CHALLENGES FOR THE ROMANIAN UNIVERSITIES IN THE KNOWLEDGE ECONOMY

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Abstract. *The present paper represents an analysis of the topical issues regarding universities world-wide and some approaches for the case of Romanian universities. The first section reviews the implications of universities within the knowledge economy in terms of their changing roles, opportunities, and shortcomings. The second section focuses on presenting the challenges for universities on different dimensions of the knowledge economy in order to understand what strategies to apply for ensuring their global adaptation and growth. We argue the relevance of this analysis throughout the idea that universities focused on entrepreneurship, technology and research have a dramatic impact on their economies, through the entrepreneurial ecosystem created in these universities, start-ups created by students, and spin-offs developed from university research. Within the third section, we present a series of strategies and models to be applied by universities which strive to become more entrepreneurial. Throughout the fourth section, we point out some directions for the case of how can Romanian universities improve their entrepreneurship capabilities.*

Keywords: *entrepreneurship; entrepreneurial university; knowledge economy; knowledge strategies.*

Implications of universities in the knowledge economy

The new order of the knowledge economy has led to considerable changes at organizational and national level. The accomplishment of the knowledge economy's standards is being evaluated through well-developed tools like Knowledge Assessment Methodology, developed by World Bank, and Lisbon Scorecard, elaborated by World Economic Forum, and Innovation Union Scoreboard, developed by the European Union (Leon, 2017). Some components of these metrics concentrate on analyzing what is happening at the national level while others focus on determining companies' contribution and reaction to its development. The final conclusion of Leon (2017, p.246) was that "despite the changes that have been made regarding their name and structure, Knowledge Assessment Methodology, Lisbon Scorecard, and Innovation Union Scoreboard have the same explanatory power. Their use may be redundant since they provide very similar results after using various variables and sources of data. However, they bring forward the progress made at the national level towards developing a sustainable knowledge economy." The existing tools for assessing universities in the knowledge economy should continuously be innovated according to the changing global environment.

Universities work, similar to business entities, in a context of unpredictability, an area marked by developing a rivalry in order to attract in and hold the best talents, and also the rise of new needs which must be immediately satisfied. The significant and pressing modernization of the university - considered as a prerequisite for the university's assumption of a crucial role in society and the knowledge-based economy (Hadad, 2017) - has constrained the reconfiguration of the university. Strategic thinking and understanding the importance of knowledge as strategic resources become imperative for universities (Bratianu, 2007; Bratianu, 2010; Bratianu & Bejinaru, 2017). The stake was the capacity of higher education to wind up noticeably focused in the worldwide knowledge society, on the premise of its adjustment to significant changes, for example, expanding interest for higher education graduates, expanding the need to grow close participation between the college and industry, redesign of learning (Lefter et al., 2011) - the need to adjust the techniques for research of the interdisciplinary character of some real issues of contemporary society, for example, feasible improvement (Hapenciuc et al., 2016).

The competitive advantage of a few universities, to integrate the teaching activities with research, is behind the benefit of creating leverages through university-industry partnerships, on the way of speeding up of technological development. For all intents and purposes each industrialized nation tries to change the networks between these two segments into a target item of the innovation system, and the idea of "triple helix" - speaking to the cooperative connection between government, universities, and business - has turned out to be topical. Research in the field recommends that there are four components required in the show, not just on the suspicion that colleges can be drivers of development and advancement: national administration, sub-national administration, business-organizations, and universities (Hapenciuc et al., 2016).

Universities are viewed as the nucleus of innovation development in all nations that need to unite their national advancement framework. Recently, most innovative advances that have affected the economy can be directly or indirectly connected to universities, either by giving knowledge research and dissemination or through university-industry partnerships that have permitted employees and organizations to cooperate in order to create innovation (Esi & Nedelea, 2014).

