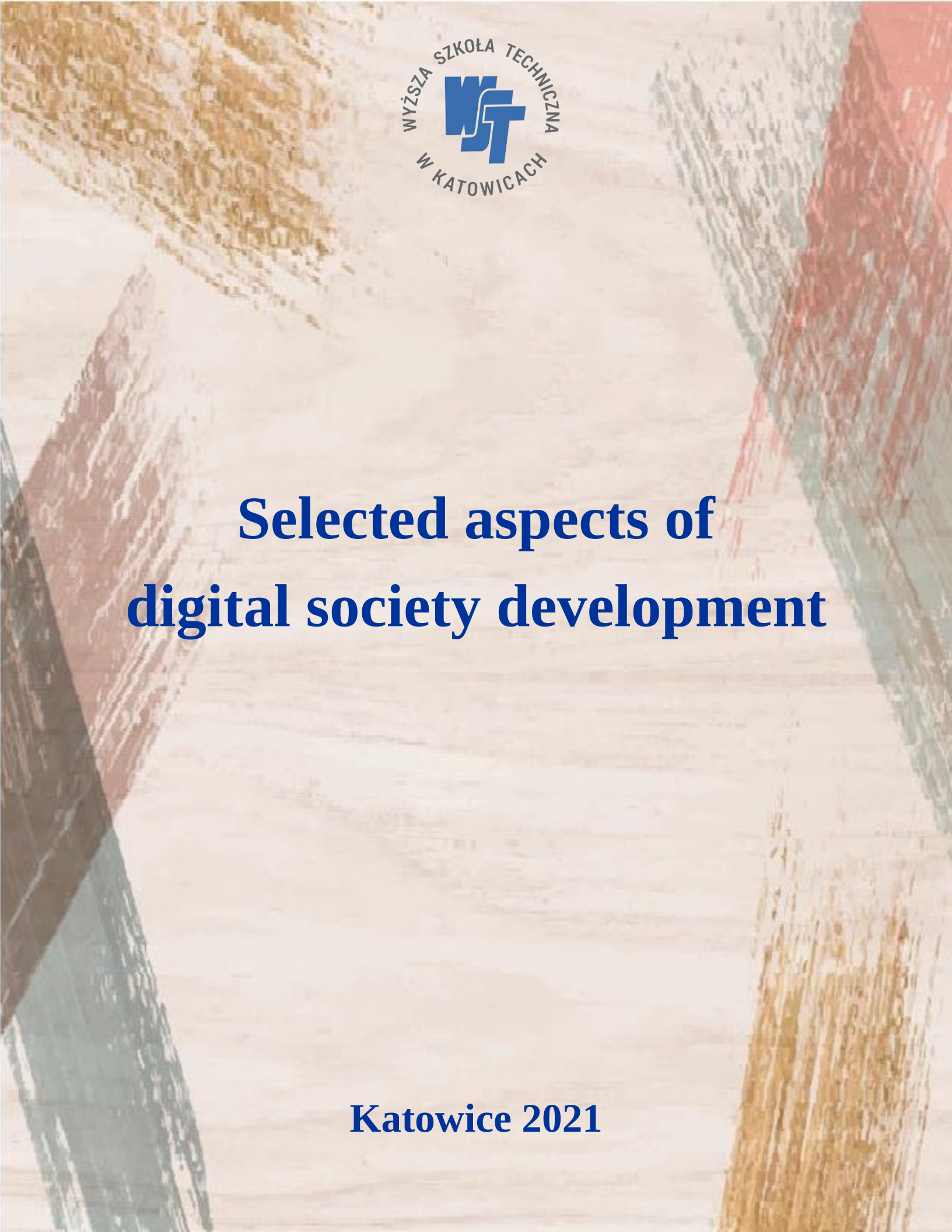

Selected aspects of digital society development

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SELECTED ASPECTS OF DIGITAL SOCIETY DEVELOPMENT

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TABLE OF CONTENTS:

Part 2. PSYCHOLOGICAL AND EDUCATIONAL ASPECTS OF THE DIGITAL SOCIETY DEVELOPMENT

2.1. THE ROLE OF MEDICAL AND EDUCATIONAL SERVICES IN INNOVATION DEVELOPMENT OF ECONOMY

Innovative development is a condition for the formation of a modern post-industrial economy, where the service sector predominates. Innovations are extremely necessary for Ukraine, because they allow accelerating GDP growth and improve the quality of life of citizens. The data of the Global Innovation Index indicate a gradual positive dynamics of Ukraine's rating. In 2009-2010 Ukraine ranked 61st position (out of 132 countries and territories of the world)[135] in a decade in 2019 our country appeared upper 47th place (among 129 countries and territories of the world).[136] However, the strengthening of Ukraine's position is taking place in waves, with setbacks back in certain years. Nowadays among the services that influence the innovative development of Ukraine the best, the main ones are information, communication and infrastructure services. However, the role of medical and educational services is underestimated, which hinders the growth of the country's intellectual capital. It is generally believed that medicine and health care are on the sidelines of national and global innovation processes, but the challenges of socio-economic growth, especially in 2020, indicate a direct link between these economic activities and the results of modern economic development.

