the system.

The pattern of coherence logically follows from the previous one. Coherence means the coordination in time of processes and characteristic fluctuations of the system. As it is stated by O. Erokhyna: “coherence leads to the creation of a collective state in which the element is not at a certain level, but at all at once” (EROKHYNA, 1999). This is fully applicable to the study of the integrated model of the higher education competitiveness in the conditions of digital economy. After all, a higher education institution must be simultaneously taken into account and analyzed at the local level (and-as a complex system, the elements of which are scientific and pedagogical, administrative staff, students and their unions); as an element of the managed subsystem (taking into account that the administration and management of universities are both part of the managed and control subsystems); as an element of the national higher education system in general (failure of education institutions to perform their functions in the structure of the national higher education system causes its degradation); as an element of the global educational environment (caused by the intensification of the internationalization and globalization of the educational sphere).

In our opinion, the essence of the regularity of coherence should be considered comprehensively, because the achievement of synergetic effects depends on the level of the partnerships development in the system. At the national level, mechanisms for the business stimulation to cooperate with higher education institutions in educational and scientific-technical activities need to be developed and implemented. The interaction of the subjects of the integrated model of the higher education competitiveness in the conditions of digital economy involves not only the coordination of interests and goals, but also the consolidation of the resources of all stakeholders. In this way, it is possible to achieve the set system goals and to obtain synergetic effects.

Practical application of the analyzed patterns requires the specification of the corresponding principles. By the latter, we mean a set of general rules and recommendations as a link between theoretical and applied principles of the study of the integrated model of the higher education competitiveness in the conditions of digital economy. Studying the set of requirements, we based on the results of research by Kholiavko et al. (2021); Cosmulese et al. (2019); Kholiavko et al. (2020); Djakona et al. (2021); Grosu et al. (2021); Zhavoronok et al. (2021), whose scientific publications are devoted to the problems of developing and implementing modern models of the competitiveness of higher education. We support the position of mentioned above researchers; their scientific and methodological findings were deepened and expanded within the framework of our article. The results obtained are presented in table 1. And in particular, the table 1 describes in details the set of principles of system-wide patterns of the application of the system-synergetic approach by researching the integrated model of the higher education competitiveness in the conditions of digital economy.

Countries that are territorially close have a large number of common features in the implementation of the cluster approach, mostly at the initial stage. With further development, each country begins to acquire its own characteristics of clustering, but a number of similarities remain due to the institutional environment and so on. Activities and development of clusters have recently been concentrated not only within regions and countries, but also spread more widely, which leads to the formation of a number of territories in the region which should eventually be considered as international competitive market players.

The study of the cluster approach implementation in different countries of the world allowed to identify the leading features of the global cluster models (Table 1).
**Table 1. Principles of system-wide regularities of the application of the system-synergetic approach**

