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A HISTORICAL PERSPECTIVE ON THE REGIONAL DIMENSION OF HIGHER EDUCATION INSTITUTIONS

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This article focuses on the historical evolution of relations between higher education institutions and their surrounding environment. In order to fully understand this complex connection we will start with illustrating the genesis of higher education institutions, the birth of the modern university and the expansion of higher education in relation to the regional development process. We will then point out the role higher education played in the technological development, especially in the postwar period and will show the transformations that higher education institutions need to perform in order to become the key institutions in the new knowledge society.

Keywords: higher education, universities, regional development, knowledge society.

РЕГИОНАЛЬНОЕ ИЗМЕРЕНИЕ ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЙ В ИСТОРИЧЕСКОЙ РЕТРОСПЕКТИВЕ

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Статья посвящена исторической эволюции отношений между высшими учебными заведениями и их окружающей средой. Для лучшего понимания исследуемой проблемы автор проводит анализ, начиная с момента возникновения высших учебных заведений, зарождения современного университета и развития высшего образования в контексте регионального развития. В статье указывается, какую роль сыграло высшее образование в техническом развитии, особенно в послевоенный период, а также определено, какие изменения необходимы в системе вузов с целью их преобразования в ключевые институции в новом обществе знаний.

Ключевые слова: высшее образование, университеты, региональное развитие, общество знаний.

Introduction

In order to identify the roots of higher education, history takes us back to the centuries V-III B.C, to the great cities of Athens and Rome. During this period of time the notion of *higher education* is born. The first superior school is regarded a philosophy school opened in Constantinopole in 425. Cathedrals and monastic schools from late medieval Europe, later transformed in new places to study, known as *Studium Generale*, are the premises of modern universities. In these places, the well known scholars attracted people who wanted to study law, medicine or theology. The word *university* comes from the latin *Universitas Magistrorum et Scholarum* which names, in its most simple meaning, as Sir John Henry Newman describes it, "a school of knowledge of every kind, consisiting of teachers and learners from every quarter" [10, p. 5] whose main essence was communication and the exchange of thoughts and ideas.

First institutions acknowleged as universities are the University of Bologna, founded in 1088 and University of Paris in 1150. These two institutions represented real sources of inspiration for many other universities – University of Oxford, University of Cambridge, University of Salamanca, University of Heidelberg – which, by the end of 15th century expanded all over Europe. The University is considered to be, alongside the Roman-Catholic Church, the oldest institution in the Western World, with a continously and uninterrupted history. "They have experienced wars, revolutions, depressions and industrial transformations, and have come out less changed than almost any other segment of their societies" [15, p. 9]. Kerr further points out that many of these institutions "are still in the same locations with some of the same buildings, with professors and students doing much of the same thing and with a governance carried on much in the same way" [5, p. 115].

To celebrate the secular values and traditions of the universities and to encourage further cooperation that would contribute to the economic development of our society, rectors of the most prestigious universities gathered on the 18th of September 1988, in Piazza Magiore, in Bologna to sign *Magna Charta Universitatum* [9]. The document acknowledges and certifies the fundamental values and principles,

especially institutional autonomy and academic liberty, based on which the universities have guided their activity for more than nine hundred years, symbolizing at the same time, the renewal of their commitment to society. *Magna Charta Universitatum* brings forward the important role that the higher education institutions have in the economic development process at regional, national and global level. The motives behind the decision are revelead in the first pages of the document: the future of mankind relies heavily on the scientific, technological and cultural development, a future that must be build in centers of culture, knowledge and research as are the true universities; the role of universities is to disseminate knowledge to young generations and to serve society; the economic, social and cultural needs of future societies require a significant investment in continous education; universities have the duty to offer to the next generations an education and training that would teach them and the future generations, to respect the harmony of the surrounding environment and life.

The fascinating history of higher education institutions reveals us values and principles that have survived the great test of evolution. How have these institutions succeeded in transforming from the medieval universities to the megauniversities from the present day, maintaining for more than nine hundred years their institutional stability, values and cultural richness? Was the relation with the surrounding environment the key to this incredible progress? If yes, which have been the transformations that both sides have experienced during this evolutionary process? These are the main questions that will guide us in understanding the regional dimension of higher education institutions.

