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"Academic Capitalism": Pros and Cons of the Development of Science and Higher Education

The environment of academic capitalism, which has covered almost the entire field of science and higher education, has both positive (PROS) and negative (KONS) influences on them. Academic capitalism has sharply accelerated the commercialization of the results of applied research and development of universities and research institutes and has allowed these organizations and institutions to significantly capitalize on their intellectual capital. This gave impetus to the development of progressive innovations and outstanding inventions. For example, in the system of higher education there is an intensive innovative development, which, of course, can be attributed to the positive impact of academic capitalism on the development of material, technical, scientific and engineering potential of universities and colleges.

On the other hand, the pursuit of profit and the general search for opportunities to commercialize R&D results, mainly the results of applied research and experimental development, leads to a significant reduction in demand and attention to the development of fundamental science and the search for basic scientific values. This leads to a slowdown in the production of new basic fundamental knowledge and a slowdown in the intellectual development of society.

Many recent scientific publications have also criticized the impact of academic capitalism on science and higher education. Excessive entrepreneurial activity of universities in the direction of profiting from the development and commercialization of applied research instead of purely scientific activities and basic basic research leads to the loss of the position of universities and colleges as "temples of science". There may still be a small number of academic institutions of higher education and research that continue to conduct basic research that is difficult to commercialize but that is genuine "scientific knowledge," or in other words, knowledge of humanity.

This paper analyzes the innovative changes in the higher education system caused by the environment of academic capitalism. The negative impact of academic capitalism on the sphere of higher education and science is also analyzed.

Keywords: academic capitalism; entrepreneurial university; innovations in higher education; innovative development of higher education.

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The environment of academic capitalism has now engulfed almost the entire sphere of science and higher education. Perhaps there are still a small number of academic institutions of higher education and research that continue to carry out fundamental scientific research, which is difficult to commercialize, but which is true "scientific knowledge" or, in other words, the knowledge of humanity.

Academic capitalism, which has become a reality, has dramatically accelerated the commercialization of the results of applied research and development of universities and research institutes. Allowed these organizations to significantly capitalize their intellectual capital, gave impetus to the development of innovations and inventions. In particular, an intensive innovative development is observed in the system of higher education, which, of course, can be attributed to the positive influence of academic capitalism on the development of the material, technical, scientific and engineering potential of universities and colleges.

This is PROS.

On the other hand, the general pursuit of profit and commercialization of R&D results, mainly the results of applied scientific research and experimental development, leads to a significant decrease in demand and government attention to the development of fundamental science. This leads to a slowdown in the production of new basic fundamental knowledge and a slowdown in the intellectual development of society.

This is CONS.

Let us further consider some aspects of innovation in the higher education system caused by the spread of market relations in the field of science and higher education (what belongs to PROS).

Summarizing the results of a comprehensive study of the phenomenon of academic (university) entrepreneurship [1–14], it should be noted that business institutions of higher education implement their activities in higher education in the current market laws of the economic system, interact with internal forces of society (respond to its challenges and inquiries) are under the influence of globalization pressure of the world community (as schematically shown in Fig. 4 [1]).

Innovations in the higher education system should directly lead to innovative changes. It is reasonable to consider HEI's innovative activity in the higher education system as an economic category related to the capitalization and commercialization of intellectual products – knowledge, technology, educational and scientific services, etc.

Let's consider further the types of such innovations in the higher education system that can lead to innovative changes, and their classification. These can be innovations of the following types: economic and market; technological; organizational; structural and pedagogical; educational and pedagogical (Fig. 1). Most of them are either directly or indirectly initiated by academic capitalism.

Innovations of economic and market type (see Fig. 2) unite caused by scientific and technical and industrial and economic development of society and the spread of market economic relations in all areas of socio-economic activity of mankind, the commercialization of educational and scientific and technical activities of HEI and all higher education (innovations of economic and industrial development, depending on market requirements).

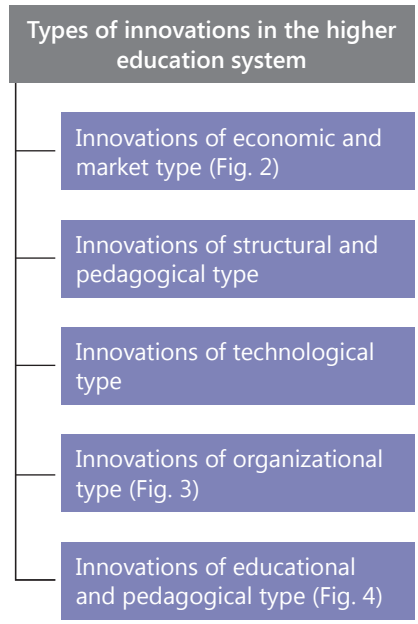

Fig. 1. Types of innovations in the higher education system that can lead to innovative changes

