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Evolution of University Ideas: Perspectives of Development of Higher Education in the Face of New Economic Realities

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Abstract: The study refers to the historical models of the university: corporate (Medieval), classical (Humboldt) and modern (innovative). Analyzes the shortcomings of the modern university: quantification (emphasis on quantitative indicators), increase in costs as a result of price Baumol's disease, a quantitative increase in teachers and people enrolled in universities, the widening gap between research and teaching university roles. Specificity of the modern university which in spite of the higher education crisis continues to play a key role in society. The modern university model that meets the challenges of culture and the economy should be focused on the formation of a new type of individual innovator. Innovators as the substrate of many modern technological processes have a powerful transformative effect on the economy and culture. A necessary condition for the formation of layers of innovators is the inclusion of students in the innovation activities of universities. Education should have an integrated character. An important role in the modern university should play a socio-humanitarian knowledge. In place of the Humboldt University, the university comes Leonardo. University Leonardo the most adequate to the modern cultural and economic situation. It is based on three fundamental principles: interdisciplinary research programs, elitism and promotion of non-standard models of scientific and technical research to attract young professionals to innovation.

Key words: University, Humboldtian Model of higher education, Baumol's cost disease, analyzes condition, culture

INTRODUCTION

Modern institute of education is going through crucial times. For centuries, the tradition of folding training and knowledge transfer in universities are now subjected to intense pressure from the new forms of education. Medieval and Humboldt University Model.

The first European universities have arisen about the 12th century and at first they were a privileged association of the main agents of educational activity teachers and students, transformed later in professors and students. University privileges were completely unprecedented at the time-no medieval privileged class or association does not have such power and authority which were provided by the universities. University of privilege is expressed primarily in the four basic rights: "academic freedom", understood as the right of the University to conduct the trial of members of the corporation by its own laws and accordingly, the release of the university of the jurisdiction of the local authorities; the right to self-renewal of the members of the educational community through elections to the vacated professorship; the right to self-government which is expressed in a regular election of the rector; the right to self-disposal of financial assets.

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LITERATURE REVIEW

Despite such a wide autonomy for The middle ages, the first European universities were not institutionalized education they did not have their own buildings, libraries, service and staff were relatively mobile centers of coordination of people working in the field of broad casting and receiving knowledge. Some of the leading universities of medieval Europe were the result of the migration of the founding universities. Because of Padua and the University of Cambridge have arisen as a result of migration of students and teachers respectively, Bologna and Oxford universities. The medieval European university could be described as a mobile and autonomous corporation, uniting people with a common kind of activity and endowed with unique privileges for the period under review.

Further evolution of the oldest universities in Europe revealed a trend towards institutionalization and gradual reduction of the legal and political autonomy. Since, medieval universities were created largely thanks to the support of the church, the main objectives of university education is the reproduction and transmission of traditional scientific and theological ideas about the world. Conservative and social independence, so that was the most striking characteristic features of the medieval university.

However, the secularization of culture processes initiated during the Renaissance, formed a new type of university which in its final form crystallized in the course of the Humboldt education reforms and the opening of the Humboldt University in Berlin in 1810, Humboldt Education Reform, based on pedagogical ideas of I.G. Fichte, F. Schleiermacher and I.G. Pestalozzi it identified the main features of the new model of university education: education of a free and self-determining personality, capacity for independent, spontaneous thinking, syncretism and curriculum universalism, building specific, largely parity relations between the state and the administrations of the universities, the compound actually research activities teaching. Humboldt Model of higher education formed the basis of most modern universities in Europe and North America and has established itself as a very effective system of generation and transmission of knowledge. Humboldt University Model largely transformed the medieval university institution. European University of the new age becomes a research center that combines the functions of a new generation of research programs and knowledge on the one hand and education on the other. In this case, the main task of Humboldt University was just forming and even the cultivation of a new type of an educated person in charge of the national ideals and values of the state. The initial focus of this model of higher education in the educational preparation of future intellectual elites to serve the higher goals of the state and nation during the 19th century has gradually shifted towards research and heuristic functions of universities. What was originally conceived as a necessary and practical aspects of the educational activities, over time it becomes the fundamental tasks of the university while the direct teaching functions are set in dependence on the nominated university professors scientific views and the department are considered as a means of presenting to the student audience of the latest scientific theories as well as the values and ideals of the professional scientific community. In the book "The Decline of the German Mandarins" F. Ringer writes about the violent reaction of the German representatives of the academic community at the University of Berlin offer a reorientation in the preparation of future teachers of high schools with scientific focus their training on teaching itself: "in 1925, the Faculty of Philosophy, University of Berlin declare its opposition any "pedagogization» (Pädagogisierung) universities for the training of future secondary school teachers. The researchers of the memorandum warned of the danger of the gap between research and teaching and teachers considered the gymnasium as potential scientists. They strongly rejected the idea of joining "practical" schools to the universitie".

