

# DEVELOPMENT OF COMPETITIVE ADVANTAGES OF THE NATIONAL HIGHER EDUCATION SYSTEM IN THE DIGITALIZATION CONDITIONS

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## Summary

The relevance of the research is caused by the strengthening of competition within the global educational services market. To maintain high competitive position in modern conditions of digitalization and globalization of the market the universities are constantly forced to improve their educational, researching and innovative activities. At the state level educational policy should be targeted on creating competitive advantages of national higher education system. The authors identify the term “competitive advantages” as a set of properties, which allow universities: to perform their basic functions fully; to act as an effective component of the economic system and a real factor in the socio-economic development of the country; to compete at different global educational market levels. In the article functional and structural competitive advantages of higher education system are analyzed. The authors made attempt to apply the M. Porter’s approach of five market competitive forces in case of global educational system. Within the conducted research were stated that balanced government regulation is required for development of 1) effective strategies of increasing competitiveness of the national higher education system, and 2) effective tools for identification of universities competitive advantages. The authors suggested an algorithm for managing the competitiveness of the national higher education system. In the conclusions, the authors formulate proposals for strategic vectors of formation of competitive advantages of universities and the higher education system in general, taking into account the current challenges of the digital economy.

### Key words:

*competitive advantages, higher education system, university, digitalization, information and communication technologies.*

## 1. Introduction

The higher education sphere is characterized by a sufficiently high degree of competitiveness, which is at the micro-, macro- and mesoeconomic levels. At the micro level, there is a competition between entrants for admission to the most prestigious higher education institutions; between students – for the best points and ranks on education, research and social activities, as well as for the receiving a grant or scholarship; between teachers - for the

maintenance of the workplace by improving pedagogical skills and advanced training. Besides, in the context of sharpening demographic and migration problems in the majority of countries competitiveness is being strengthened between higher education institutions at the internal educational markets (macroeconomic level). Moreover, in the context of intensification of globalization processes, which have penetrated in all spheres of social life, it is quite logic to single out the mega-level of competition. Particularly, it is about the entry of domestic higher education institutions into the international educational services market; the emphasis should be made on the development of their competitive advantages.

The competitiveness of the higher education system is a complex (multilevel) concept, which characterizes the current and promising opportunities to occupy the best competitive positions in the regional and global educational services markets along with an adequate response to current and potential challenges of a dynamic endogenous and exogenous environment. Competitiveness is based on the concept of competitive advantages, which represent such characteristics and properties to allow universities:

- 1) to perform main functions (train highly qualified personnel, carry out research activities, implement economic and social functions, etc.);
- 2) to act as an effective component of the economic system, and a real factor in the socio-economic development of the country;
- 3) to compete worthy at the global educational services market.

The necessity for state policy of ensuring competitiveness of the higher education system is due to: it’s extremely important role as a social development factor; intensification of competition in the global educational services market; strengthening the mass character (“massification”) of higher education; the need to implement the innovative nature of the national economy and the intensification of innovative activities in

higher education institutions. The basis for ensuring the competitiveness of the higher education system should be the state policy of forming and maintaining the competitive advantages of both universities and the system as a whole (Canales et al., 2020; Kholiavko et al., 2020; Kolomiets et al., 2020; Kovalenko et al., 2021; Kovalevsky et al., 2015; Polishchuk et al., 2019; Shkoda et al., 2020).

It should be emphasized that processes of digital economy development cause the digital transformation to modern universities. Maintaining a competitive position in the educational services market requires higher education institutions to implement innovative information and communication technologies in educational and research activities. Special attention is now being paid to the students and teachers' digital skills formation, to providing them with gadgets and wide access to the Internet. Today, distance and blended education have become an integral part of any university's activity. Digitalization should be integrated into the competitiveness strategy of the educational institution, as well as into the state educational policy (Barzman et al., 2020; Boronos et al., 2018; Henriette et al., 2018; Ivashchenko et al., 2017; Popelo, 2017; Reyes Salazar et al., 2021; Rodrigues et al., 2016; Toader et al., 2019).

## 2. Literature Review

The systematization of scientific evolution theory of competitive advantages has revealed the main separation branches in the advantages categories: absolute advantages (A. Smith), comparative advantages (D. Ricardo), resource and technological advantages (M. Porter); definition as sources of benefits: the endowment with factors of production (E. Heckscher, B. Olin), the effect of scale (P. Krugman, K. Lancaster), the quality of human capital (R. Lucas), the intellectual leadership (G. Hamel, K. Prahalad).