Economic and market innovations include such innovations that allow to reduce the budget funding for higher education and science to obtain the necessary resources not only for survival but also for the prosperity of HEI:

1. New forms and types of financing of education and crediting of educational services, educational institutions of various types, statutory (including – educational, scientific, scientific and technical, educational and cultural) activity of educational institutions; diversification of funding sources; formation of various funds, grands, endowment institute.
2. Commercialization of educational results (contractual forms of education, educational, consulting, expert and other services), scientific and scientific-technical activities (R&D, technology transfer) HEI, obtaining additional financial income from extracurricular activities (lease of property, organization of mass activities for local and regional communities, etc.).
3. Participation of HEI in innovative socio-economic local, regional and national development, opening of new directions of business activity, enterprises and spheres of industry.
4. Close cooperation with industry and business: joint implementation of R&D, targeted training, opening and supporting joint ventures, joint participation in joint stock companies.
5. Active participation of HEI in:
   - business development;
   - education, training and preparation of entrepreneurs of different types and leaders for industry and social sphere;
   - developing and lobbying the necessary regulations for the devel-

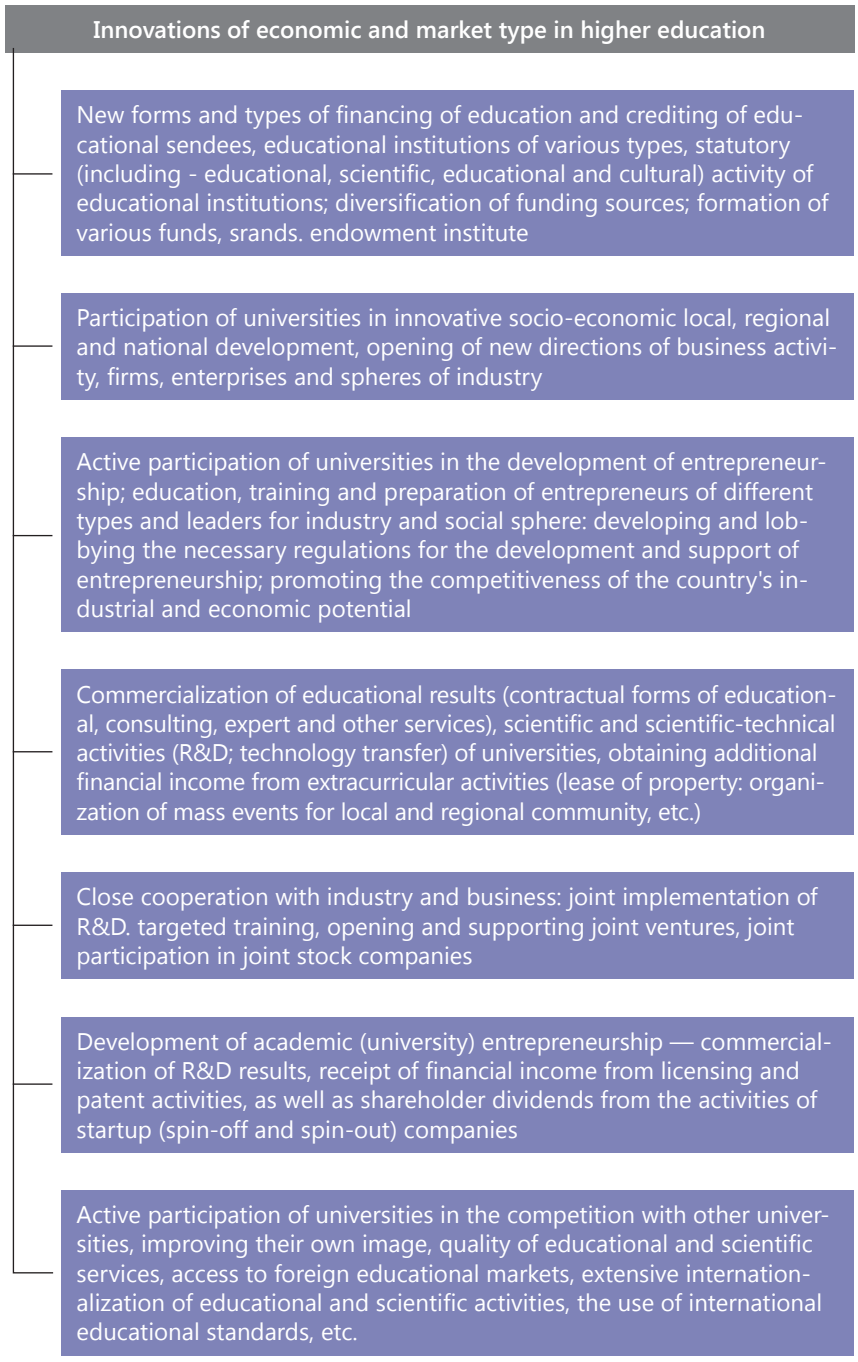

Fig. 2. Innovations of economic and market type in higher education

opment and support of entrepreneurship;

› promoting the competitiveness of the country's industrial and economic potential.