Humboldt Model of the university as mentioned above has received wide distribution in the higher education system of many modern states. However, it would be wrong to say that this model has remained quite constant over the past two centuries. Firstly, we have previously pointed out that the main role of the university in society, concludes the opinion of Humboldt primarily in the cultivation of a new type of personality, eventually reinterpreted and the university is perceived as a center of research and a source of innovative ideas. Second, the university becomes less autonomous and more and more dependent on external institutions, whether state bureaucratic mechanism of management of higher education in the Soviet and modern Russian or expert advice system in the United States. Third, there is a change and the system of relations between teachers and students in the form of increased autonomy and recent activity. So what is a modern university?

Problems of modern universities: Despite the fact that by virtue of a strong historical inertia, many perceive the modern university in line with previous ideas about the Humboldt model, the reality is somewhat more complicated. Many modern (both domestic and foreign) higher education researchers say its crisis. The main

features of this crisis is usually called a general decline in the quality of education received in connection with its massification, their qualitative approach to the evaluation of universities and associated with this approach quantification, i.e., quantitative measurement of qualitative characteristics of the university, the differentiation of universities ranking indicators, expressed in their division in the the elite and the people, the lack of a unified, ideological executed and the value of university education platform, increasing the dependence of universities on government structures, etc.

It was seen that the specifics of the crisis tendencies in the sphere of higher education in many processes can be explicated massivization modern university. Mass of today is not the university aims to train scientific and technical elite or for the preparation of a personnel reserve for the existing professions in the labor market. Science today is too specialized and pragmatizirovana that does not allow the majority of university professors as well as in the old days, to combine the two roles (the actual teacher and scientist). In recent decades, there was something under the F. Ringer most feared German mandarins (scientific elite universities) pedagogisation universal higher education. The average university teacher today performs not only function of the professional scientist which was the norm for the Humboldt model of classical university as solves a purely pedagogical application tasks: training and overall preparation of students for the conditions of life in society, fostering universal skills to perform work tasks (for example, to focus on problem, the search options to solve it), adaptation to work in a team, etc. Standard mass university today is a continuation of sredneshkolnogo education and becomes a natural element of higher education.

By the system of binary oppositions a universal student in the 20th century, the university added also a favorite concept of Ortega y Gasset "masses". Weights are included in the science and education, not only as an object of study. No it is a subject included in the education system. There is a problem and the ratio of the mass of a piece, the elite university education. Initially, all education was MMA, elitist. The higher the level of the education system, the more esoteric knowledge it became expected. Veblen tied occurrence of education with the desire priestly caste to consolidate its privileged status; caste, clan required to pass (created/obtained) knowledge dedicated elected.

Such transformation of the university institutions can not happen painlessly. Many of the problems of modern mass university associated with one hand with social, cultural and bureaucratic inertia Humboldt Model, when the representatives of the government and management in higher education refuse to accept a new, purely pedagogical role of the university and on the other a narrowly utilitarian approach to the state of scientific activity. In the view these two factors-the perception of the role and status of the university in society through the prism of outdated models of Humboldt and the state monopoly on research activities are at the heart of the current crisis of higher education. As pointed out by the American researcher Ben (2014), the problems of modern education "did not arise because of the inherent weakness of the decentralized competitive mechanism and because of its weakening as a result of an unexpected increase in support of science by the central government, guided by vague notions of military superiority and national prestige". All of this is reflected in the "birthmark" of modern capitalist society: the quantification of the activities of social institutions and the so-called Baumol disease price (Tambovtsev, 2012).