The issue of ensuring the higher education competitiveness in the current conditions of educational area globalization and the development of digital economy was revealed in the articles of Batista et al. (2016); Bond et al. (2018); Cosmulese et al. (2019); Djakona et al. (2020); Filyppova et al. (2021); Kholiavko et al. (2021); Shkarlet et al. (2019). Tkalenko et al. (2017); Tømte et al. (2020); Ugur et al. (2020). These researchers analyzed the essence and prospects of using modern information and communication technologies as an effective strategy tool to ensure the adaptability of the higher education system to the challenges of the digital economy.

The **purpose** of the article is to determine the main implementation directions of state educational policy in terms of increasing the national higher education system competitiveness based on the identification of competitive advantages of universities, relevant in current digitalization

challenges.

## 3. Methods

The theoretical basis of the research were scientific studies, dedicated to the regulation of the higher education competitiveness. Along the research there were used both general scientific methods, and specific methods of economic science, namely:

- abstract-logical (to generalize theoretical approaches to the process of managing the higher education competitiveness),
- system analysis (to determine nature and structure of competitive advantages in the educational services market),
- analysis and synthesis (to justify the need for state policy to ensure national higher education system competitiveness),
- logical generalization (to make suggestions for the development of higher education system competitive advantages as a whole in a digital economy).

## 4. Results and Discussion

The main characteristics of competitive advantages of the higher education system are: comparability (only on the basis of its comparison with competitors); relevance (assessment should be carried out in the context of the relevant external environment and exogenous factors); timely (dynamism of environment development determines the limited time for the achievement of competitive tasks). There are two main groups of competitive advantages in the higher education system:

- functional – the university's image, the quality of education services, the rate of graduates' employment, trends in commercialization of R&D results, educational services export and their inclusion in the processes of internationalization. Functional competitive advantages are formed in accordance with the main function of higher education institutions and the education system in general: educational, research, innovative, international, entrepreneurial activities for universities;
- structural - the existing of research universities, the integrity of the system, its flexibility and adaptability to changes in external and internal environmental factors. The structural competitive advantages of higher education system as a whole can be two types: first, the advantages provided by leading universities; secondly, the advantages obtained as a result of the synergistic unity of all components of the system. The leading universities which concentrate the country's intellectual, resource and technological potential, can act as locomotives of innovation processes in the country; and according to their main indicators they can claim a decent position in the world universities rankings. In addition, the higher

education system at the meso-economic level should be represented by the high-powered regional universities and specialized education centers (e.g., medical, art, technical, business education, etc.). Structural competitive advantages depend on the combined activities of all education system institutions; they can be developed in separate activity areas or to be related to different components of educational potential.

The competitiveness of the higher education system is ensured not just by the number of universities in the country,

but also by the synergistic unity of all higher education institutions competitiveness, which together forms the integrity of the system, its ability to be a factor in socio-economic development and to meet modern digital economy challenges.

According to M. Porter, the essence of competition is determined by five forces: real competitors, potential competitors, consumers, substitutes, suppliers (Porter, 1990) – Fig. 1.