| Regularity                  | Principle                                      | Feature                                                                                                                                                                                                 |
|-----------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Regularity of integrity  | 1.1. Principle of functional unity             | Ensuring effective implementation of the model requires the synchronization of stakeholders’ interests, coordination of their activities, but the basic functions of the system must be preserved.                              |
| 1. Regularity of integrity  | 1.2. Principle of the unity preservation        | Successful implementation of the integrated model means ensuring the ability of the higher education system to provide an elastic response to exogenous challenges, or its restoration to the pre-shock state, the reorganization or adaptation to external disturbances. In this context, it is important to ensure the sustainability of the higher education system, its ability to counteract the impact of the exogenous environment to ensure internal unity. |
| 1. Regularity of integrity  | 1.3. Principle of organizational unity          | Consideration of the higher education system and stakeholders not as separate systems capable of acting on each other, but as a holistic object of knowledge with a set of complex connections and duo directed interactions. The study of the impact of the model should take into account the interaction of subjects, their ability to reorganize in response to shock exogenous disturbances. |
| 1. Regularity of integrity  | 1.4. Principle of balancing                     | Harmonization of relations between higher education institutions and state, business and public sectors strengthens the integrity of the system and creates Preconditions for effective implementation of the integrated model.                                                                 |
| 1. Regularity of integrity  | 1.5. Principle of communicativeness             | The study of the effective implementation of the integrated model is possible only based on the established communication links between universities, enterprises, public entities of the state and public sectors. The interaction between these entities occurs through the movement of information, financial and other resources between them. |
| 2. Regularity of the necessary diversity | 2.1. Principle of the priority of system functions | Transformation that the higher education system undergoes during the implementation of the integrated model can last only until the violation of the basic functions that determine the essence and specificity of the system itself. |
| 2. Regularity of the necessary diversity | 2.2. Principle of uneven development of parts of the system | Regional disparities and inequalities in the development of various elements of the system should be taken into account both in the implementation of the integrated model and in the process of accessing its impact on the quality of knowledge and competencies, the youth, competitiveness, regional innovation and social welfare. |
| 2. Regularity of the necessary diversity | 2.3. Principle of the agreed goal setting       | Orientation of stakeholders to achieve common goals allows us to consider the set of such subjects and relationships between them as a single object of scientific knowledge. |
| 2. Regularity of the necessary diversity | 2.4. Principle of complicating the organization | Development of the higher education system in the process of the integrated model implementation is a dynamic process, which is manifested in periodic changes in the internal structure of the system and the specifics of the interaction of its elements. |
| 2. Regularity of the necessary diversity | 2.5. Principle of the feedback                  | The study of the model requires the development of communication channels that would allow public authorities to promptly receive feedback from universities, enterprises and the public. |
| 3. Regularity of emergence   | 3.1. Principle of generating system-wide properties | Ensuring the effectiveness of the study is based on the establishment of functional-targeted consent of stakeholders. Their interaction gives rise to common goals and properties of the newly formed system for all subjects. |
| 3. Regularity of emergence   | 3.2. Principle of maintaining system-preserving properties | The main requirement for the research methodology is to keep the defining, basic properties of the system unchanged despite the effects of external shock perturbations. |
| 3. Regularity of emergence   | 3.3. Principle of synergetic interaction        | Coevolution of the higher education system, business, state and public sectors generates positive synergy effects for their subjects. |
| 3. Regularity of emergence   | 3.4. Principle of the uniqueness of the specific properties | Building a functional-targeted consent of stakeholders enhances the uniqueness of each subject of interaction; synchronization of subjects does not mean their identification and complete assimilation. |
| 3. Regularity of emergence   | 3.5. Principle of correlation of system-wide properties with the properties of elements | Achieving common goals leads to the coordination of elements of the interaction with each other, the development of relationships between them, coordination of subsystems with the emergent system. |

**Source:** Systematized by the authors

In the next section of our article we would like to identify the basic principles of specific patterns.
Methodological principles of the implementation of the integrated model of the higher education competitiveness in the conditions of digital economy. The main principles of regularity of synchronization and integration are following:

- principle of intersectorial integration - achieving positive synergetic effects from the implementation of the integrated model requires the establishment of effective integration between the higher education sector, entrepreneurship, the state and the public;
- principle of proportionality of the frequency of movement - synchronization of the development rates of subjects of the interaction does not mean the equalization of the speed of movement of all subjects in the direction of the purpose achievement (each subject moves at its own specific speed, based on the available experience, the level of flexibility, existing barriers and limitations);
- principle of the sensitivity to synchronizing and desynchronizing factors - implementation of the integrated model is aimed at ensuring its adequate response to effects of synchronizing (strong intellectual potential, active informatization of the national economy and the higher education sector, increasing demand for information resources and innovation) and desynchronizing (economic instability, low diversification of the financing sources for universities, low level of commercial attractiveness of the research results, low level of the innovative activity of banks) factors;
- principle of a single pace of development - cooperation of subjects in the implementation of joint activities leads to the synchronization of the pace of their development (in first turn, on the trajectory of achieving joint goals);
- principle of maximizing the information - establishing synergetic interaction of subjects in digital economy requires full information support of their cooperation, introduction of information and communication technologies, improvement of communication channels.