The concept of quantification applied to the analysis of capitalist society developed Lukacs (2003) in his research "History and Class Consciousness" (1923) where this phenomenon is defined as follows: "quantification has embodied and materialized shell that covers the true essence of objects; in general it can have a value of the objective form of objectivity only insofar as the subject who is in kontemplyativnom or (alleged) practical relation to the subject, I am not interested in the essence of the subject". Thus, the quantitative qualimetric approach to the qualitative aspects of reality, according to Lukacs is spreading in capitalist society of the modern type and reflects his rationalist (in the Weberian sense) orientation. With the increasing interest in monitoring the state of scientific and educational university productivity arises a need for instruments it controls. Get in recent years in our country scientometric techniques for quantitative measurement of qualitative characteristics of scientific activity-Hirsch index, impact factor, citation indexes show quantification in its pure form. However, there is a problem of discontinuity of direct links between the real qualitative parameters of scientific activity and its quantitative formalization of the reports. According to Lukacs, an official who is interested in the highest possible quantitative terms any activity will not strive for a genuine correlation of these indicators with the actual state of things. Actually, the criticism scientometrics today is based on the amounts of formal non-compliance of the objective situation in science.

MATERIALS AND METHODS

Data and estimation techniques: Another negative aspect of modern higher education price Baumol's disease (named after the American economist, who described this phenomenon). The essence of this phenomenon lies in the fact that while the growth of costs in some areas (the performing arts, education) observed stagnirovanie overall productivity of these areas. This is due to technological backwardness of these activities from the rest. For example, the productivity of classical university education has increased slightly over the past few centuries. The contingent of teaching staff, the number and volume of audiences-all this has its limitations. With the constant growth of the costs of higher education universities have to raise tuition fees. Moreover, in practice, this leads to the desire of universities to recruit more students and graduate students to cover their costs which in turn negatively affects the quality of education and training of teachers.

Thus, the direct cost of US universities increased from 1904-1965. The only exceptions are the periods of the First and Second World Wars and the Great Depression. Costs per student grew up in USA universities during the period 1949-1995 at an average rate of 7.4% per year (which is much higher than the consumer price index) (Fig. 1 and 2).

The new university model: The crisis of the modern university are trying to overcome with the help of new internet technologies in education. Today MOOC (Massive Open Online Course-massive open online course) offer all wishing to listen to educational courses of teachers of the leading universities of the world.

MOOC began to appear in 2008 and despite initially skeptical attitude towards them on the part of the university elite, they are now actively cooperating with many famous universities and cover the audience of many millions. So one of the most successful projects of the MOOC Coursera has an audience of >15 million registered users from 190 countries in 1825 and offers 141 different courses from the university. Another resource, Udacity, teamed up with universities such as AT and T and Georgia Tech, to provide remote users to get a master's degree in computer science at a cost several times less than the full-time training.

MOOC can significantly reduce the costs of universities through the expansion and globalization of the virtual student audience. In addition, the MOOC acting as additional "leverage" a fundraiser for the university as they allow the latter to obtain additional sources of funding. MEP technologies demonstrate significantly increased pedagogical potential of the modern university. However, the society and the state are also expected from the university of the performance of his "sacred" function of generating new knowledge and technologies.

Formed to the beginning of the 21th century a global economy based on znanis, makes the universities to look for new, adequate external conditions of the development model. New challenges associated with the market needs, provide the university community more chances to realize their intellectual potential. Also remaining as before, to act in the conditions of academic freedom (through public funding), university researchers and teachers are oriented to business needs and participate in the competition on the global scientific and educational market. The emergence and institutionalization of the third, the