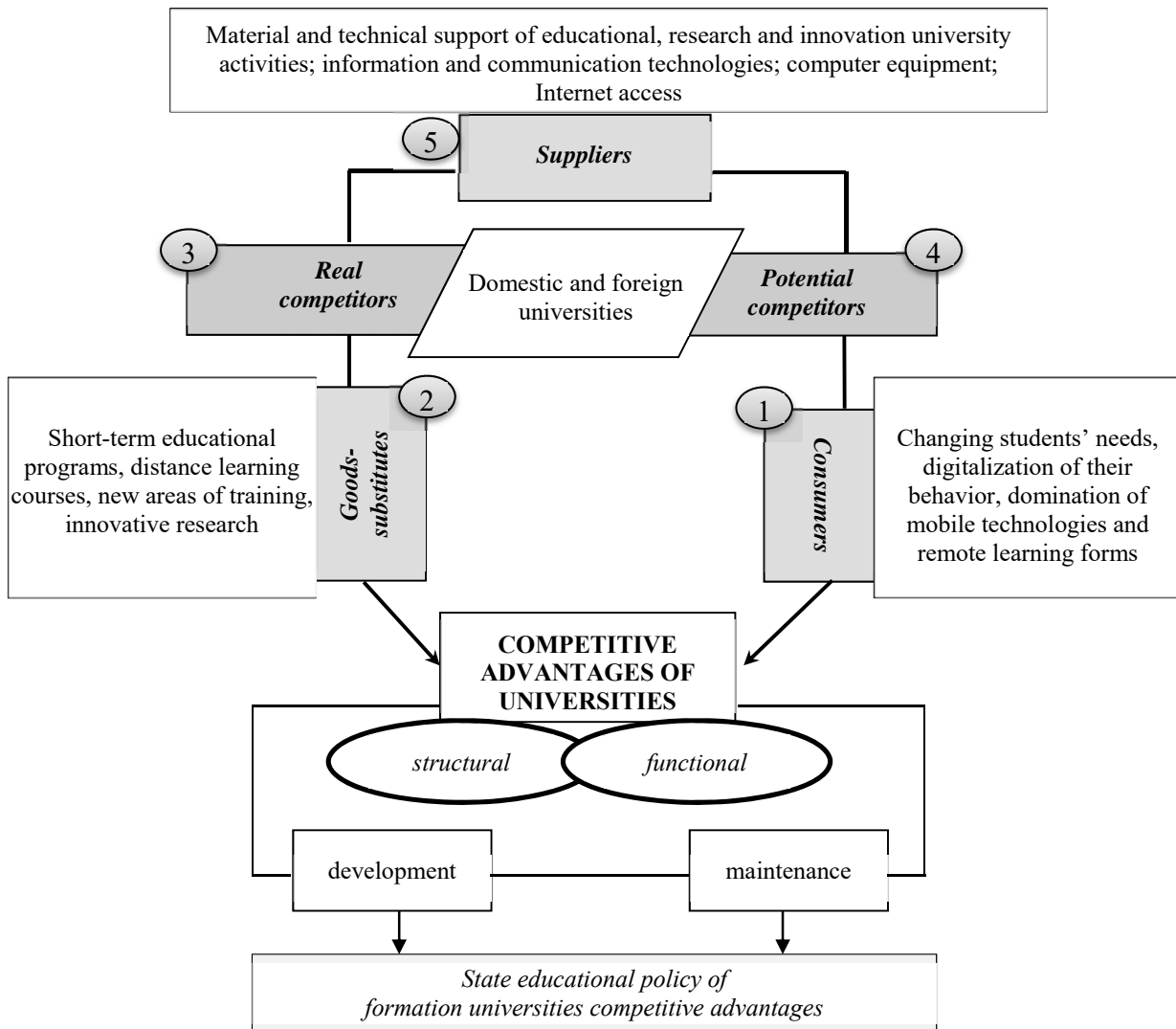


Fig. 1. Five forces that determine competition in the market of educational services  
 Source: based on the authors (Porter, 1990)

Determining the competitive position, the development of competitive strategy, universities should take into account the activities of real competitors (both domestic and foreign universities). In response to the high competitiveness in almost all segments of the educational services market, universities are intensifying their marketing activities to promote their own educational products, research results, as well as developing their brand, improving their image, and positions in world rankings. These measures can be useful in universities' marketing, namely in the increasing of number of students, rate of in-bound students. In such conditions, the higher education institutions have to develop not only the competitive advantages, but also to implement of measures of maintaining of such advantages and achieved competitive rank in the educational services market (Levina et al., 2015; Lim, 2015; Moreno, 2016; Zatonatska et al., 2015).

Studying the issues of development and maintenance of competitive advantages in the educational services market, it should be emphasized the crucial importance of such force of competition as the threat of new (potential) competitors (Porter, 1990). The emergence of new players in the market forces other universities to identify and realize their own competitive advantages in teaching, research, educational, international and other areas of activities. In the conditions of the digital transformation of national economies and national higher education systems, entering the educational services market has become a much easier and faster process. The mentioned is ensured by the capabilities of modern information and communication technologies, the rapid spread of distance education, the growing popularity of studying abroad, the loyalty of employers to diplomas of foreign universities.

One of the most important forces determining competition in the educational services market is consumer behavior. In this context, it is especially important to note the need to focus on the needs, demands, interests, solvency of consumers (students and their families) during the process of formation of university's competitive advantages. Educational services should be as flexible and adaptable as possible to the dynamic changes of the external economic environment in order to more fully and effectively satisfy the needs of consumers. This is especially relevant in the context of expanding student rights and opportunities to choose and change the specialty, specialization, educational program during the study period. The university's competitiveness is largely determined by its ability to respond quickly to changes in consumer demand. Innovative information and communication technologies, mobile applications, electronic platforms for communication with students and graduates are an important tool for ensuring the competitive advantages of higher education institutions (Romanova et al., 2020; Samoilovych et al., 2021; Santos

et al., 2019; Shaposhnykov et al., 2021; Youssef et al., 2008; Zybareva et al., 2021).