Challenges on different dimensions of the knowledge economy

In order to give their best to the world, universities must find the way of transforming their potential into real results and according to Times Higher Education – during the next five years, HEI's must face a series of global challenges. Research grows geo-politically and critical research questions require substantial national spending plans and working groups keeping in mind the end goal to share differing viewpoints and propelled mastery. States should center their investments towards vital interests and reinforce transnational systems and networks which can give the important abilities. The significant issue for any analyst is to exhibit how wide people in general effect of their work is. Now colleges must acknowledge the test of putting resources into the essential fields that yield (deliver) long-run returns.

It is clearly the momentum for inter-nations competition for students worldwide. Countries will seek proficient workforce and universities will compete to recruit the

best understudies and keep the best graduates. The test of the both nations and universities is to discover the approaches to exhibit the esteem outputs from working and studying with them (ROI – rate of investment). What is the real worth of academia and how is it valued? Many studies have demonstrated that the academic environment creates enormous value yet it is still fairly hard to persuade others about these advantages. For this situation, the test is to discover the methods for making individuals recognize the value of research in higher education by connecting with them inside the community.

Transformations in markets, institutions, and technologies are driving progressive changes for the educational programs and teaching process. Data on education results will turn out to be all the more broadly accessible, changing the paradigm about what higher education contributes. The roles of the academic work are changing, and perhaps expanding, as per the worldwide financial and social changes. Scholars are endeavoring to build up their mastery in different specialty territories keeping in mind the end goal to conform to however many demands as could reasonably be expected. The challenge is to attract the best capable scholars keeping in mind that the profoundly gifted scholars should work within a prosperous and liberal environment.

To confront the future challenges is essential the broadening of leadership capability. Intellectual and visionary leadership is required for two noteworthy reasons: first, to expel ideological boundaries related with the entrepreneurial worldview and the university idea; and besides, to bring this through in the specific setting of the idea of the university itself and its current culture, mission, and strategy. (Shattock 2009) Entrepreneurial change is accomplished by action, not by strategy statements and maybe in academe, leadership is an idea to be earned not formally assigned (Watson 2010). A key challenge will be to make entrepreneurial good examples inside offices and bit by bit to assemble a culture of compensating innovation in each division, as opposed to a culture of protection. This will request the ability to distinguish potential change specialists and assemble groups around them, empower chance, and secure them. Shared purpose is thus built by example and reward. New types of leadership are required to grasp future difficulties (Gibbs et al., 2012).

National experts are seeing new points of confinement of their energy and the challenge is set by the need to co-creating new contributions with the groups they speak to. So as to acquire authenticity, the accreditation offices must give clear norms of consistence. The financing change is an immense issue to address, which drives rapidly to inquiries concerning the cost of educating and research, and touchy issues around cross-sponsorships and executive incentives. Much should be done to make more maintainable and equitable social orders, looking at disadvantaged groups and also across generations.

The transparency of academic leadership plays a crucial role in making a good future. To engage best, institutions also need to address their own challenges and take leadership over communicating the value they create. Leadership transparency is no longer an option for the organization but a must. Ensuring transparency for your subordinates and all stakeholders provide a better reciprocal understanding and trust and lead to more efficient cooperation (Bejinaru, 2017).

The challenge of the entrepreneurial university

Entrepreneurship is an idea for which are being used many definitions. However, two regular viewpoints are that entrepreneurship applies both to people and organizations and that it concerns the innovative, forward looking and value-creating use of resources. A helpful working definition of the entrepreneurial advanced education establishment (HEI) has been given by Gibb (2013): "Entrepreneurial higher education institutions are designed to empower staff and students to demonstrate enterprise, innovation and creativity in research, teaching and pursuit and use of knowledge across boundaries. They contribute effectively to the enhancement of learning in a societal environment characterized by high levels of uncertainty and complexity and they are dedicated to creating public value via a process of open engagement, mutual learning, discovery, and exchange with all stakeholders in society – local, national and international" (Gibb, 2013). The definition stresses the empowerment of individuals in their utilization of advancement, inventiveness, and undertaking in their reaction to learning and social engagement. Being an entrepreneurial higher education organization depends, to a great degree, upon people and creative methods for getting things done. The definition is valuable in operationalizing the entrepreneurial HEI and has suggestions over every single hierarchical capacity and disciplines containing the establishment (Jameson & O'Donnell, 2015).