The aim of this publication is to define peculiarities of economic relations in public health, education and culture, the role of socio-cultural services in innovation development of society, and identify ways that affect the effectiveness of the impact of medical and educational services on the innovative development of the national economy.

Current statistical information indicates a long-term trend of steady growth in international services' trade. Of course, this primarily applies to commercial services. Thus, since 2008 to 2018, world exports of commercial services have increased by 46 per cent in value terms and services exports grew by an average annual rate of 3.9 per cent.[137] At the same time, there is a structural reorganization of the total volume of services, which in fact covers not only commercial services. Restructuring means the rapid development of medical and educational services under the influence of international demand for them, as well as a reduction in the share of tangible services (transport, communications, trade, etc.) and an increase in the share of net intangible services. The scientific literature pays much attention to the development of medical and educational services in terms of human development, democratization of society and core values for every citizen. The catalyst for this process is the internationalization and globalization of economy, scientific and technological progress, the deepening of the international division of labour. Recently, there have been studies analysed the impact of the COVID-19 pandemic on the development of medicine. At the same time, in the modern economy, knowledge, information and human health are becoming the main resources of innovative development, i.e. the state of the national and world economy depends on these services. This perspective of the problem needs further study.

The methods of analysis and synthesis, deduction and induction, comparison, and scientific abstraction were used by authors of this article and allowed to highlight the features of economic relations that develop in the fields of health and education. These methods have their own specifics in comparison with the economic environment in which other services are provided or material production develops in general. The correlation of quantitative and qualitative ones as well as historical and logical changes, helped authors to identify the main trends related to the development of education and health care at the present stage.

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[135] Global Innovation Index 2009-2010
URL: https://www.globalinnovationindex.org/userfiles/file/GII-2009-2010-Report.pdf.

[136] Global Innovation Index 2019 URL: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2019.pdf.

[137] World Trade Statistical Review 2019 URL: https://www.wto.org/english/res_e/statis_e/wts2019_e/wts2019_e.pdf (date of application: 11. 02. 2021).

Economic relations in public health, education and culture differ from the traditional relations of purchase and sale of standard goods. The specificity of these relationships is that in the society there are high requirements for the principles of social justice. The constitutional principle of equal access to public goods has to be followed. Public resources are limited, so the principle of social justice means that every citizen can receive a certain minimum level of these benefits. Along with that we have to notice that the main method of activity of institutions is socio-economic efficiency. Moreover, there is an impact of socially significant effects (positive externalities). Their importance is confirmed by the statistical facts of rapid growth of expenditures on education and health care in developed countries. Thus, according to our calculations according to the OECD, for the period from 1980 to 2019, health expenditures per capita increased in Canada, Germany, the Netherlands, Switzerland, the United States, Norway, Ireland, Portugal − by 6.8; 7.31; 7.7; 8.1; 10.7; 10.9; 11.1; 13.2 times respectively.[138] Governments in many countries are even vigorously implementing policies of cost containment the unproductive expenses in health care by introducing new technologies into treatment and medicines. More educated and cultured people influence the growth of labour productivity and the development of innovations. They contribute to reducing criminality. The breadth of the range of cultural services affects the choice of place of residence and tourism. Cultural factors transform economic development because they form a system of values and transparent economic behaviour. But in Ukraine, these effects are not taken into account by the state, the wages of workers in this area lag far behind the national average, i.g. in public health salaries are about 70 % compared to the average one.

The role of the state is significant especially in financing of socio-cultural services, introduction of medical protocols and control over their observance; as well as the large share of the public sector and non-profit non-governmental organizations. There is a lack or asymmetry of information for consumers in the market of medical services. In this situation one part of contractual relationships has more information than the other.

The patient mostly also has no medical education, and in emergencies he / she is not able to think at all. He / she also cannot guess about the need to treat a certain disease before its symptoms appear. Obtaining information from the past patient's experience is also limited (compared to buying a regular product), because the disease does not always recur and have the same manifestations. And the doctor, on the contrary, can consciously, for the own reasons, not inform the patient about all the consequences of medical procedures or add extra ones.