Regarding to the fifth force that determines competition - supplier behavior - it should be noted that its importance for the higher education system cannot be defined as a key one. However, this competition force still does not lose its relevance if we consider suppliers as partners that potentially can contribute to the diversification of funding sources for higher education institutions (Kholiavko, 2019). Supplying for the higher education institutions is possible in the form of providing educational materials, textbooks, manuals, teaching materials, equipment for science laboratories, modern digital technologies, computers, mobile devices, Internet access, as well as the necessary equipment to realize universities' researching activities. The cooperation with suppliers is also implemented by universities in the direction of development of their digital infrastructure.

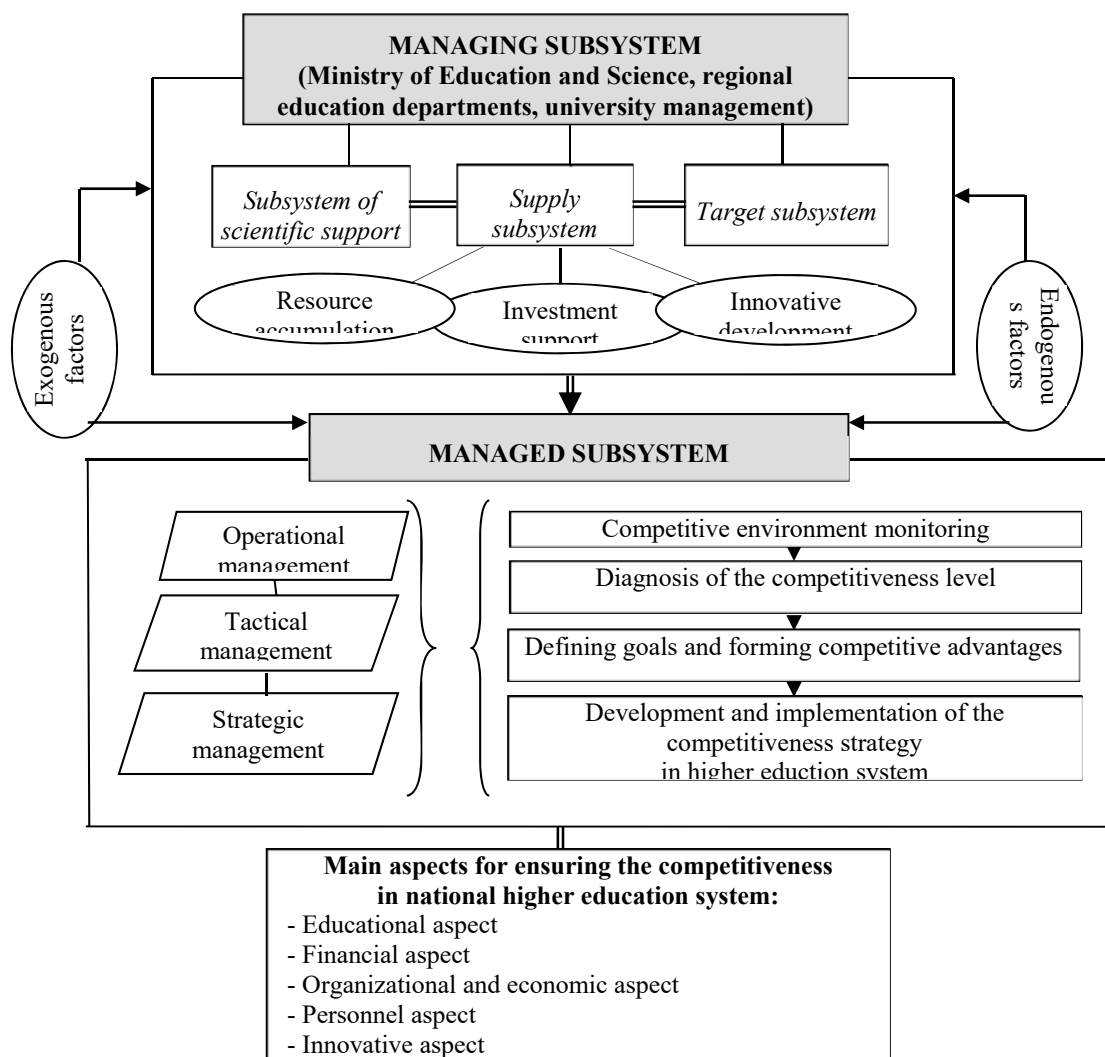
In our opinion, the effective strategies development, directed to increase the competitiveness of the national higher education system and the formation of effective tools for identification of competitive advantages for universities, requires balanced government regulation and support. This is justified by several main reasons: complication and complexity of this activity; massive character of higher education; the crisis of education, accompanied by a decline in quality of educational services; the complexity of intensifying the innovative activities; high sensitivity level to the multifaceted influence of exogenous and endogenous factors; high importance of higher education as a factor in the innovative development of the national economy.