All through the battle of HEIs another kind of organizations see business openings and offer alleged answers for less demanding access into the world class group. Another pattern is to get the title of entrepreneurial and engaged university. Throughout this Accreditation Council, it is obtained the recognition of accomplishments, advance hierarchical improvement and join a worldwide gathering of universities commending excellence in entrepreneurship and engagement.

Strategies and models for developing the entrepreneurial university

The emergence of the approach of entrepreneurial universities is not random but is well-grounded. Universities are „nurturing innovation and entrepreneurship in unique ways – from creating educational value and outlets for their students to providing new economic opportunities for their local economies" (Nadu, 2017, p.20).

Universities are awarded a major role in the economic development by providing highly-knowledgeable and skilled young entrepreneurs as well as new know-how and technologies. They offer entrepreneurship education „as a way to develop the entrepreneurial mind-set of graduates, encouraging university students to become self-employed, and are setting-up technology transfer mechanisms" (Mudde et al., 2016).

The unique and unmistakable principle of the entrepreneurial university is that it enables all staff, students, outside partners and groups to impact important change in their general surroundings, and does as such by directly engaging in such change through its own particular actions. The focus is on creating hierarchical DNA which empowers the university to act entrepreneurially over all disciplines, at all levels, and in all capacities. „The creation of an entrepreneurial university represents a transformational opportunity to develop a truly relevant and innovative organization

capable of responding flexibly to the needs of stakeholders and society in ways that have a real and lasting impact while enhancing the graduate attributes the student experience" (Jameson & O'Donnell, 2015, p.72).

Thus in order to become entrepreneurial, active learning is necessary. Various contemporary pedagogies (e.g. project-based, active learning or independent learning) should be applied. There are different methods thorough which they can be delivered like: specific programs; emerging good practices should be shared amongst educators to eventually become embedded in day-to-day pedagogy. Also, non-traditional learning environments (real-life situations, out of the classroom) should be available for all students (Nadu, 2017).

An OECD document "Entrepreneurship Education: A Guide for Educators" argues some attributes of entrepreneurial teachers:
• They reward individual initiative, responsibility taking and risk taking.
• They are ready to accept failure and integrate it during a learning process.
• They teach how to mitigate risks. Failure is an integral part of the entrepreneurial process but it can also be a costly waste of time, skill, and commitment.
• Entrepreneurial teachers have a strong team working skills.
• Entrepreneurial teachers are networkers. They frequently exchange with and consult with their peers, external collaborators and meet up regularly.
• Entrepreneurial teachers use a variety of creative methods as pedagogical tools.
• They let students take responsibility for their own learning process, for instance by letting them create their own lessons. In their assessment methods, entrepreneurial teachers acknowledge not only the solution but also the process of how to get there.
• Entrepreneurial teachers use technology and social media in the classroom to support learning. They explore new solutions, production techniques, and computing tools which support the learning process. • They also use social media for their own peer learning and exchange of information. (Nadu, 2017) According to the previously presented features, the entrepreneurial university is perceived to be able to cope with societal challenges by innovation in research, knowledge exchange, teaching and learning, governance and external relations (European Commission and OECD, 2012).

A different and more economic approach that has turned out to be overwhelming in the talk on entrepreneurial colleges supports the emphasis on their role in innovation and regional financial improvement through transposing of research into business results. From a traditional perspective, innovation is derived from academic knowledge but today a contrasting perspective states that problems in society are researched in search for scientific solutions. Etzkowitz (2000, 2004) positions universities in a so-called triple helix innovation system in which academia, businesses, and government cooperate. In this knowledge infrastructure, entrepreneurial universities are institutions that transform themselves into entrepreneurial enterprises of innovation, knowledge transfer, and technology commercialization (Mudde et al., 2016).