6. Development of academic (university) entrepreneurship – commercialization of R&D results, receipt of financial income from licensing and patent activities, as well as shareholder dividends from the activities of startup (spin-off and spin-out) companies.
7. Active participation of HEI in competition with other HEIs, improvement of own image, quality of educational and scientific services, access to foreign educational markets, wide internationalization of educational and scientific activity, use of international educational standards, etc.

Note that *innovations in economic and industrial development, dependent on market requirements,* are the most painful, debatable and unacceptable for a significant number of educators and scientists. The intrusion of market mechanisms into the academic sphere contradicts in many respects the notion of "pure science and education", which are independent of financial interventions and financial pressure. However, it is also clear that in the context of total commercialization of all spheres of human life, global financial crises and the constant reduction of funding for science and education (and especially higher education), the question of "to be or not to be" really faces a significant number of HEIs and research institutions, and also a large number of educators and scientists in all countries of the world. In those countries where education and science are actually supported, the necessary conditions have already been created for their civilized alternative financial support.

Innovations of technological type are innovations in the system of education and pedagogical activities caused by the development of science and technology, search and acquisition of new knowledge, dissemination (transfer) and introduction of new knowledge and new technologies, application of innovative information technologies, computer equipment, remote forms of training, web design, use of information and communication networks, Internet and Intranet, information and innovation management, as well as innovation marketing *(innovations of scientific and technological progress).*

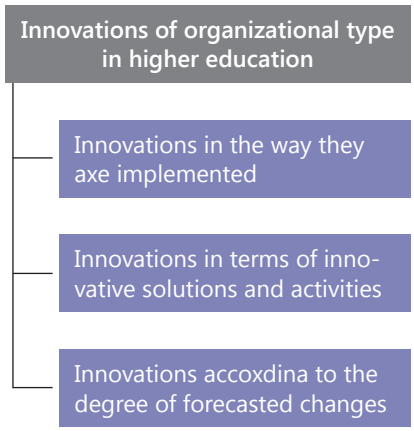

Fig. 3. Innovations of organizational type in the higher education system

Innovations of organizational type (Fig. 3) are:

- Planned, systematic, periodic, urgent, sudden, spontaneous, random innovations (innovations in the way they are implemented).
- Innovations local, mass, global, etc. (innovations in the scope of innovative solutions and activities).
- Innovations that correct, modify, improve, modernize, radical, revolutionary, etc. (innovations according to the degree of predicted changes).

Innovations of educational and pedagogical type (Fig. 4) are:

- Innovations in the educational process, training course, in the field of education, at the level of the education system, in the management of the educational process (education), etc. *(innovations in the pedagogical process).*
- Innovations in collective and group education, in individual types of education (under the guidance of a teacher), tutoring, alternative, family education, etc. *(innovations by types of interaction of participants in the pedagogical process).*
- Innovations in the development of certain abilities of students, teachers, educators, namely: development and improvement of their knowledge, skills, abilities, competencies, etc. *(innovative changes in the personal development of educational entities).*
- Innovations-conditions that ensure the renewal of the educational environment, socio-cultural conditions, etc.; innovations-educational products (pedagogical tools, projects, technologies, etc.); managerial innovations – new solutions in the structure of educational systems and management procedures that ensure their functioning *(innovations in the functionality of the subjects of educational systems).*
- Innovations in the activities of one teacher, methodological association of teachers, at school, in a group of schools, in the region, at the state level, at the international level, etc. Innovations in the activity of one HEI teacher, faculty, all HEI, all HEI of the region, state, at the level of the system of international higher education *(innovations on the scale of their distribution).*
- Innovations that combine different types of pedagogical innovations in the education system and are inn ovations in educational institutions of a certain type, for specific professional and typological groups of teachers *(innovations in socio-pedagogical significance).*
- Innovations that combine different types of pedagogical innovations in the education system *(comprehensive educational and pedagogical innovations).*

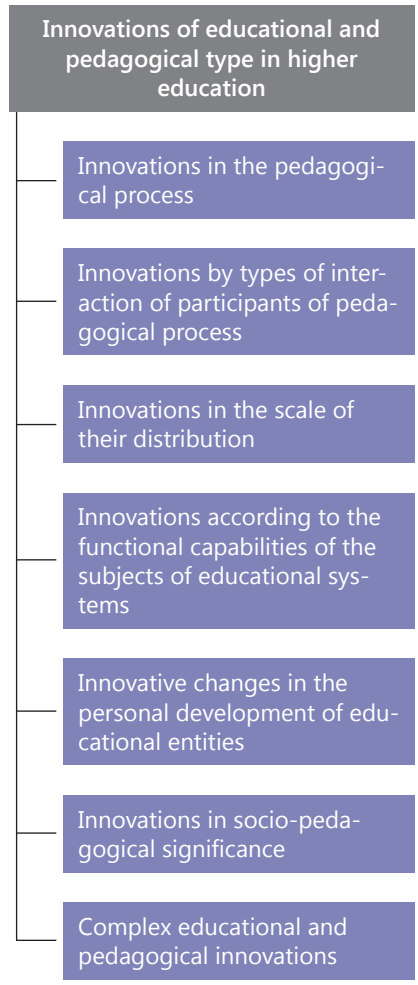

Fig. 4. Innovations of educational and pedagogical type in the system of higher education