In a simplified form, the algorithm for managing the competitiveness of the national higher education system is visualized in Fig. 2.

Detailing the data on Fig. 2, we can distinguish the following stages of development and implementation of relevant government programs:

- 1) specification of missions, goals and objectives of development of the program;
- 2) choice of strategy, assessment of possibility to develop the digital component within this strategy;
- 3) forming of highly qualified team of specialists, who will be directly involved in the development of the program; assessment of the development level of their digital skills and information literacy;
- 4) approval of organizational structure;
- 5) competitive environment analysis;
- 6) diagnostics of resource opportunities and limitations; monitoring of the current state of universities provision with information and communication technologies;
- 7) diagnosis of time opportunities and limitations;

- 8) accumulation, systematization and analytical processing of official statistical data;
- 9) development of program options;
- 10) evaluation of program alternative versions;
- 11) optimal program version approval;
- 12) spread information about the implementation of the program among stakeholders;
- 13) identification of persons responsible for the program implementation;
- 14) creating plans-schedules of program implementation (according to financing terms and volumes);
- 15) distribution of measures between the executors in accordance with the program implementation phases;
- 16) direct implementation of the program;
- 17) achievement of the goals;
- 18) monitoring and evaluation of the effectiveness of the achieved results on the basis of specified indicators (KPIs);
- 19) implementation of measures to maintain the achieved competitive advantages, competitive positions in the educational services market;
- 20) permanent improvement of the program in order to adapt to the current demands of the dynamic exogenous environment and modern global digital space challenges.



**Fig. 2.** Algorithm for managing the competitiveness of national higher education system  
*Source: compiled by the authors*

The main stages of development of the competitive advantages of higher education system include: resource accumulation (accumulation of human, infrastructural, technological, financial and other resources), investment support (development and efficient use of resources), innovative development (generation and implementation of innovative information and communication technologies, new digital technologies) (Fig. 2). At the first stage there is an accumulation of various resources necessary for successful activity in the field of education; the competitive advantages are based on the university's ability to accumulate and organize the certain resources. At the second stage the competitive advantages are being determined not so much by the availability of resources, but by the mechanisms of effective management and investment in resource development. At the third stage, competitive advantages are formed by the exclusive innovation results.

Successful implementation of measures to increase the competitiveness of national higher education system in the conditions of digitalization of national economy involves consolidative efforts of various stakeholders: universities, students, teachers, business, employers, government, profile ministries, non-governmental educational organizations, educational experts and analysts, representatives of civil society. In addition, all directions of higher education institutions need to be intensified, namely: improving the quality and diversification of educational services; development of innovative consciousness; increasing the innovation component in research, increasing the efficiency of R&D; digital infrastructure development, implementation of modern information and communication technologies in education and research; development of teachers and students' digital skills; commercialization of innovations and R&D results; expansion of universities financial autonomy; integration into the global educational and scientific community, intensification the export of educational services, increasing the level of academic mobility, etc.

## 5. Conclusions

The development of competitive advantages in the educational services market is a complicated and multifaceted process that is implemented at different economic levels, requires resources and permanent improvement of strategic management and integration mechanisms based on current trends in globalization and digitalization.

The basis for ensuring national higher education system competitiveness should be the state policy of forming competitive advantages based on the available potential and taking into account the whole set of digital

economy challenges. In today's digital conditions, the real competitive advantages of universities can be formed in the field of creating modern attractive and competitive educational products (unique, distance, online and other courses); strengthening the innovative character of activities (implementation of innovative information and communication technologies, improving of tools of distance education); activation of university-industry cooperation; intensification of export strategy and academic mobility.

The state policy of development competitive advantages of national higher education system should focus not so much on increasing the resource provision, but on effective mechanisms to stimulate the development of educational, research, international, entrepreneurial and innovative activities of universities. It is strategically important task to identify specific universities (approximately five) among the leading higher education institutions, which with the unprecedented government support should become researching universities according to world criteria.

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