However, it is obvious that a university can't wind up noticeably entrepreneurial in one day. Research revealed that it is an authoritative change procedure of ten to 15 years. In a subsequent report at 20 universities, Gjerding et al. (2006) reasoned that for such a procedure to be successful requires a top-down leadership drive that empowers bottom-up initiatives, "supporting a culture of intrapreneurship".

Furthermore, Nelles and Vorley (2009) stated that an entrepreneurial transition should be managed throughout five components. They argue that building an entrepreneurial architecture needs the advancement of authoritative structures, communication and coordination systems that provide assistance in adequately relating the diverse activities, initiative – including vision, strategies, and consideration for the hierarchical culture which is the hardest to change.

According to some non-conventional opinions, the entrepreneurial university is a public–private entity in scale and scope equivalent to a venture-capital entity (VC). "In good times, the private side of the model predominates; in bad times, the public side comes to the forefront. In all times, the global convergence to an entrepreneurial university is the reverse side of the same coin: the transmutation of academic knowledge into economic advantage" (Guerrero & Urbano, 2010).

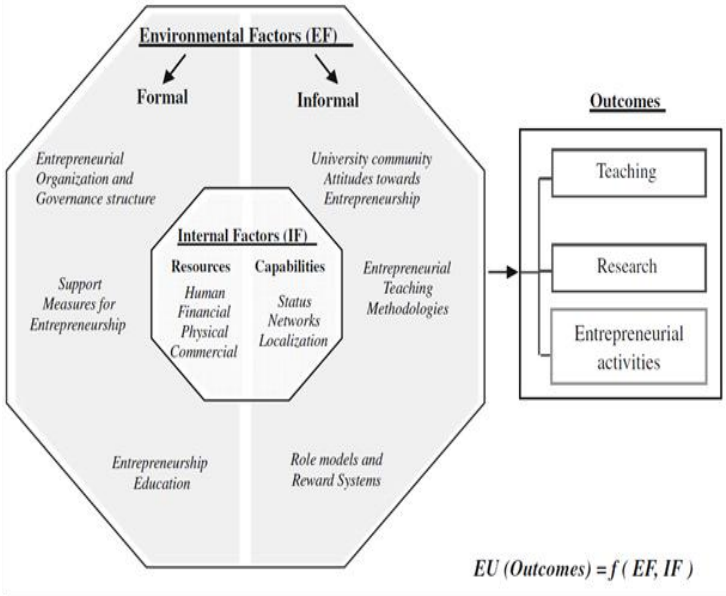

Figure 1. Conceptual model of entrepreneurial universities (Guerrero & Urbano, 2010)

In this context, we conclude that a modern university can only preserve its cultural mission if it adopts an effective model of the entrepreneurial university, which:
- is based on the principles of a comprehensive university, which is similar to a corporation;
- leverages the adaptive potential of its organizational transformation while assessing the risk of losing its historical cultural mission;
- reduces the gap between the innovative existence (form) and traditional essence (substance) of university education;
- combines the educational and entrepreneurial functions of education.

This model is the most competitive since it provides a better chance of successful interaction between the education market and labor market.

Many studies and reviews focusing on the concepts and practice of entrepreneurial universities and academic entrepreneurship relate them to the commercialization of science. Indeed, there is a strong causal relationship between university-led scientific innovation and economic benefits. In this sense, the novel entrepreneurial strategy must motivate this kind of academics to closely collaborate with industry in order to build entrepreneurial mindset within university and community on all levels and components (Jarohnovich & Avotiņš, 2013, p.124).

Triple Helix model belongs to regional innovation framework as the universities assume a focal part as knowledge – producers, and disseminators. No matter the policies developed according to the triple-helix model very little changes in the conduct of government were accomplished because the triple-helix approach was connected more in a static way, similar to "a holistic measure", not as a basis for real and required strategy statements. As indicated by the triple-helix hypothesis in an emerging knowledge economy those spots with entrepreneurial universities ought to progressively exhibit developing an interest for knowledge exchange to industry and society.