Innovations of structural and pedagogical type are innovations in the formation of goals, objectives and content of education (teaching and education), in forms, methods, techniques, in learning technologies, in teaching aids, in the diagnostic system, in control, in evaluation of results, etc. *(innovations in the structural elements of educational systems).*

Innovative information technologies, information and innovation management, as well as innovative marketing are widely used in the management of innovation in education and and uniting in the group of means and tools for innovation management in education (Fig. 5). They can take place in almost all types of the above pedagogical innovations in the education system, which can lead to innovative changes to achieve new quantitative and qualitative parameters of education.

Information technologies in education use computer technology, Internet and Intranet, remote methods of organization and management of educational activities, are used to develop a variety of information retrieval systems and information, advertising and marketing materials (using web design).

Information management in education, based on the use of information technology, is a subsystem of decision-

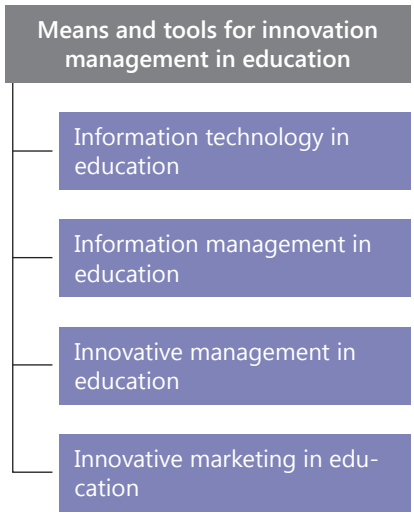

Fig. 5. Means and tools for innovation management in education

making and aims to manage the processes of creation, processing and distribution of information in the field of education. One of the main functions of information management in the field of education is to develop an organizational structure that would provide timely and objective information in the right place, at the right time and in a convenient way to make effective decisions. The introduction of information management in education is dictated by the following circumstances: scientific and technical development of society, integration and effective use of funds for development, application and effective use of information technology (set of information resources, tools, methods and technologies that contribute to the effective management of educational activities), including – development and implementation of management decisions in the field of education; the need to integrate all the data that determine the efficiency and effectiveness of the education system as a whole and each of the educational entities (its components).

Innovative management in education is a system of strategic management of innovation processes in order to study the main directions of educational, scientific, technical and industrial activities and justify a set of measures for the implementation of innovation strategy. Its tasks are:

- development of plans and programs of innovative activities in the field of education;
- development and implementation of a unified innovation policy in the field of education;
- training of scientific and pedagogical specialists and providing all areas of educational activities;
- providing educational activities with the necessary resources (material, labor, financial, information);
- planning and selection of the best projects of educational innovations (innovations) and control over its development;
- creation of special groups of management and control over innovation activities in the field of education at all stages.

Innovative marketing in education ensures the effectiveness of the educational system and educational institutions in the market of innovations in education, aimed at forming or identifying demand for educational services in order to best meet market demands and needs of society. Innovative marketing is based on the use of new ideas for educational services and technologies that best contribute to achieving the goals of the education system and individual educational institutions.

Innovative marketing in education is a function of innovation management in education. It begins with the search for new ideas for educational services and technologies that can best meet existing and potential demand with their subsequent materialization and commercialization, and ends with the stage of saturating the life cycle of innovation. Carrying out of marketing researches is necessary for the purpose: studying of a conjuncture of the market of educational services; identification of inquiries, tastes and preferences of consumers of educational services; forecasting the dynamics of demand for educational innovations; developing a marketing strategy for innovation in education, etc.

The purpose of innovative marketing in the field of education is to achieve the final practical result of innovation. It:

- focused on gaining a certain market share of educational innovations in accordance with the long-term goal for which the innovative project was developed;
- integrates research, production and marketing activities into the educational management system;
- focuses on the long-term perspective, which requires marketing research, obtaining on their basis innovations that ensure highly efficient economic activity in the field of education;
- adapts to the requirements of potential consumers of innovation in education with a simultaneous targeted impact on their interests.

Consider in more detail the content of innovations of the types discussed above, as well as some possible areas of practical innovation in education.

