

Assessing Entrepreneurial Potential of University: Empirical Evidence from Croatia

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AIMS OF THE PAPER

This paper deals with the main characteristics of entrepreneurial university and uses the cases of two Croatian universities to demonstrate how far they are from being entrepreneurial. The question arises, to what extent did these two Croatian universities adapt to the new circumstances and how close are they to fulfilling their third mission and becoming entrepreneurial.

METHODOLOGY

This paper compares two Croatian public universities according to characteristics of entrepreneurial university, developed by Ranga (2014) and will try to see how similar or different they are, what is missing and what can be done in order for them to become more entrepreneurial.

MOST IMPORTANT RESULTS

The change process is long and difficult and there is no unique solution how to transform a university into an entrepreneurial university; each university has to find its own specific pathways, its own specific configuration how to bring about change that is reflected by situation, resources and environment in which each university operates (Clark,2004).

Analyses of these universities show that some elements of entrepreneurial universities exist at both universities but they are not systematically developed and usually not part of strategic plans of the universities.

RECOMMENDATIONS

This paper gives recommendations of what is missing and what needs to be done in order to become an entrepreneurial institution. Universities need to find a way to act more innovatively to create a more engaging environment for researchers and students, and to collaborate with their stakeholders. In order to achieve this, they need to become entrepreneurial organizations. Universities should not focus just on transferring knowledge to students or producing new knowledge, but also on implementation and usage of that knowledge in solving the problems of industry and society in which they operate.

Keywords: entrepreneurial university, “third mission” of university, innovation, entrepreneurship, Croatian universities

INTRODUCTION

Today's environment is characterized by high uncertainty and complexity, which forces all systems to make significant changes in order to survive, including universities (as a part of the environment). The levels of uncertainty and complexity in any environment and the associated threats and opportunities dictate the need for entrepreneurial response (Gibb, 2013). Universities are facing higher levels of uncertainty and complexity in their environment as well as greater entrepreneurial pressures from within, because of different challenges to the concept of the university as a "protected place for individual research and teaching" (Gibb, 2013).

Pressures for easier access to higher education, expectation from the government about involvement of universities in socio-economic development of the country and demands for implementation of principles of market economy and organizational management at universities create a completely new context for development of higher education. Their role should not simply be focused on producing new knowledge, but also on disseminating it to industry and society (Guerrero et al., 2012). With the emergence of university's "third mission", in addition to teaching and research, emphasis is also placed on socio-economic development, research and technology commercialization (Ranga, 2014). Universities cannot be seen only as a part of the national education system, protected by the government and responsible only for educational programs and research. In a highly competitive world, universities need to compete for students, research and financing and they need to take care of developing relationships with their stakeholders, which demands a complete change in their way of doing business (Oberman Peterka, 2008). Pressures in this respect have increased with the global recession (Gibb, 2013). In order to fulfill their task, universities need to redefine their mission, vision and activities and replace their traditional approach with a new, contemporary approach, which has been named "entrepreneurial approach" (Oberman Peterka, 2011). Entrepreneurial character of university does not mean that universities will become too dependent on industry, neither that they will become "*all-purpose shopping malls*" (Clark, 2001). Entrepreneurial universities are active actors in society that influence their environment (industry) in the same way that the environment (industry) influences them. These are institutions that are capable of change in complex and uncertain environment, without compromising their mission.

(Oberman Peterka, 2008). Being an entrepreneurial higher education institution depends, to a large extent, upon individuals and innovative ways of doing things and therefore recognizing and building – in innovative ways – on what already exists (Gibb et al., 2014).

This paper consists of three parts: the first part provides a literature review about the entrepreneurial university and the main characteristics of entrepreneurial university, the second part focuses on the situation in the Croatian higher education system and gives a comparison of two Croatian public universities in the context of being an entrepreneurial university, and the third part gives recommendations of what needs to be done in order to become an entrepreneurial institution.