In reality, we can observe deviations from this rule and very an unequal R&D spread. The third role of universities – to cooperate with surrounding ecosystem in addition to teaching and performing world class research still stay on top of academic-industry relations thus narrowing earlier projected in triple helix approach of wider private – public interaction. The arrangement may be the expansion of this third role to creativity and cross-disciplinary helpful condition for gifted individuals. This requires likewise for new reexamined activities throughout more dynamic and closer, long-run university-industry collaboration effort on a base of entrepreneurial mindset (Jarohnovich & Avotiņš, 2013).

The entrepreneurial university in its simplest model interlinks its three missions: education, research, and societal advantages (see figure 2). The general business model incorporates fundamental fields and players of collaboration: education and research, government, industry, however it doesn't present in points of interest all conceivable directions of knowledge creation and elements of business enterprise space in the university environment. “There can be two different approaches to university business model: -wider view to the university as a creator of intellectual and social capital for and in society, -narrower view to the university as economic value producer from created in campus knowledge as revenues-rising function” (Jarohnovich & Avotiņš, 2013, p.30).

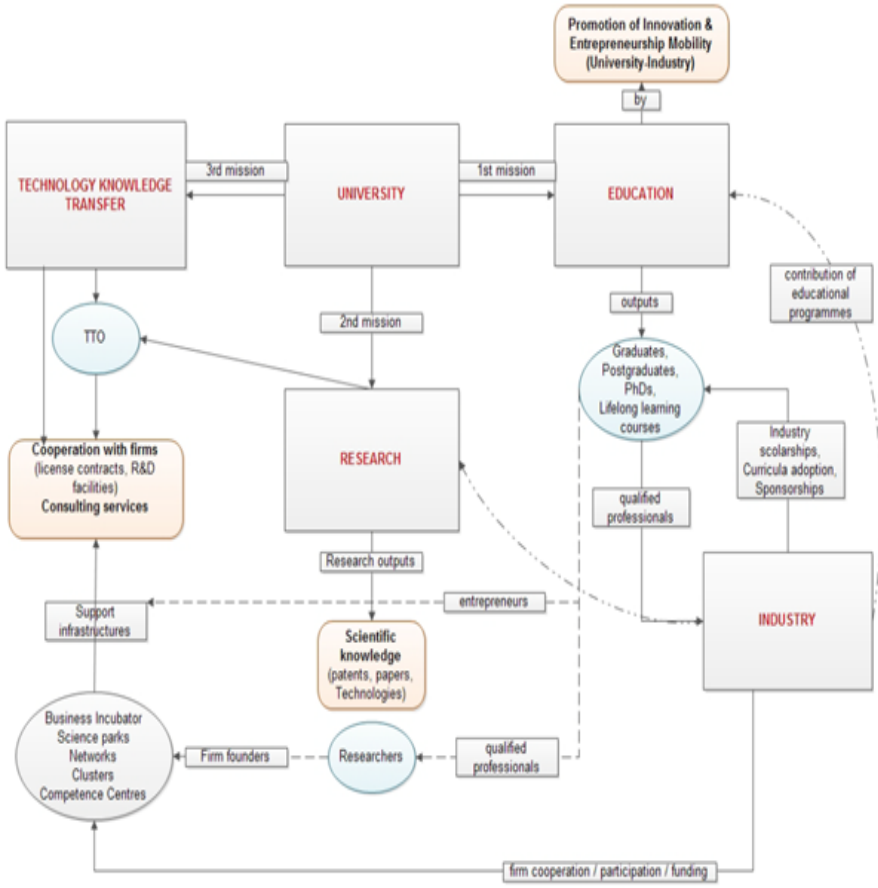

Figure 2. The model of university with three strategic priorities (Jarohnovich & Avotiņš, 2013)

A university's primary function has always been to teach, which provides society with graduates who become both jobseekers and job creators. Its secondary function has been to conduct research, which, within the new knowledge-based economy, not only generates published academic findings but also innovations for new companies. Now, entrepreneurial activities link research results to their practical implications for society. Knowledge spillover appears to transmit university research via several conduits. Based on that, new companies are generated by the commercialization of research outputs of multidisciplinary research (Schulte, 2004).