Innovations of scientific and technological progress. These may include:

- Use of information technologies in the process of innovation management of the education system (including HEI as a subject of the higher education system): information and innovation management, as well as innovation marketing.
- Organization of distance learning – implementation of distance courses (disciplines, subjects from the curriculum), automated control of students' knowledge (testing), teleconferences and Internet conferences and seminars based on on-line information technologies, software platforms such as Blackbord, etc., use of local intranet communication systems, etc.
- Use of information technology in the educational process: learning web design and the use of IT technology in professional activities. Including: e-business (E-business), automation of research and design, automation of decision-making and production processes, information technology in business, management, marketing, etc.

Organization of distance learning courses according to the scheme: invi-

tation of foreign specialists – teachers of foreign HEI for teaching (reading) introductory (instructional) lectures → distance learning of the discipline (course) → remote 3–4 intermediate tests in the presence of a dean's representative → conducting the final exam according to the course (subject) – remotely, in the presence of the dean (deputy dean) → remote assessment → enrollment (entry) of the assessment in the electronic record book (transcript) of the student.

- The use of the latest methods and technologies in the implementation of universities and other HEI and research institutes of basic and applied research; search, comprehension and dissemination of new knowledge; design and construction of new equipment; development and transfer of new advanced technologies; implementation of R&D results for local (local), regional and national socio-economic innovation development.
- Creation and launch of new spin-off and startup companies by research business universities.

Innovations in the structural elements of educational systems. The main purpose of such innovations is the training (education and upbringing) of a modern specialist of international level, who:

- fluent in the national, state (Ukrainian) language, foreign languages – English and second (European or Eastern), Russian;
- has the necessary professional knowledge and skills;
- is able to use a computer, information technology and software;
- is able to work in a team;
- has high moral and ethical principles and humanistic beliefs;
- focused on a healthy lifestyle and environmental behavior;
- patriotic and ready for integration into the international community.

The following new progressive tendencies in forms, methods, receptions and technologies of training are important for improvement and increase of efficiency of preparation of experts:

- Organization of included training – study abroad: study of courses (disciplines) according to the curricula of American HEI in foreign HEI), theoretical and practical (industrial) practice in foreign (abroad) and joint (with foreign and Ukrainian capital) companies, firms, corporations, financial institutions, enterprises.
- Organization of international theoretical and practical seminars for students, scientists, teachers and staff on business management, the role of leadership in socio-political life and economic activity of the world with the invitation of foreign experts.
- Invitation of specialists from foreign countries to read individual lectures, lecture series and teach courses (disciplines) in the curriculum in English (German).

Also very important for the integration of scientific and pedagogical and logistical potential and the introduction of innovations in education, science and technology, development of new technologies and new knowledge is the practice of combining different types of HEI in training, research and production complexes and technology parks.

Innovations in the pedagogical process. Such innovations include:

- Introduction of a system of credit-module training, intermediate (3–4 times during the semester) testing for each course (discipline) with the issuance of an integrated assessment for the entire passed (mastered) course (discipline).
- Maintaining an electronic transcript (transcript) of each student, abandonment of the practice of "rearranging" unsatisfactory grades (scores) from exams (exams, tests, tests) with the right to re-listen to the course (discipline).
- Organization of the educational process on the principles of interdisciplinarity and multidisciplinarity. This allows HEI students to plan their workload and time in such a way as to gain more useful knowledge, to choose at will those additional courses (disciplines) in which there is a need, to receive (if necessary) a related (second) profession (specialization).

Innovations by types of interaction of participants of pedagogical process. The use of the latest information technologies, Internet and Intranet networks, distance learning systems in HEI lead to the reformatting of the division of students from academic study groups, courses (in their usual sense) into virtual temporary units (individual choice of students). Depending on the students' choice, they can study remotely or individually (individually) or in a group (collectively). You can study remotely both at HEI and at home.

Innovative changes in the personal development of educational entities. This type of innovation includes:

- new forms and methods of testing the knowledge, skills and abilities of pupils, students, teachers;
- continuous improvement of knowledge of HEI graduates, employees and teachers through continuous training and professional development throughout life;
- organization of systematic exchange of students and teachers between domestic and foreign HEI, as well as – exchange of HEI experience of different countries;
- invitations for teaching activities – lectures, seminars and workshops of famous scientists, specialists in various fields of economics, successful entrepreneurs;
- organization of theoretical and practical training of students in real conditions of economics, research and economic activity.

Innovations in the functionality of educational systems.

Innovations-conditions that ensure the renewal of the educational environment, socio-cultural conditions, innovations-educational products and management innovations may include:

- Organization of the educational process according to the curricula of leading HEI economically developed countries. From business – entrepreneurship, marketing and management (including management in the field of international business) – primarily in the American programs BBA and MBA, as well as curricula and

HEI programs of other countries (UK, Germany, France, Spain, Scandinavia countries, Benelux countries, etc.).
- Combining Ukrainian standard curricula with the curricula of leading foreign HEIs in order to integrate the best achievements of domestic and foreign higher education systems in a specific field of knowledge, science and technology.
- Democratization of the educational process, providing students with greater opportunities for free choice of disciplines from the curriculum, expanding the list of disciplines of free choice of students and HEI in the curriculum.
- Involvement of student assets of HEI and the public in the process of improving the educational process and statutory activities of the institution.