In educational sphere we also have a very specific situation. Contracts can be formalized (written) or by tacit agreement. The buyers of educational services are children and their parents. They often do not have complete information to make the right choice of education profile for the benefit of children. The benefits of education are difficult to assess correctly if you do not have enough information. Gathering of reliable information requires a lot of time and money.

There are also difficulties of investment decisions. Usually, in economics and management, investment and innovation decisions begin with the formation of the innovative mission of the enterprise, the selection and approval of strategic investment and innovation concept of the organization.[139] A similar algorithm also applies to individuals and households seeking to make an effective investment and at the same time innovative decision on the optimal use of their limited financial resources. But the consumption of educational services has a long term, especially in medical health care, internships and residencies. The education system prepares future employees. To make the right economic decision − to invest in education or not − a school graduate must analyze the alternative expenses, or the cost of lost opportunities to use other money. In fact, it is very difficult. Some young people want to get a loan, but are not sure that they can repay it on time. Therefore, investment decisions are very difficult for them to make.

The limited access to market for new service providers (professional education in medicine – practical experience under the supervision of qualified doctors

[138] OECD Health Data. Health expenditure indicators. URL: https://data.oecd.org/healthres/health-spending.htm.
[139] O. V. Aleinikova, N. M. Prytula. Innovatsiinyi ta investytsiinyi menedzhment: navchalnyi posibnyk. Kyiv: DVNZ «Universytet menedzhmentu osvity», 2016. S. 38.

We still have in Ukraine a local monopoly. It is due to the presence of schools or district hospitals, clinics, rural dispensaries with territorial consolidation of the population, located outside large cities, where the population is not large enough to have more facilities. If the state does not interfere to such situation, the monopoly position does not let to improve the quality of services.

The research of the role of socio-cultural services in the innovative development of society let us to make the conclusion that health, education and culture are not only the ultimate, but also the intermediate, investment good. As the ultimate goods they ensure the well-being and security of a human, give him/her freedom and activity. As an intermediate, investment good (economic resource) it creates conditions for high-quality reproduction of intellectual capital and active economic self-realization of the individual. It is capital-forming function of these spheres of social life. Hence, we can understand the role of innovative development of society. Cameralists (they were German contemporaries of physiocrates and Adam Smith, who was the classic of political economy) considered public health and a positive demographic situation to be the primary source of the country's wealth. Nowadays, public health and the educational level of the population are approaching macroeconomic concepts along with national wealth, national income, standard and quality of life.

Innovative economy, the use of unique technologies necessitates a mature, responsible person. The age of the first entry of an employee into the labour market increases as well as the duration of secondary education.

Education is a sphere of formation of a system of knowledge that becomes an economic resource and a factor of competitive advantage. Learning is the individual consumption of the intellectual potential of the teacher and at the same time the production of the intellectual potential of the pupil or student. Socio-cultural services actively influence the effective functioning of the business.

Illnesses and unhealthy lifestyle reduce the ability to reproduce intellectual capital. In modern conditions, medicine and education support not only physical but also intellectual capacity of workers, their endurance to mental and research work.

Education helps to reduce youth unemployment. Integration of science and high education promotes the growth of innovations in production. The development of the service sector requires people to master communication skills, as it leads to the growth of interpersonal and intercultural communication (quality of the performer, direct communication with the consumer, etc.). Speaking skills and knowledge of culture of the consumer, the ability to speak to the clients or patients in a clear language and establish contact contribute to communication and promotion of services at the international level). For example, in India, non-punctuality is still a common and quite acceptable phenomenon, which is not true of Japan. Indians are more likely to establish business relations than the Japanese. For Indians, building relationships is also important, but they do not need that much time to start a business. In China, interpersonal relationships play an important role in doing business. Doing business is possible because of interpersonal relationships that are formed over a long period of time. And only later do they begin to give the results. Although in recent years, doing business in China has become less focused on relationships and increasingly based solely on business facts and indicators.

Innovation culture (ability to work in a team, ideas and information exchange, tolerance) contribute to the growth of creativity and the ability to constant search.

The interaction of different cultures enriches the creative potential of international companies, promotes friendly partnerships, resolves conflicts and supports poor peoples in their pursuit of modern development. Culture is also a factor in economic integration and globalization.

The World Economic Forum annually develops the level of global competitiveness of the national economy. Healthcare and education are at the heart of it.