The entrepreneurial university must fulfill three missions simultaneously that otherwise might be at odds with one another: teaching, research, and entrepreneurship (Mahdi, 2016). An entrepreneurial university is a natural incubator that endeavors to simultaneously fulfill its missions (teaching, research and entrepreneurial activities) while providing an adequate atmosphere in which the university community (academics, students, and staff) can identify, explore and exploit innovative and creative ideas that could be transformed into new ventures (Kirby et al., 2011).

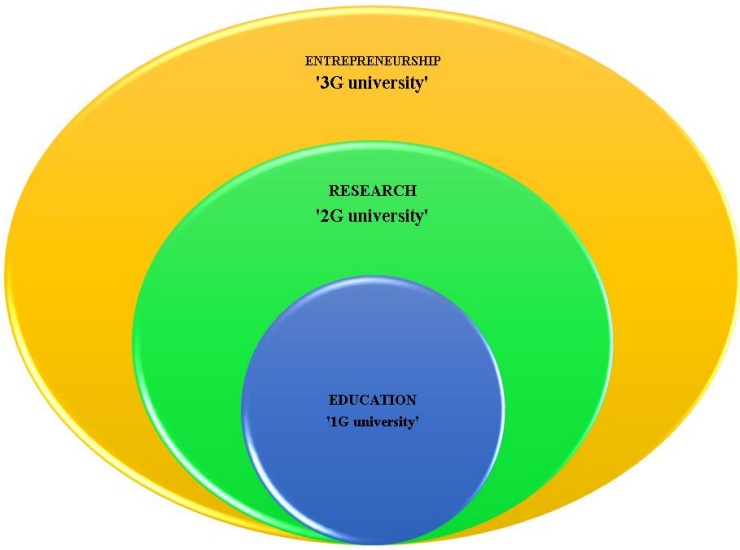

Figure 3. Functions of the 3G University (Mahdi, 2016)

Romanian universities in the context

If we consider the question 'Why do we need the entrepreneurial type of universities in Romania?' we might discover serious arguments. To start with the creation and growth of new business underpin innovation and economic growth. The speed with which these businesses are created and disappear, grow or decrease is what economists do call the economic dynamism, a critical factor for improving the standard of living. Among the factors that can sustain this dynamism are culture and entrepreneurship education. Also, both can be critically influenced by a university education. We already know that universities have an important economic impact on education and research (Matei et al., 2015).

But to support economic growth through entrepreneurship, universities must create a cultural environment within them promoting entrepreneurship through programs, courses, competitions, relationships with investors and business people, etc. Universities focused on entrepreneurship, technology and research have a dramatic impact on the economies throughout the entrepreneurial ecosystems created in these universities, start-ups created by students and spinoffs emerged from university research.

The entrepreneurial behavior of the Millennials was analyzed and findings may be relevant for creating national strategies. The Millennials generation is the new generation (defined by researchers as the population born between 1980 and early 2000), which comes with a paradox in terms of entrepreneurship. On the one hand, those in this generation are the most educated generation so far and have had exposure to entrepreneurship: both abroad and inside the country. The success stories of entrepreneurs such as Mark Zuckerberg, the founder of Facebook, or children who have become entrepreneurs before going to school, have become popular. On the other hand, this generation has crossed the great recession that has made its first signs felt in

Romania since the end of 2008. That's why this generation faces negative career prospects. Against this background and in the absence of accelerated economic growth, the number of new firms is declining in Romania. If we look only for the first 10 months of 2014, compared to the same period in 2013, the number of registered companies fell by 20%, while the number of created companies decreased by 6%. These facts are not just the case of Romania. Even in the country considered the most entrepreneurial in the world, the United States, the rate of new business creation has declined over the past decades. According to Brookings Institution, quoted by Forbes, and in Silicon Valley, fewer firms are being set up. In the United States, the number of launches fell by almost 28% between 1977 and 2011, according to the Census Bureau. Explanations of the state of affairs in Romania are many and different from those of the US, including low risk aversion, an unfriendly culture with entrepreneurs, a low-growth economy, lack of start-up capital, and lack of entrepreneurial education and strategic thinking (Matei et al., 2015).