The birth of Modern University and the expansion of higher education

Early European universities were born in a time of flourishing trade and commerce and a vast intellectual revival associated with the rediscovery of Greek and Roman-Greek learning, when the towns and cities were experiencing an accelerated process of growth and development. As Bender points out “this introduced a new order and freedom” [2, p. 3-10] bringing a new spirit to the medieval society. Universities were much more opened and diverse institutions compared to catedral schools and monasteries, without any restrictions regarding the intellectual subjects

taught or the participation of individuals with a particular social state. They soon formed a network of places for learning, actively involved in a Europe-wide exchange of documents and ideas. The surrounding communities were offering great support to the universities, while their partial autonomy was under the protection of the Church or the Royal Crown.

Although their relation with the surrounding environment had made significant progress by that time, tensions between the two sides were still existing. Even though universities succeeded in attracting talented people, injected new ideas, enriched the cultural life and strenghened the local economy, the complexity of the new born intellectual life and the gathering of individuals with different educational and moral background led to many conflicts between local people, students, teachers and authorities. Not even the "Black Death" or the economic recessions which have seriously damaged the existence of the most important medieval institutions could not stop the universities from expanding. In some cases, monarchs founded new universities, offering them various privileges, in their attempt to extend their royal power.

The protestant reform and the creation of the centralized nation-states only increases the complex nature of the socio-economic role of universities in the community. On one side, they become places of constant conflicts caused by political struggles, but on the other hand they provided higher education to clergy and lawers. With the help of municipalities and towns, universities introduced a new humanist and civic spirit, where the investigation of new knowledge replaced the reproducing of authorized knowledge which dominated the learning system by then.

By the end of the 18th century, the university was not perceived as an institution that was able to adapt to the the central or regional administration's new vision of territorial planning and to meet the military and the industrial needs of the European context dominated by the emergence of new industrialized economies and an accelerated process of urbanization. It was only after the French Revolution that things took a positive turn for universities. Government efforts to reorganise the administration and curricula of universities marks the turningpoint that would

irreversible change in better the evolution of universities and higher education. Out of all the reorganization attempts, the humboldtian reforms adopted by the Humboldt University in Berlin in 1810, were the most successfull, serving as model not only for Europe, but also for universities in United States and Japan [16, p. 303-362].

The new idea of university promoted the cultivation of man, gradual formation of character through liberal education which involved the search of knowledge, freedom of learning and teaching, but also an institutional infrastructure that would support this mechanism. This new organization of knowledge led to the birth of research universities by the end of the 19th century. This new kind of higher education institutions was looking to harmonise higher education and scientific research. Thus, the exploration and discovery of the world was not left to "amateurs" in contexts and institutions less academic, but became the duty of "professionals" with an academic background.

Universities become prestigious institutions of higher education and research, promoting modern science, based on rationality, empirical observation and experimental methods. Moreover, they build a stronger connection with the surrounding environment. For Bender, the birth of research university becomes a "denial of place" [2, p. 8]. This happens because once the dimension of knowledge and science is universal, available to all human beings regardless of time and space, the mission of universities transcends the boundaries of its location. Once the "nationalization process of science and education" [3, p. 1-42] is launched, universities gradually detached from their local and regional environment and developed a stronger connection with the state. They were financed by the governments in return for ensuring the training of public administration personell. This way, the universities were recognised the contribution to creating a new national identity and a cultural spirit, which represented the foundation of the reconstruction process of the nation-states, that became more interested in the ways in which universities, regarded as national institutions, could bring practical contributions in fields like health, industry, agriculture, public administration etc.

The second part of the 19th century marks the initiation of the partnership between universities and private companies. Big chemical and electric companies, like Bayer or General Electric, inaugurated their own laboratories and research centers, facilitating access to labor market for engineers and researchers with higher education. Cooperation was usually informal, mainly through teachers who received financial and logistic support in their research activities in return for well trained graduates and consultancy services that companies could use. In the beginning of the 20th century many industrialized countries inaugurated many research institutes with technical and industrial profile, both public and private. In spite of these transformations, the end of the 19th century and the beginning of the 20th century validate universities as top research institutions.