All factors: state and public institutions; infrastructure; macroeconomic stability; health care and primary education, secondary, high and vocational education; commodity market efficiency; labour market efficiency; level of financial market development; technological readiness; market capacity; business improvement; and innovation.

Ranking of world countries in 2020 Ukraine had 85th place out of 141 states.[140] One of the reasons is low funding for health care, development of the informal market of medical services. It is necessary to emphasize that health care and education are its core factors, pillars, in fact. Traditionally, the ranking was headed by Switzerland. The top ten most competitive, included the United States, Singapore, the Netherlands, Germany, Hong Kong, Sweden, the United Kingdom, Japan and Finland.

On the surface, business looks like a collection of business operations. But it is based on economic relations. Business operations are managed by people. And people fall under the influence of the cultures in which they work, in which they were born and grown up. The use of business tools will vary depending on the culture.

Generalization of the information gives us the chance to define regularities of the development of health care, education, and culture in the post-industrial economy.

1. There is a long-term trend of outpacing growth of average expenditures on health care and education compared to their growth in other areas of economic activity. Explosive growth of university costs. Funding of constitutionally guaranteed equal access to treatment. There are some reasons that caused such situation: further democratization of society, attention to human rights, as well as the growth of its role in creating the intangible component of GDP, the introduction of expensive medical technologies; rising costs for the development of new drugs; growth of human expectations for better quality and quantity of medical services, population aging, as well as demographic factor.

The cost of education increases and is not compensated by the corresponding growth of the student contingent. In many European countries, 15-20 years ago high education was funded mainly by the state. But now there is not enough budget money for these expenses.

2. Accelerated development of new medical and educational technologies and information, rapid development of the Internet caused significant changes in educational technologies. Last decades nearly all the societies faced with the necessity of individualization and diversification of education. Nowadays, high school cannot exist normally without continuous updating of courses, increase of number of students who study additionally and retrain.

The main vector of education changed from simple mastering the amount of knowledge of future graduates to the development of their abilities for self-study and the development during their professional career. Today, strict requirements for professorship were developed. The process of updating knowledge accelerated, so society and universities do not have enough time to adapt to such requirements. Later, the society will possibly get negative consequences. Last decade we can observe the transformation of the Internet into a mass medium that leads to a decrease in the educational, professional and cultural level of the Internet audience. Gadgets are becoming the main information bank. People do not rely on their memory any more.

3. The development of contractual relations, public-private partnership, and university and business partnership. Advantages of the partnership can be grouped in such a way: *for the state* it is an increase in funding for basic research, their development in priority areas of national security; *for universities* it is the chance of market entry, diversification of funding sources, opportunities to introduce new equipment, an improvement the efficiency and widening the volume of research; *for business* it is an increase in the influx of talented graduates, developing the scientific base, as well as improving commercial technologies. *In medicine* it is a combination of state social support and market advantages.

4. An advancement of the endowment. The endowment is an auxiliary investment fund, which is created for the support of universities, hospitals, museums, and non-profit organizations, for example, Harvard University's endowment is $ 36 billion. It means that a fund is created. A special account is opened. Patrons' funds are attracted to it. The fund is run by a separate firm that invests money in a particular business, and the university, hospital or museum receives financial income in the form of interest. It is forbidden to spend the general money of the fund (just interest on that deposit). Those finances are used for specific needs or for the further activity of the institution.

5. The improvement the efficiency of public expenditures as well as providing the policy of restraining unproductive spending have to be realized.

[140] The Global Competitiveness Report. Special Edition 2020.
URL: http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2020.pdf.

Nowadays it is necessary to provide the restructuring of health care and education. The segment of medical institutions is the most expensive one, because of that the policy of reduction of hospitals and introduction of intensive medical technologies, the support of general practitioners are carried out. Structural changes one can observe in educational activities: a sharp reduction in classroom hours, increased volume of independent work, expanding the role of libraries and e-learning tools. Moreover, the process of decentralization of financing of health care, education, culture has been realized. Along with that there is a tendency for distribution of tuition costs, gradual increase of paid tuition in the form of targeted contributions, and increase in the number of soft loans. In comparison with the second half of the 20th century there is a reduction of scholarship support for poor youth and access to education in general. Differentiation of universities is obvious. So, here we have some contradictory trends: reducing access to education (for the poor) and increasing it through online learning. Flexible nature of training today is necessary: some people need short courses, others – longer ones. Destruction of old brands of universities has been happening.

6. New management in accordance with modern requirements is significant in public health and educational sphere.

7. *Transformation of the labour market.* In majority of countries the share of citizens with high education is growing. At the same time, the attractiveness of the social status of people with high education decreased. There is a lack of doctors around the world.