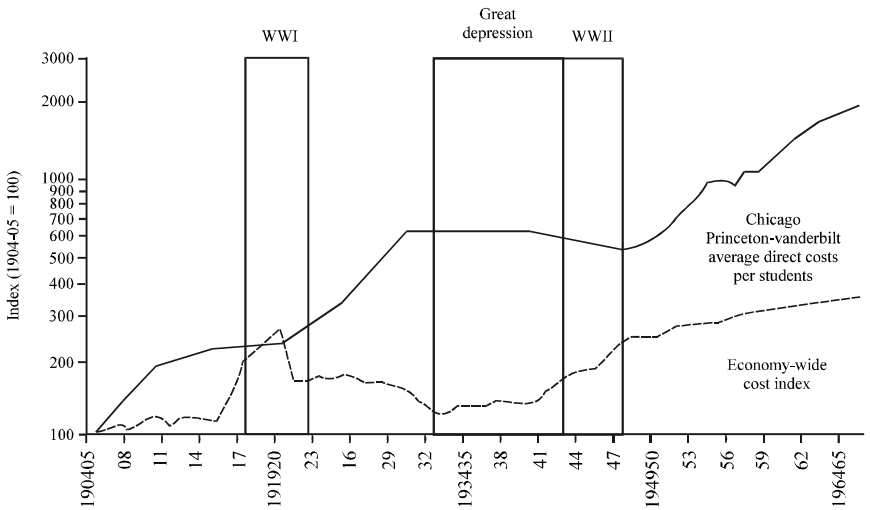

Fig. 1: Direct costs per students, compared with an economy-wide cost index

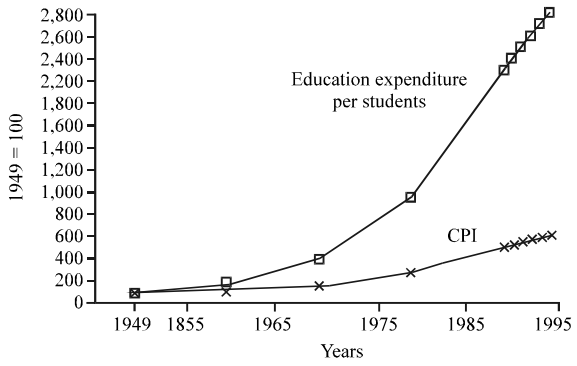

Fig. 2: Price indices: education expenditure per students vs. CPI, 1949-1995

innovative functions of universities in fact are nothing else than the regular academic revolution a series of fundamental transformations, affecting most of the elements of the world system of higher education. Academic Revolution of the late 21th early 21th century. even surpasses its predecessor, the sample of the 19th century on the scales. The current changes are more radical because of their global nature and a larger number of participants both in terms of the people involved as well as higher education institutions around the world.

Currently, the dominant science and practice was the concept of market-oriented innovative university, based on the "knowledge triangle" (education science innovation). The basic concept for the universities of fundamental knowledge and education is a necessary but insufficient condition for their effective development.

Awareness of university capacity to implement its "market" function has not yet been completed. Widely recognized focus of efforts of universities was to obtain income from the commercialization of inventions of scientists working in it. At the turn of 20th and 21th centuries, in universities around the world it has introduced a system of technology transfer departments. Their main tasks include assessment of the prospects of commercialization of inventions made by university researchers and their patenting and further support. The main result of the functioning of the innovation infrastructure of universities considered to ensure the commercialization of inventions, the conclusion of a new innovative product or service on the market, the creation of university spin-off-companies. Just note that the big profits from the sale of licenses for promising technology or stock returns rapidly developing university spin-off-companies a rarity. Moreover as a rule it is a short-lived joy because income from bargain-hunting license for a new promising technology in the average received for a maximum of 2 years and then obsolete technology. Thus in the program of development of the technology transfer of one of America's leading universities the university of California-states that "the bulk of the income of university technology over the past 90 years accounted for a small number of inventions the so-called "blockbuster" and unfortunately, be predicted in advance, what kind of university breakthrough invention will become impossible."

Another trend of the market implementation of the university functions the commercialization of university research through links with industry that is in the first place-through the implementation of the university of contract research and development. In recent years, the global industry is becoming more active in terms of the implementation of applied research at universities. In a sense, it is more reliable and stable option for the university as the industry knows what specific scientific and applied research she needed and she formulates the problem for university scientists. In this case, the university market entry occurs, regardless of the appearance of its scientists no breakthrough inventions. However, this form of commercialization of a number of negative features for the university. Firstly, during the contractual research university it is usually not a full-fledged owner of the relevant results of research activities. Secondly, the company, acting as a scientific research customers, guided by their business interests. Contractual research in most cases are applied in nature and are aimed at the production of knowledge needed to solve specific problems of the customer. In addition, each enterprise has its own staff of experts, sometimes the whole research laboratories and centers, who are professionally engaged in their area of research. In the case of the participation of the university in the contract research becomes therefore to the "catch-up". In this regard, by analogy with the social and economic phenomenon of "catch-up modernization" one can speak of a "catch-up innovatition" of universities in relation to the industry. If the university wants to catch up with the corporate science in a certain area, then it is likely, it is necessary as much as possible to concentrate internal resources on a specific field of research that classical university, covering a wide range of disciplines is an impossible task.