The regularity of coherence is based on the principles of:

- digitalization - development of digital economy is accompanied by digitalization of economic operations; digitalization processes are observed in various spheres of the activity; in the higher education system, they are manifested in the introduction of blockchain technologies;
- delegating functions and collegiality - implementation of the model requires detailing the areas of responsibility of the actors involved and specifying its functional unit with the division of responsibilities between the performers and the identification of aspects that require collegial decision-making;
- mutual trust - achieving synergetic effects, forming a functional-targeted agreement, the development of a mutually beneficial partnership requires the existence of the relationship of trust between the parties;
- end-to-end relationships - partnership of the subjects of the integrated model cannot be unilateral, but must be implemented comprehensively, in the educational and research, and innovation activity (such multi-vector cooperation requires the development of a dense system of relationships between stakeholders);
- principle of proportionality in the regulation of interaction - the study of the integrated model should be implemented at the national level, which justified the appropriateness of highlighting a special role of public authorities in regulating relevant processes (the directive public administration and harsh influence are unacceptable).

The process of research of the integrated model of the higher education competitiveness in digital economy is determined by a set of factors, which we combine into three groups:
1) factors of intersectional interaction of the involvement of subjects (endogenous motivational factors of subjects necessary for the establishment and development of mutually beneficial partnership);

2) transformational factors (changes in the national higher education system as a polystructural system of socio-economic relationships that arise between public authorities in this area, educational institutions, business structures and the public in digital economy);

3) factors of the formation of synergetic effects of the stakeholders’ interaction (a set of conditions and factors necessary to obtain synergetic effects from the interaction of involved entities; they logically follow from the laws of emergence, coherence, synchronization, integration).

Successful implementation of the integrated model of the higher education competitiveness in the conditions of digital economy allows to achieve positive synergetic effects of the development of the higher education system and its stakeholders, as well as to implement some strategic and tactical purposes – Table 2.

Table 2. Main strategic and tactical purposes of the development of higher education institutions in the conditions of digital economy

| Strategic purposes | Tactic purposes |
|--------------------|----------------|
| **Educational activities:** | |
| - increasing the quality of educational services | - improving the staffing of educational process, regular training of teachers, in particular, increasing the level of mastery of innovative information and communication technologies; |
| | - operative updating of educational programs according to challenges of the economy digitalization; |
| | - development of digital skills of students; |
| | - increasing the level of information literacy of students and teachers; |
| | - development of media literacy of the youth; |
| | - coordination of educational courses and programs with enquires of business environment taking into consideration tendencies of its digital transformations; |
| | - introduction of the latest information and communication technologies in the educational process; |
| | - increasing practical orientation of learning; |
| | - development of learning programs during the whole life |
| **Research activities:** | |
| - increasing efficiency of the research activity; | |
| - commercialization of innovation developments of universities | |
| - transfer of technologies | |
| | - patenting of investments and useful models; |
| | - sale of licenses for commercial use of patented scientific research; |
| | - attracting students to carrying out scientific-research works; |
| | - spreading the practice of conducting scientific research on the order of business and other stakeholders |

**Financial activities:**

- diversification of sources of financing
- popularization of the principles of learning during the whole life
- increasing the level of the presentation of universities on the Internet

- widening financial autonomy of universities;
- activation of the inflow of resources from the business-sector;
- increasing efficiency of using available financial resources;
- development of the practice of creation of endowment funds at universities

**Informational activities:**

- formation of lifelong learning skills, self-development and self-learning, in particular, on the basis of mastering and using modern information and communication technologies;
- filling with content of the official site of the university;
- development of the university's brand in social networks (SMM-marketing);
- increasing positions of domestic higher education institutions in the world ranking of universities (for example, the rating Webometrix monitors the parameters of the university's representation on the Internet)

**International activities:**

- expanding the mobility of students and teachers;
- participation in scientific and educational programs of international cooperation

- development of the exchange of students and teachers between universities of different countries;
- development of distance education and various components of e-learning;
- increasing the level of knowledge of foreign languages by teachers and students;
- participation in international scientific events.