It is widely known and accepted that there is a direct relationship between investment in education and the growth of Gross Domestic Product (GDP). This should be even more acknowledged as this education is directing and developing the knowledge, aspirations, and attitudes needed by an entrepreneur. The only positive perception of the Romanian entrepreneurs responding to the 2013 study is education. According to the barometer, entrepreneurship education improved in 2013 in Romania, with 58% of entrepreneurs sustaining this perception. The positive impression on entrepreneurship education is the same and segmented by age, with a higher percentage for young entrepreneurs (under 40) (Matei et al., 2015).

Universities are fundamental for the development of an entrepreneurial ecosystem, including venture capital investors, entrepreneurship support organizations, incubators, and a skilled specialist base. The importance of universities in creating an entrepreneurial environment cannot be denied if, for example, are taken into account Silicon Valley and Stanford University's crucial roles in creating such an effective entrepreneurial context in the Valley. This role is not limited to creating the ability to write a business, marketing or finance plan or another kind of course. Although these are equally important, entrepreneurial universities transfer more than this knowledge, becoming a factory of entrepreneurs. For instance, in the United States, in 2006, out of 1,250 business incubators, one-third were organized in universities, generating start-ups and businesses for the real economy. In Romania, young students consider that faculty is preparing them to an average degree to become entrepreneurs (44%) (Matei et al., 2015).

This answer indicates that steps have been taken to support entrepreneurship in Romanian universities, but there is still much to go in this direction. Following we briefly present what we have learned that Romanian universities should do in order to improve their entrepreneurial capabilities. In this age, when progress and well-being are increasingly the product of thought, all faculties of the university have to be involved in the process. The entrepreneurial discussions in which they must be involved from the beginning, the employees of all the faculties must be extremely important in implementing the new programs dedicated to entrepreneurship and must be a decisive factor in cultural change within universities, which leads to promoting entrepreneurship. It is critical to have support from university leaders. The help coming from the university leaders is underlined as being a major one regarding

financial support and to ensure the implementation of entrepreneurial programs in all faculties of the respective university. Another strategy is to make entrepreneurship as visible as possible. Many universities have applied the principle of ubiquitous entrepreneurship, organizing events about entrepreneurship that have involved the entire university. Faculties and departments in Romanian universities can define entrepreneurship according to their own needs and applicability. This definition should apply to the respective discipline and to the faculty mission, up to the department level (Matei et al., 2015).

Concluding remarks

In a globalized world, benchmarking universities to each other in the global territory of education and research is turning into a decent institutional practice. However, there is no single solution to transform into an entrepreneurial university, precisely because this type of education is not of the same nature as classical theoretical subjects. To be successful, this type of education must involve the community, investors, mentors and other business people and must create an ecosystem in the true sense of the word, i.e. a system flexible to changes in students' expectations, changes in the economy and community needs.

To conclude with we remind briefly, the necessary set of changes, the point of which are to modernize the university: increasing the relevance of education and research, transferring knowledge and training the skills required for graduates to successfully practice their profession; strengthening the knowledge triangle - education, research, business; increasing the capacity to meet the needs of the economy, creating self-financing mechanisms.

Finally, in order to encourage entrepreneurship throughout our universities, this domain must be perceived as a valuable and respected career choice, and those who proceed in the way of entrepreneurship must feel that they are not stigmatized in case of failure. These two very important aspects of the development of entrepreneurship belong to the entrepreneurial culture of the Romanian society, built also by the university education and they must be correctly and thoroughly approached.

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