The postwar period, especially after 1960, records an unprecedent expanison of higher education. The number of students, academic and administrative staff alongside the funds allocated to higher education development grow substantially. What had been previously an education just for elites, became accessible to everybody. Technological and industrial changes and a strong demand for highly qualified labor force played a major role in this expanison process. Governments trusted more in the benefits that higher education could bring to the country and to the population. Higher education becomes associated with the idea of progress both at individual and collective level. Due to the efforts of maximizing the role of education and research and to increase the level of competences, Stehr thinks that the idea of a *knowledge society* was quickly becoming reality [14, p. 77-93].

The expansion process of higher education was not taking place just in Europe. On the contrary, it had a global dimension. The first universities outside Europe were founded in the 16th century. They “accompanied” missionary and comercial routes in colonies, becoming shortly a valuable instrument for educating the local elites. Once the colonies gained their independence and formed nation-states in the 20th century, the recognition and consolidation of higher education system became a priority. Riddle considers that higher education institutions represented a crucial instrument in the former colonies attempt to build their nation and to obtain international

recognition [11, p. 43-62]. Similar behaviour also took place in developed countries, where higher education played an important role in the modernization and recognition of some regions. The great expansion of higher education at regional level was happening mainly because: (1) the great number of students who were looking to enroll, which determined the foundation of new universities to replace the old-fasioned ones, incapable of facing the new requirements and challenges; (2) higher education became an important part of new goverrnmental policies regarding the regional needs of education.

The role of higher education institutions in technological development policies

As the expansion and diversification process of higher education and research grows, so are the expectactions of the society regarding the return of investment. Even though the first attempts to formulate a coherent science policy dates back to World War I, it was only after the World War II that an ambitious project was born. The World War proved the huge impact that a sustainable effort in scientific research and engineering could produce. As a consequence, after the war finished, the planned model designed to serve various important goals, was to be elaborated and implemented. Gibbons et al. noticed three stages in which the postwar economic development process could be divided [4], in which, as we will point out, higher education has contributed substantially.

First stage is based on the "Science The Endless Frontier" Report handed to the American President Francklin D. Roosevelt by Vannevar Bush, the Director of the Office of Scientific Research and Development of the United States of America in 1945 [13]. The report strongly argued for a more consistent financig of the scientific research by the US Federal Government. The main idea of the report was that knowledge is a law of nature and can be obtained through fundamental scientific research that should be conducted by specialists. At the same time, promoting and applying knowledge to practical purposes could represent a true blessing for the nation, contributing to a more vigorous economy, a more efficient national security

and ultimately, to a higher standard of living. In essence, the main objective was to increase the capabilities for a more intense research and development process.

Surprisingly, in the beginning, universities did not have too many benefits following the implementation of the new policies. More than that, compared to various public research laboratories or private companies that attracted most of the governmental funds, universities were neglected. The launching of Sputnik sattelite in space by the Soviet Union in 1957 produced panic for the United States and their allied countries, because they were feeling they were loosing the battle for conquering the space, but also for other key sectors of science. This aspect made the Americans reconsider their national educational system and gave way to a strong competition for the world scientific, technological and industrial supremacy. Moreover, new econometric studies by Abramowitz and Solow that pointed out the contribution of technological progress to economic growth, and also the theories of Schultz and Becker that incorporated the role of education in the accumulation of capital as a factor of economic growth pleaded for a massive investment in scientific research and a reorganization of the education system. The 1960's bring educational reforms to all Western Countries and a massive public investment in scientific research conducted in universities.

The second stage starts with the implementation of policies that are using science to attain various important national goals. If in the first stage, national security, nuclear energy, aeronautics and medicine were the sectors that attracted most of the research funds. In the second stage these areas were heavily critisezed. People were questioning their relevance to the civil society, arguing that research funded by public funds ought to bring major benefits to a larger segment of the national economy and to solve social problems. The competitivity of national industry, the social issues related to class, gender, living conditions and the surrounding environment were considered essential aspects that should be solved with the help of science.