In connection with the above, we come to the conclusion that the contradictory situation in the field of innovation activities of universities. On the one hand, today's leading university strongly emphasizes its innovative mission and public policy of the leading countries of the world assigns to universities the role of the leading players in the production of knowledge and its application market (Hagen, 2008). On the other hand, there

are fears whether the university is reduced to the role of catch-up "innovatization" in relation to the high-tech sector of the economy that is figuratively speaking, to play the "second league". Let us try to give a realistic assessment of the situation of universities on the global innovation market.

The principal innovations in modern conditions, especially in the sectors that determine the pace of the global industry such as information and communication technology, nanotechnology, biotechnology as a rule, very expensive business which only by large investors, a giant industrial enterprises. Not surprisingly, the novice small innovative enterprises see the ultimate goal of development merging with a large enterprise, where the production of innovations put on stream. Small and medium, including venture capital, enterprises can rapidly deploy a small innovation, forming a "suite" of giants. To gain the decisive victory in the battle for global competitive markets, they are not capable.

The university can not fulfill the production functions of large corporations and the very traditional name of small innovative businesses, established at the university, "spin-out" or "spin-off" indicates that there is some kind of "centrifugal force" shaping the direction of its development none. In one of the world university innovative component of its budget it does not play a determining role. And this shows that the importance of the innovative activity of the university is not seen in the financial sector.

It should be recognized that the universities will not be able to defeat the corporation on the innovation market. Such an understanding of contemporary reality has come recently and had difficulty making headway against the backdrop of enthusiasm and dreams about the possible economic impact of the development of university innovation.

A realistic assessment of universities opportunities for technology transfer does not mean that this feature is no longer needed and in its development efforts should, to some extent constrained. The new functional model of the university-a model of innovative university, based on the "knowledge triangle" firmly established in life and is a major paradigm of higher education. It's just that if we consider the high school technology transfer as the main contribution of the University to create an innovative economy, put the top universities in the hopeless situation of "catch-up modernization", when they will try to become what in essence be can not and namely, the market industry.

What universities can offer to the development of innovative economy? What is the unique competitive advantage of the universities which does not allow other players to oust the universities with a global market? In our view, this advantage is to implement the historic university functions-production of human capital fundamentally new quality. Universities should provide innovative economy the main resource of its development highly skilled artists trained in innovative entrepreneurship in other words, the innovators.

While such results of academic research and innovation activities as scientific publications and patents are not a unique product in the world market of science and innovation (scientific articles and patents are "made" in many other organizations), human capital "made" only in universities. And he is the main factor in the successful development of innovative economy. International practice shows that large multinational companies consider their cooperation with leading universities of the world in the first place as a means of selecting and nurturing talented graduates their future employees, who must be highly educated professionals-effective innovators.

RESULTS AND DISCUSSION

We propose a new approach to the interpretation of the well-known university model based on the "knowledge triangle". As before, we consider fundamental and applied scientific research and education as the foundation for the development of innovation activities at the university. However, we propose to change the alignment of priorities in understanding the problems of the university innovation. Not in any way denying the importance of the actual production of innovations in universities, we at the same time convinced that the most important role of the university innovative infrastructure is that it is a "laboratory facilities" for the preparation of experts-entrepreneurs, capable of effective development of innovative activity in their fields of expertise. Just as the participation of students in the scientific work of the department or the laboratory is an integral part of the training of highly qualified specialists and scientists, students participate in the activities of a university department or technology transfer of innovative small businesses is an essential prerequisite for the effective formation of their innovative business expertise. In preparation for a new type of specialists-innovators-innovative university infrastructure plays the same role as a scientific university laboratory-in the preparation of "Humboldt" experts and scholars. A new type of knowledge-based innovation is able to form a new type of university researcher-innovator. What kind of knowledge is aimed at the formation of the individual innovator?

This is what can form a person's ability to independently interpret all manifestations of existence. This universal ability to comprehend things must evolve and grow and not be suppressed and be exhausted in the prescription of professionalism course. The development of this quality in basic subject areas at the same time solves the problem of formation of universal and holistic worldview.

In this way, the developing mind seeker produces the kind of knowledge that allows the mind's eye to cover the totality of any objective knowledge as a whole which makes the task of organizing a large number of targeted information in an easily foreseeable system of meanings. That meaning, not form as is done now in all the sciences. This is the human face of any objective knowledge and open it can only be due to the intrinsic and intense mental work.