LITERATURE REVIEW AND CONTEXTUALIZATION

Emergence of entrepreneurial university is an answer to the growing importance of knowledge in national and regional innovation systems since university is an agent of effective and creative creation of new knowledge and technology and their transfer from university to society (Etzkowitz, 2000). In knowledge-based economy, university is becoming (or should become) a key institution of the innovation system – as a producer of human capital and as a base for the development of new businesses, and, besides government and industry, it is becoming an unavoidable element of societal development. These three institutional spheres (government, industry and university), according to Etzkowitz et al. (2000) are interconnected in the Triple Helix model. Connections between these spheres are happening in different phases of innovation processes. The Triple Helix model can help in understanding the concept of entrepreneurial university, but it does not explain what entrepreneurial university is or how to create and develop relationships between these three institutional spheres. In two thirds of cases, partnerships between university, business sector and government do not lead to fulfillment of common goals and they usually end in failure (Hagen, 2002), mostly because of different business cultures and differences in the way they operate (Cyert and Goodman, 1997, cited by Hagen, 2002: 209). However, when successful, cooperation can lead to synergistic effects, which are explained by the Triple Helix model. Thus, a university can be referred to as an entrepreneurial university if it embraces its role within the Triple Helix model, its "third mission" of contribution to

regional and national development (Philpott et al., 2011). In that sense, entrepreneurial university becomes something that all universities should strive to become.

Nowadays, the role of universities is widely discussed because the focus has shifted from teaching and research to the “third mission” of university, with increasing involvement in socio-economic development and technology commercialization (Ranga, 2014). Findings of the study by Kalar and Antoncic (2015) imply that it is not enough simply to announce entrepreneurial orientation of the university in strategy documents, because there are still some academics who believe that, upon introducing the third mission of the university, the main missions of university will be neglected. Therefore, it is necessary to persuade academics to believe in the necessity of entrepreneurial orientation of the university, not just by writing new policies and measures, but also by providing real action and support. Strengthening the role of university as an active creator of innovation is motivated by university’s increased interest in knowledge capitalization, which leads to strengthening connections between university and industry, but also between university and government. Governments all around world are focusing on developing potential of university for creating innovation and knowledge-based economy development (Etzkowitz et al., 2000). Technology transfer offices (TTO) have been established at many universities. Together with government programs for enhancing technology transfer, they help academics search for economic and technological potential of their research. Besides TTOs, universities are becoming involved in other activities connected with knowledge capitalization and technology transfer, such as establishing business incubators, centers for entrepreneurship, etc. Universities are also acquiring equity in certain companies and thus technology and knowledge transfer activities are becoming an important part of some universities’ income.

The research of entrepreneurial university began in late 1990, with Clark (1998, 2001) and Gibb (2002, 2005), who have developed characteristics of entrepreneurial university.

According to Clark (1998, 2001), there are five basic elements of entrepreneurial university: strong leadership, diversified financing, developed university periphery, stimulated academic heartland and integrated entrepreneurial culture.

Gibb (2013:3) has developed a broader definition of entrepreneurial higher education institution in which he states that “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.” Facing many challenges, universities need to find a way to act more innovatively, creating more engaging programs, while taking more responsibility for employability of their students. They need to collaborate with their stakeholders, with industry and government, in synergy, to disseminate the knowledge and embrace their role in carrying out necessary changes. Changes need to start from individuals, then building on to institutional change, to be able to cope with demanding environment.

According to Ranga (2014) the entrepreneurial university has nine core activities, as follows: (1) joint research projects; (2) technology transfer and research commercialization; (3) spin-off formation by academic faculty, students, alumni; (4) engagement in strategic partnerships and venture capital; (5) mobility of university researchers to industry and of industry researchers to academia; (6) professional education to companies (lifelong learning); (7) involvement in local and regional development projects through various models of public-private partnership; (8) entrepreneurial education for students; and (9) internationalization.

From this definition, we can see that concept of entrepreneurial university goes even beyond the concept of the Triple Helix to a wider stakeholder model, which is centrally concerned with how universities can negotiate pressure from a wide range of stakeholders (Gibb and Haskins, 2013).