**Source:** Systematized by the authors
Successful implementation of the Model is possible under the following prerequisites: the availability of state support for universities and innovative businesses; expanding the financial autonomy of universities; development of cooperation between universities and business; growing innovative business activity; advanced civil society, presence of powerful NGOs in the fields of education and science; academic mobility; high quality and practical value of university studies; guarantee of the protection of intellectual property rights, norms of the current legislation in the fields of higher education and science; presence of effective communication channels between economic actors; transparency of mechanisms for financing higher education institutions; minimizing bureaucratic and corruption risks.

Despite the change in the role of the government sector from the controller to the partner of universities, the monopoly right to adopt laws and other normative legal acts is retained by public authorities, which should be aimed on: coordination of all legal norms regulating the higher education institutions’ activities; harmonization of the current domestic legislation in the fields of education and science with the relevant EU legal norms; development and legalization of economic incentives for business to intensify cooperation with universities in R&D; optimization of reporting on scientific, technical and innovative projects; elimination of bureaucratic barriers in the process of patenting and commercialization of intellectual property rights of universities. At the legislative level, the government sector should consolidate specific instruments of state support for the development of the national higher education system, science-intensive industries, innovatively active enterprises. In the digital economy, the government sector needs to become a link between academic science, university education, business and civil society.

CONCLUSION

The application of the system-synergetic approach to the study of the integrated model of the higher education competitiveness in digital economy is substantiated. The key regularities of using this approach (integrity, emergence, necessary diversity, coherence, synchronization, integration) are highlighted, as well as the system of relevant to it principles is identified. Advantages of the implementation of the system-synergetic approach by studying the integrated model of the higher education competitiveness in the conditions of digital economy are specified, namely: an opportunity to consider a set of relationships between stakeholders-representatives of different sectors (state, business, public); creation of the effective network of communications between stakeholders, including installing the feedback system; organization of exchange of information resources for free access to them for all involved entities; achieving positive synergetic effects of the cooperation between universities, business, state and the public.

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Methodological principles of the implementation of the integrated model of the higher education competitiveness in the conditions of digital economy

Principios metodológicos de implementación del modelo integrado de competitividad de la educación superior en las condiciones de la economía digital

Resumo
Um esquema conceitual do modelo integrado de competitividade do ensino superior às condições da economia digital foi formado pelos autores. A natureza integrada do modelo revela-se, por um lado, no amplo envolvimento dos stakeholders e tendo em consideração os seus interesses, e por outro lado - na sua aposta em garantir a adaptabilidade do ensino superior e das universidades aos novos desafios da economia digital. No artigo, é proposto um paradigma sistema-sinérgico de pesquisa do modelo integrado de competitividade do ensino superior nas condições da economia digital. A implementação do modelo integrado garantirá a adaptabilidade de introversão e extroversão do sistema de ensino superior e das universidades aos desafios da economia da informação. A implementação do modelo proposto contribuirá para a concretização dos objetivos estratégicos e táticos de desenvolvimento das instituições de ensino superior, bem como afetará positivamente a qualidade do conhecimento dos jovens, o desenvolvimento inovador regional e o bem-estar social do país.

Keywords: System. Synergetic effect. Digital economy. Higher education. Methodological patterns and principles.

Palavras-chave: Sistema. Efeito sinérgico. Economia digital. Ensino superior. Padrões e princípios metodológicos.

Abstract
A conceptual scheme of the integrated model of the higher education competitiveness to the conditions of digital economy has been formed by the authors. The integrated nature of the model is revealed, on the one hand, in broad stakeholders' involvement and taking into consideration their interests, and on the other hand - in its focus on ensuring the adaptability of higher education and universities to new challenges of digital economy. Within the article, a system-synergetic paradigm of researching the integrated model of the higher education competitiveness in the conditions of digital economy is proposed. The implementation of the integrated model will ensure the introversion and extraversion adaptability of the higher education system and universities to the challenges of information economy. The implementation of the proposed model will contribute to the achievement of strategic and tactical goals of the development of higher education institutions, as well positively affect the quality of knowledge of young people, regional innovative development and social welfare in the country.

Keywords: System. Synergetic effect. Digital economy. Higher education. Methodological patterns and principles.

Palabras-clave: Sistema. Efecto sinérgico. Economía digital. Enseñanza superior. Patrones y principios metodológicos.