Such work is not to everyone's shoulder. Therefore, it is difficult to be a man. But the scope of human goal of education is to create a complete environment for the opening of a truly human-centered holistic organization of consciousness and therefore a purely humanitarian knowledge in all basic subject areas, not only in the humanities. Such is the purpose of the general purpose of education which by vocation is essentially humanitarian and which we do not have.

Only in this way can create an environment of formation and development of the potential in each individual property actually human. Such an environment, in our view and should be the university of the 21th century and the best product of this environment. Man understands, homo sapiens.

What properties must have the educational environment and what should be capable person who interacts with it?

It is clear that the problem of the environment to provide intelligence, thirsty sense, access to sources and ideally to the sources of any objective knowledge. For independent work in such an environment, you need the ability to ask questions, the ability to see the problem, i.e., the fact that we (along with the Greeks) called historical thinking. Here the word "history" should be heard not just academic subject area of the existing Polytechnic faber-education and the kind of knowledge which the Greeks designated by the word "istoruya" in the sense of "The search", "research". It is obvious that the first propaedeutic skills of historical thinking must abide it is within the same name of the subject.

Working with it is very often a source of working with text. Removing the source of meaning and knowledge is possible only if the extraction skills, the restoration of the thoughts of the author of the texts, the recovery tasks that pose and solve the creators of knowledge. It is impossible if there is no understanding of the language as an intellectual culture repositories of past generations, i.e., without the fundamental skills of philological thought. Here the word philology again should not hear the same name of the subject area of the current faber-education and the state of the interior, ineradicable thirst for meaning, ongoing commitment to the discovery of it in a word in other words, thirst gained logo, i.e., the unity of form and meaning in the fullest sense of the Greek word. Lastly, what is required for the ability to articulate issues in the educational environment as an information world evidence, sources of the world? Obviously, any issue deliberately, rather than formal, preceded by some kind of mental model. Therefore, the accuracy of his statement requires precise skills of thinking or more specifically, mental simulation, experience discrimination and identification the two basic operations of any mental operate. These skills can abide the man on the basis of operating and further understanding of the simplest and at the same time most fundamental simulation models, hidden in the well-known but not always understood forms as number, space, time, matter and motion, giving the extremely rich material for didactics. In other words, the backbone of which has increased from the impressive building of the exact sciences.

CONCLUSION

Thus, today there is a new innovative model of university of the future, allowing to overcome the drawbacks of modern higher education sector: to improve the quality of education, reduce costs, reduce dependence (including financial) of universities from state control, to rethink their qualitative approach in evaluating university activities. In place of outdated models of Humboldt University, the university of the model comes Leonardo. Leonardo University has three characteristic features:

Transdisciplinarity: Modern science and culture confronts scientists such complex challenges that can not be resolved within the framework of a single discipline. For example, facing the modern world environmental problem can be solved only by joint efforts of researchers and representatives of different sciences.

Elitism: State and business structures to invest money in unconventional, unconventional and innovative manifestation of the university environment. Use the search strategy and fumble potential growth points, so there is the promotion of the entire breakthrough which differs from the usual forms of life.

Young researchers: Involving young people in research practice as the long-time experience in universities, it brings valuable benefits. Young researchers, innovators have a powerful potential to transform the frozen forms of cultural and social life. Leonardo University best meets the challenges of the modern era. Globalized economy, tehnotsentrirovannaya orientation and increasing dependence welfare states on the level of the technological processes, their efficiency-all this sets a modern university task of preparing the human capital of an entirely different level than they were making before. Stories of successful companies like FaceBook, Google, Uber, etc., indicate the appearance in the arena of world economy of a new type of personality-innovator. Innovators have an unusual view of the world and are capable of creating technology, radically changing society.

Analysis of potential intrinsic characteristics, identify the advantages and disadvantages of such a hybrid model of the new university (the University of Leonardo) is an actual problem of modern philosophy and sociology of education.

Thus, in the course of history, we have identified three university models: Corporate; Classical (Humboldt); Modern (innovation). In addition to the three data models, we can talk about the formation of a hybrid, innovative model of the university of the future which by analogy with the concept of Umberto Eco "open structure" can be called the "Open University".

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