Under the circumstances, the results soon started to appear. Government efforts focused on applied research, dissemination and implementation of scientific research.

Governmental and extra-governmental consultancy committees, that would attract valuable academic researchers to take part in the leadership of state institutions, were created. New circumstances attributed the higher education institutions a central role within the national research systems. Universities became the main pillar in terms of research, expertise, instrumentation and education.

The economic crisis from the 1970's cuts back dramatically the funds dedicated to academic research that were being reorientated towards saving the affected industries. It is a period characterized by selective interventions in the industrial sector and new attempts to redefine science and technological policies. Lack of economic performance rested on the constant decrease of the technological innovation rate. Consolidating the technological pillars and creating high added value products and services were considered by the United States top prorities objectives in their attempt to regain their industrial competitiveness, especially in a time when Japan was aiming at the global economic supremacy. In the 1980's, the new challenge triggered the third development stage, that Roobeeck named "a race for the technological development between the industrialized countries" [12, p. 4].

The main feature of this stage was an intense preocupation for advanced knowledge, for high-tech and innovation and for a more efficient and constructive collaboration between science and technology. A new series of strategic research and technological development programmes focusing on the information technology, biotechnology and other specific fields that could bring national competititive advantage, were launched. In 1984, the European Commity launches the first out of the eight programmes for research and technological development, designed to stimulate and support research in the common European space. The goal was to promote technologic transfer, the creation of common research spaces and the intensification of mobilities programmes.

The great interest for commercialization of academic research was due to the following factors: (1) the general perception of science as engine of economic growth; (2) huge expectations regarding the return of public investment; (3) growing externalization process of research and development companies; (4) need for higher

education institutions to generate alternative sources of profit. The successfull way in which universities contributed to regional development in cases such as Silicon Valley and other industrial agglomerations represented a true model. The reorientation of research towards civil purposes favored universities on the expanse of research laboratorios which lost their governmental funding. This context attributed the higher education institutions a new regional dimension. While national research institues were few and mostly centralized, the new implemented educational policy develops a decentralized network of higher education institutions, with stimulating role in regional innovation.

At this moment society expects from the higher education institutions, and especially from universities, its most representative and important institutions, to fulfill not only their traditional role of research and education, but also to assimilate the entrepreneurial spirit, the technological transfer and the continous education as part of their misión. For universities this becomes what economic literature calls the "third mision" that gravitates around the university - regional economy - society axis [8, p. 1].

Higher education institutions in the "knowledge society"

The socio-economic changes that have characterized the last decades are often described by concepts like *knowledge society* or *knowledge economy*. As the most important institutions involved in the production, dissemination and transfer of knowledge, higher education institutions became key elements in the global context.

The origins of the *knowledge society* dates back to 1960's when Fritz Machlup's studies emphasized on the role of knowledge and the industry of knowledge in the division of labor. The great value of knowledge did not have just economic implications, but had also the power to generate profound changes in the society. Robert E. Lane considers that a society influenced by knowledge had to be opened enough to allow all subjects of discussion, stabile enough to maintain the order required to discussing the subjects, rich enough to educate the population that was part of the society and curious enough to want to learn more [7, p. 653]. In the opinion of Knorr-Cetina, the *knowledge society* is not a society with more experts or

more technological applications, but one dominated by a culture of knowledge and a vast set of structures and mechanisms that serve knowledge [6, p. 7-8].

As we can see, for more than half of a century, since 1960 till the present day, the concept of knowledge society had various meaninings. If Daniel Bell pictured it as a "post-industrial" society in which the state and the higher education institutions played a major role as a consequence of centralized decision making process in 1973 [1, p. 9-15], the contemporary meaning suggests a more opened, more flexible society, in which the state is a facilitator, while higher education institutions, especially universities, are key partners fully capable of fulfilling the role of production, dissemination and application of knowledge in the surrounding environment.