Innovations in the scale of their distribution. It is desirable to innovate in the activities of each individual teacher of a particular educational institution, and all educational institutions: in the region, at the state level, at the international level (innovations and innovations in the activities of each HEI teacher, faculty, all HEI, all HEI region, state, at the level of the international higher education system).

Innovations in socio-pedagogical significance. Important at the present stage of globalization of the world economy and social globalization processes is the creation of innovative international temporary teams of teachers. This primarily applies to Ukrainian HEIs. Invitation of well-known specialists in various fields of knowledge, science and technology will improve the quality of the educational process, encourage students to learn English (international language of business, science and technology) and other foreign languages, allow them to communicate freely with colleagues from abroad, read foreign literature in the original, independently study the world's scientific and technological achievements.

The complex or *comprehencive educational and pedagogical innovations* that combine different types of pedagogical innovations in the education system include:
- creation of innovative educational institutions: virtual HEI; open HEI; international (joint) institutions, including – institutions of international education;
- creation of international education programs – based on a combination of foreign and domestic curricula and programs with teaching disciplines in both native, national language and foreign (English or other) language;
- creation of innovative educational programs based on interdisciplinary and multidisciplinary curricula, new information technologies, distance and open learning, individualization and intensification of learning.

Innovations in the way they are implemented. It is advisable to carry out planned, systematic and periodic educational innovations, namely:
- Introduce new technologies, develop new and improve basic educational technologies, organize the educational process and research activities in HEI.
- Develop new forms, methods and content of education, respond flexibly to the demands of social development, the market of educational services, the requirements of economics and production.

Innovations in terms of innovative solutions and activities. Innovations should take place both in individual departments of educational institutions and in educational institutions as a whole. Innovations in public, municipal and private HEIs contribute to the spread of innovations throughout the education system.

As for *innovations according to the degree of forecasted changes*, all types of innovations that lead to the further development of science and technology, the formation of a modern specialist of international level are necessary.

Innovations of economic and industrial development, depending on market requirements, create new opportunities, forms and sources for further development and support of the education system, its structural components, opening of new specialties, professions in educational institutions, promote compliance of education, research and education. cultural services to the market needs of society. These include:
- Participation of private capital in the creation and financing of educational institutions of various levels, educational and research programs, lending to students and researchers.
- Creation of new (own) educational institutions for corporations, companies, productions and enterprises in vocational training, advanced training, provision of related professions.
- Creation of the latest training, research and production complexes (with the participation of various types of HEI, research institutions and industrial enterprises), technology parks, etc.
- Development of academic (university) entrepreneurship: interest and stimulation of teachers and scientists to carry out research, discoveries and inventions, disclosure of information on the results of R&D, their patenting and licensing for further practical implementation.
- Commercialization of educational results: contractual forms of providing educational, consulting, expert and other professional services.
- Commercialization of the results of scientific and scientific-technical activity of HEI through: patenting and licensing of discoveries, inventions, other important results of R&D; technology transfer; formation and launch together with industrial enterprises (business structures) of new companies (spin-off, spin-out, start-up), etc.

It is also worth emphasizing that these innovations can be of the following types:
- Radical (basic) innovations – revolutionary changes in the development of technology and society, the formation of new industries.
- Increasing, modifying (improving) innovations – improving the properties of existing equipment, technologies and services.

From the above we can conclude that innovation in higher education is a process of creating, implementing and disseminating in the practice of higher education new ideas, tools, scientific, pedagogical, organizational and managerial and economic methods and technologies, which increase the achievement of structural components of the higher education system and its transition to a qualitatively higher level. This activity is aimed at building a knowledge society with an innovation-oriented type of economy and is related to:

- formation and accumulation of new knowledge;
- use and commercialization of research and development results;
- transformation of scientific research and development, other scientific and technological achievements into new or improved products, technologies, services introduced to the market, into new or improved technological processes used in practice, or new approaches to social services;
- formation of intellectual and formation of human capital;
- the use of new tools, methods and technologies to accelerate the economic growth of society.

In view of this, innovative activities in the field of higher education, science, educational, scientific, educational and cultural services have a socio-economic essence, combines a set of organizational, economic and social actions aimed at creating a knowledge society with innovation-oriented type of economy. Such innovative activity is associated with the formation, capitalization and commercialization of intellectual products – knowledge, technology, educational and scientific services, etc. and is one that should develop faster, contributing to real reform and renewal of education in accordance with new requirements and demands of society and time. One of its most important components is the innovative activity of entrepreneurial universities, which is essentially "academic" or university entrepreneurship, characteristic of the new capitalist environment – "academic capitalism".