8. An internationalization of medicine and education caused the emergence of global competition. Medical tourism market started to develop rapidly. The competition of universities for foreign students and for endowments had been extended. The demographic factor played an important role in the reduction of school graduates.

The sharp competition for the best students and the best teachers has unfolded. The US and Canada compete with the EU. More than that Japan, China, India, Singapore, Australia, New Zealand, Israel, Latin America, and South Africa are also actively involved in this process. In China, state budget expenditures on the equipment and science have quadrupled (from 1 trillion to 4 trillion yuans).

9. Cross-sectoral management to improve the health of citizens. In frames of this activity health insurance system has to develop.

10. *Development of cultural pluralism and effective establishment of business communications between representatives of different cultures*.

There are some contradictions in Ukrainian economy, such as contradiction between market, mixed economy, which is the goal of Ukraine's transition economy, and an administrative-command system for providing socio-cultural services. In a centralized hierarchical system, the state combines the processes of appropriation, possession, disposal and use of facilities, manages institutions and finances them. Vertical cash flows and monopolistic structure are still existed. In a market economy, the practice of many countries (especially Great Britain, Sweden, Finland, New Zealand, Italy, and Turkey) proved that the right to dispose of and management by property and financial flows is delegated to the producer of social and cultural services, although the right to own its objects remains after the state. Ukraine uses this experience.

Discussion. Among the points for discussion authors offer such one: do we need decentralization of social-cultural services? We believe that decentralization of this kind of services leads to strengthening the role of regions in the regulation of medical sector, provided that the common national market is preserved. Territorial communities, oblasts, cities and districts will have the widest range of powers and financial resources necessary for the social development of their regions. Decentralization also means the transfer of a number of authorized ownership and financial autonomy from the center to the socio-cultural institutions themselves, and their transformation into enterprises.

Medical, cultural or educational institution in a market environment is an economic unit. What are the advantages of this position? It plays a significant role in the use of equity and borrowed capital, in optimal allocation of resources and regulation of the industry; it also develops a business plan that gives the chance to attract bank loans and money from other investors. It becomes profitable for this unit to carry out innovative activities, to segment the external

environment in order to study the needs and demand of the population for services. The autonomy of institutions helps to improve the remuneration of employees, their motivation for quality work.

In the current hierarchy, the head of the institution is deprived of maneuver. Personal management is extremely limited. An extensive type of health care development is being reproduced that is incompatible with innovative medicine and education.

It is necessary to develop contractual relations and organization of competition within the public health sphere, as well as public-private partnership.

The system of new relations between hospitals and local authorities allows the introduction of new methods of quality management of health care.

There should be realized structural reformation of health branches, and family doctors have to act as medical and legal entities. It is compulsory to develop E-health system and unify information resources of public health system. Reduction of transaction costs. A single information field allows to combine effective medical and pharmaceutical policies.

– Development of health insurance (MHI and LCA);

– Development of the non-governmental non-profit sector aimed at meeting the needs of society. Subject – public organizations, associations, foundations, volunteer organizations, consumer unions, trade unions, religious organizations, local communities. Provides citizens with additional funding. Medical and educational societies, legal organizations, patrons, boards of trustees. Deepen privatization in health care;

– Reduction of the shadow economy of health care, education, culture. Judicial reform is needed, eliminating the significant dependence of the judiciary on the executive, increasing the level of funding for health care and doctors' salaries, and establishing its differentiation depending on the volume and quality of work;

– Introduction of the latest management.

Conclusions. An urgent step that will allow Ukraine to be in the list of countries for innovative development is the rapid growth of investment in health and education and further reform of these sectors of economy. This is in line with the global trend of faster growth of educational and medical services compared, firstly, with material production, and secondly, with other non-social services. An innovative economy needs educated citizens who are able to work effectively and increase human and intellectual capital. The main ways to influence the effective impact of medical and educational services on the innovative development of the national economy are the following ones: a certain decentralization of the economy and the transfer of a part of ownership competence and financial autonomy from the center to the institutions (it gives the chance to attract additional investments and direct them to medical and educational innovations), the development of public-private partnership (increases the competitiveness of educational and medical institutions in competition for public procurement); formation of the E-health system and pooling of information resources of the industry (allows to reduce transaction costs of institutions and create a single information field for innovative development); legislative and financial support of non-profit NGOs, which try to meet the needs of citizens that are not interesting for the market and state does not pay any attention on those groups of population. The general innovation policy of the state should take into account (include) not only modernization of material production, but also the reform of health care and education as leading sectors in post-industrial society.

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