The evolution of the concept also shades light on the relation between higher education – knowledge – surrounding environment over the centuries. Humboldt University, the first modern university, regarded knowledge and its research from a universal perspective, accessible to all human beings as a natural law of nature. The long-term development of knowledge was far more important than the short-term development, the theoretical aspect valued more than the practical one, unconditional search for knowledge came always before the one serving a purpose. Even though, sometimes, academic efforts were aiming at practical purposes, they were colleteral consequences rather than main objectives. Practical applicability was just a subsequent process of external origin. In essence, academic activity was following its natural course, subordinated to no social or economic interests. Modern society gives science a much more important significance from both the social and economical perspective. Knowledge becomes an important factor of production, complementing or substituting other factors like land or labor force. A big part of the labor force is involved in the "knowledge industry" and the members of the *knowledge society* have a higher level of education. Moreover, there is a significant increase in the capacity and availability of information associated with the development of new technologies. In this context, the academic staff and experts will represent the main group of professionals, while the universities and the rest of higher

education institutions will become central elements around which the other institutions in the society will gravitate in the race for economic development.

How is the new paradigm affecting higher education institutions? Which are the changes they have to make in order to actively participate to the development of the *knowledge society*?

In terms of the educational process, the new context inoculated the need for highly educated people and a highly qualified labor force that posseses a set of skills and competences that should be permanently improved. Both developing and developed countries are aware of the constant access to higher education as a vital condition for achieving national competitivity. Concepts like lifelong learning and continous education have been already part of the national educational strategies and of international oragnisations like UNESCO and World Bank for many years. Gender equality when it comes to access to higher education and participation to engineering and science programs is another major preoccupation. Being a factor of production confers to the scientific and technological dimension knowledge a greater importance. Using technology in the educational process can represent the new development model offered by universities to the knowledge society, online and distance learning gaining more and more popularity and efficiency.

Research is also attributed a new dimension. Higher education institutions have to adapt to the new context, in which the society is the new barometer of evaluating knowledge and innovation. Gibbons et al. consider that such mutations lead to an inherent move from" knowledge mode 1" to" knowledge mode 2" [4]. Knowledge is produced in an applicative context, with the precise goal to deliver solutions to specific problems of society and not just to satisfy the interests of the academic community as before. If the old paradigm of scientific research was dominated by a hegemony of theoretical and experimental science and an autonomy of researchers and universities, as host institutions, according to the new paradigm, research production is directed to solving practical issues, is inderdisciplinary and at the same time, can be questioned.

As for the governance of higher education institutions, as fundamental institutions in the knowledge society, the new global context imposes an even greater responsibility towards the civil society. Efficient spending of funds must become a priority. As an institution, the university must incorporate not just the needs of the academic environment and governments, but also the nees of the business milieu, professional associations, students. Moreover, the academic staff must line up to a superior value standards.

Conclusions

In spite of their long existance and the success recorded over the centuries, the authority and integrity of higher education institutions is placed under the question mark today. Critics target mainly the process of massification that higher education is experiencing nowadays. The challenges that universities and the rest of the higher education institutions are more complex than ever. Students, immpresive as number and extremely spiritual, cultural and linguistic diverse are not attracted by the idea of belonging to a cultural elite. They focus all their efforts towards gaining skills and competences that would make them successfull on a global labor market. Huge costs that higher education and research require led to underfinance of many universities, many of which replaced, totally or partially, the academic staff from decision making positions with experienced managers in order to ensure the financial stability. Many countries have implemented educational reforms in order to enhance the efficiency of universities. To make sure that the investment in higher education is profitable, and the universities can deliver “the goods” required by the society, evaluation criteries and performance indicators have been introduced.

The higher education institutions are, as we speak, engaged in a global competition for attracting the best students and teachers, but also funds that would enable them to perform their education and research activities at the highest posible level. Factors of influence, as the new information technology, the huge costs of science and instrumentation process, the profit, financing based on competitivity and performance indicators, international rankings, commercialization of the intelectual

property rights, the attraction of research grants etc. amplify even more the dimension of the competition.

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