Since the adoption by the US government of the Bay-Dole Act (the Law on Patents and Amendments to the Trademark Act) on December 12, 1980, the era of rapid economic growth in the country began, which became a prerequisite for the phenomenon of "academic capitalism". According to S. Slaughter and L. Leslie [2], the essence of "academic capitalism" is the transformation of scientific and teaching activities into a kind of entrepreneurship: the implementation of research projects is directly dependent on the receipt of cash subsidies from individual corporations. Within the framework of "academic capitalism", the activities of research institutes and centers within the university structure are aimed at increasing the potential for public application of knowledge. The authors give the following interpretation of academic capitalism: "To conserve or increase resources, researchers and faculty had to increasingly compete for foreign dollars, which proved to be related to market-oriented research related to various applied, commercial, strategic and targeted research. And whether the money comes in the form of research grants and contracts, partnerships with industry and government, technology transfer, or in the form of attracting more students who can offer higher tuition fees. We call academic capitalism the market or market-like activity of a scientific and educational organization, as well as its employees to attract external funds" [2]. Note that the term "academic capitalism" was first introduced in 1990 by E. Hackett [3] to denote important structural changes in science.

"Academic capitalism" sets new directions for the development of modern higher education and manifests itself on three levels: institutional, departmental, individual. Academic capitalism at the institutional level is realized against the background of changes in the funding of higher education institutions, the reduction of public funding and the need to find sources of additional funds. The study of academic capitalism at the departmental level is of interest because it is here that various activities are carried out, employees adapt to new values. At the individual level, within the framework of academic capitalism, there is a revision of the distribution of time between the main activities of the teaching staff: teaching, research, services [4].

S. Slaughter, G. Rhoades [5] note that as colleges and universities become more entrepreneurial in the post-industrial economy, they focus on knowledge less as a public good than as a commodity to be used for profit-making activities. The authors emphasize the more aggressive involvement of US free trade in the new knowledge-based economy, and note the significant efforts of colleges and universities to develop, market and sell research products, analyze the competition of services and consumers of goods in the private market.

Following the changes in the policy and practice of educational and scientific activities, revealing new social networks and schemes of knowledge creation and dissemination, as well as new organizational structures and expanded management potential for communication between free economic zones and markets, the authors express concern about the development of nonprofit basic science. Depicting the higher academic capitalist regime of knowledge formation and marketing (i.e., teaching), which is expressed in the work of teachers, the activities of departments and administrative behavior, they note the attraction of business interests and commercialization of knowledge over the so-called pure science. At the same time, they reveal internal contradictions in the regime of free economic activity, noting the new state of state subsidies, which become embedded in new revenue streams, as well as shifting the emphasis from educational and research services to student clients to attract resources from them. The authors understand the trajectory of American higher education from non-profit educational and research-oriented to commercially-oriented to generate profits from the widespread distribution of new goods

HEIs – the results of educational and scientific activities with a bias towards applied research commissioned by external corporations.

In the last decades of the twentieth century, the leading role of higher education was the development of theoretical and applied aspects of economics. As the penetration of market relations and entrepreneurship in purely academic activities, as well as in other intangible (humanitarian) spheres of human activity has become inevitable and in fact already happened, there is an urgent need to improve scientific knowledge and provisions of economics and search for new areas of economic research in the field of intangible production. Thus appeared such new areas of economics as: knowledge economy; socially-oriented economy; economics of social activity; economics of education; business economics; economics of innovation; higher education innovation, etc.

It is advisable to note that the theoretical foundations of the emergence of university entrepreneurship and the transformation of ordinary universities and colleges into entrepreneurial HEIs, special features and conditions for successful transformation and existence of university entrepreneurship in different countries are also discussed in research books and articles [6–11].

Next, let's focus on those aspects of academic capitalism that relate to CONS.

It is important to emphasize that many scientific publications have recently appeared criticizing academic capitalism and the over-entrepreneurial activities of HEIs in the direction of profiting from the development and commercialization of applied research instead of pure scientific activity and basic fundamental research [12–14]. For example, R. Münch [12] notes that academic capitalism is a unique hybrid that combines the scientific search for truth and economic maximization of profits. It turns universities into enterprises that compete for capital accumulation, and enterprises into producers of knowledge who are looking for new discoveries that can be turned into patents and profitable goods. Academic capitalism is at the intersection of research, maximizing economic profits and innovation policy. It exacerbates the institutional conflicts of interest associated with corporate funding for academic research. The logic of the accumulation of academic capital is well reflected in the essence of the business university. The consequences of accumulating academic capital for science are increased inequality, excessive investment at the top, in top free economic zones, and underinvestment among ordinary free economic zones, and the organizational consequences of accumulating academic capital are increased quality assurance for a variety of applied research and creativity.

Under academic capitalism, forms of management and control were transferred to the University of Entrepreneurship from capitalist enterprises. The university's leadership gained decision-making power, while the senate and faculty councils lost much of their influence, causing a heated conflict between the university's authorized leadership and the "disadvantaged staff." Management assumes the authority to position their university in the fight for ranking positions, always with a view to rising to a higher level university at the next stage of their own careers. These are so-called "general administrative universities", especially typical of middle-class academic universities. University management must be able to take strategic action: their targeted arrangements and the allocation of performance-related resources are used mainly to compete other universities. Accreditation of training courses and strengthening of teaching quality management measures, for example, through regular evaluation of training courses and seminars by students, emphasize the new understanding of students that they are "clients" of HEIs and are in the academic business sector. Enhanced market autonomy of the University of Entrepreneurship implies a decrease in academic freedom and increased control by the university management.

The University of Entrepreneurship is a capitalist enterprise that applies comprehensive management control to penetrate all operational processes and focus on the strategic goal of maximizing profits. Today, control in business freelancers works primarily through the tool of marketing business processes, which have become research, student education, other educational and research and related services that were previously the prerogative of ordinary academic universities. This marketing of operational processes is complemented by a comprehensive control system that determines the profitability of even the smallest technological units of educational activities using indicators at any time and shows what to do in what place (at the department, in the research laboratory, at the interdepartmental level) to increase overall profitability. The workforce in the business free enterprise consists of employees-entrepreneurs who work under the general guidance of the founders and appointed by them entrepreneurship-oriented rector, his deputies, councils, etc. As the marketing activity of entrepreneurial free trade is aimed at purely market achievements – additional financial income, profit, image, competitiveness in the markets of applied research orders and potential entrants, basic science is now left without the necessary attention, which inhibits the development of science, technology and education.

Conclusion

Academic capitalism encompassed all spheres of scientific, research, educational activity, as well as other spheres of social and economic activity of modern society. Obviously, it is important to strengthen the positive impact of academic capitalism – PROS and at the same time reduce its negative impact – CONS. And, if the rapid development of academic or university entrepreneurship already provides tangible benefits for the economic growth of countries, regions and the entrepreneurial universities themselves, then the slowdown and reduction in basic fundamental scientific re-

search requires immediate active and constructive intervention of responsible government bodies and institutions. The future of both fundamental science and basic knowledge of mankind, as well as the intellectual and scientific and technical capital of society, depends on purposeful government actions. And this, in turn, is the necessary basis and foundation for the further development of all countries.

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"Академічний капіталізм": плюси та мінуси в розвитку науки й вищої освіти

Середовище академічного капіталізму, яке охопило майже всю сферу науки та вищої освіти, здійснює на них як позитивний (ПРОС), так і негативний (КОНС) вплив. Академічний капіталізм різко прискорив комерціалізацію результатів прикладних досліджень і розробок університетів та науково-дослідних інститутів і дозволив цим організаціям і установам значно капіталізувати свій інтелектуальний капітал. Це надало поштовху розвитку прогресивних інновацій та видатних винаходів. Наприклад, у системі вищої освіти спостерігається інтенсивний інноваційний розвиток, що, безумовно, можна віднести до позитивного впливу академічного капіталізму на розвиток матеріального, технічного, наукового та інженерного потенціалу університетів та коледжів.

З іншого боку, гонитва за прибутком та загальний пошук можливостей комерціалізації результатів НДДКР, переважно результатів прикладних наукових досліджень та експериментальних розробок, призводить до значного зменшення попиту та уваги до розвитку фундаментальної науки та пошуку базових наукових цінностей. Це призводить до уповільнення виробництва нових базових фундаментальних знань та уповільнення інтелектуального розвитку суспільства.

Також у багатьох наукових публікаціях, що з'явилися останнім часом, піддаються критиці наслідки впливу академічного капіталізму на сферу науки й вищої освіти. Надмірна підприємницька діяльність ВНЗ у напрямку отримання прибутку від розвитку та комерціалізації прикладних досліджень замість чисто наукової діяльності та основних фундаментальних досліджень призводить до втрати позицій університетів і коледжів як "храмів науки". Можливо, все ще існує невелика кількість академічних закладів вищої освіти та досліджень, що продовжують проводити фундаментальні наукові дослідження, які важко комерціалізувати, але які є справжніми "науковими знаннями", або, іншими словами, знаннями про людство.

У даній роботі аналізуються інноваційні зміни в системі вищої освіти, викликані середовищем академічного капіталізму. Також аналізується негативний вплив академічного капіталізму на сферу вищої освіти й науки.

Ключові слова: академічний капіталізм; підприємницький університет; інновації у вищій освіті; інноваційний розвиток сфери вищої освіти.