European Commission (2014) highlights the following three challenges that seem to be particularly relevant for higher education and drive their innovation: challenges from globalization, challenges from the changing supply of and demand for higher education and challenges from changes in higher education funding. Taking in consideration all these challenges, European Commission and other international organizations (such as OECD, World Bank, etc.) put a strong accent on stressing the importance of changing the way in which HEIs operate. As a result of these initiatives, in November 2013, the European Commission and the OECD LEED Forum (supported by a panel of six independent experts) launched a tool for measuring entrepreneurial and innovative potential of univers-

ities - HEInnovate (<https://heinnovate.eu/about>, January 05, 2017). This tool corresponds with previous research on entrepreneurial university and measures seven areas of entrepreneurial/innovative university: leadership and governance, organizational capacity (funding, people and incentives), entrepreneurial teaching and learning, preparing and supporting entrepreneurs, knowledge exchange and collaboration, the internationalized institution and measuring impact. This tool is intended to be self-evaluation tool that allows stakeholders (internal and external) of HEIs to come together, compare their assessments internally, start discussion, and define the priorities and steps for the change process. In three year of its existence, more than 100 HEIs from Europe have used this tool to assess their entrepreneurial and innovative potential¹.

From all above mentioned it is obvious that the change process is long and difficult, and that there is no unique solution how to transform a university into an entrepreneurial university; each university has to find its own specific pathways, its own specific configuration how to bring about change that is reflected by situation, resources and environment in which each university operates (Clark, 2004).

METHODOLOGY

This paper will compare two Croatian public universities according to characteristics of entrepreneurial university, developed by Ranga (2014) and will try to see how similar or different they are, what is missing and what can be done in order for them to become more entrepreneurial. This paper is written on the basis of publicly available information, which might have been limited. Because of unavailability of some data, it is possible that some facts have not been taken into account when making conclusions.

Taking into consideration the core activities of entrepreneurial university developed by Ranga (2014), the available resources, such as Strategy of Josip Juraj Strossmayer University of Osijek 2011–2020² and University of Rijeka Strategy 2014–2020³, articles and internet sources, an assessment of entrepreneurial potential of these two universities was made. Activities of entrepreneurial university are closely related and often overlapping

with each other and therefore it is not easy to draw a straight line between certain activities. Activities of entrepreneurial university, such as joint research projects, technology transfer and research commercialization, formation of spin-offs by academic staff, students and alumni, involvement in strategic partnerships and venture capital, mobility of university researchers to industry, and of industry researchers to academia, providing professional education to companies (lifelong learning), involvement in local and regional development projects through various models of public-private partnerships, entrepreneurial education for students and internationalization are closely linked and they are analyzed as a whole.

HIGHER EDUCATION IN CROATIA

In order to understand the comparison and conclusions, it is important to know the context in which Croatian universities operate. According to the Agency for Science and Higher Education (AZVO⁴), there are currently 119 institutions of higher education in Croatia: 8 public universities, 2 private universities, 68 graduate and art academies and one university center within a public university. There are also 4 private universities of applied sciences, 11 public universities of applied sciences, 22 private colleges and 3 public colleges. Even though faculties are part of universities in Croatia, they have autonomy and therefore are not so closely connected to the university core and there is no clear identity of the university as a whole, as it is the case in United States or in some European countries. Because of this fragmentation within the university, communication between its constituent units is slow and scarce; there is poor information flow among faculties, university employees and students.

Josip Juraj Strossmayer University of Osijek is one of seven public universities in Croatia with eleven faculties, five university departments and one Academy of Arts. The University was founded in 1975 and it had 18,004 students enrolled in the academic year 2015/2016⁵.

¹ <https://heinnovate.eu/about>, January 05, 2017

² http://www.unios.hr/wp-content/uploads/2015/07/SJJS_Strategija_Sveucilista_HR.pdf, January 04, 2017

³ http://www.uniri.hr/files/staticki_dio/strategija/Strategija_UNIRI_2014_2020_EN.pdf, January 04, 2017

⁴ <https://www.azvo.hr/en/>, January 05, 2017

⁵ www.unios.hr, January 05, 2017

The University of Rijeka was founded in 1973 and it consists of ten faculties and three departments, as well as several scientific and development centers, joint services, other constituents and organizations. Currently, there are 16,654 students enrolled in the academic year 2015/2016 at the University of Rijeka.

As it can be seen, these two universities are quite similar in context of year of establishment, number of students and regional importance, because of which they are easily comparable. They can learn from each other, although they can develop their own ways of being innovative and entrepreneurial.

ANALYSIS OF THE JOSIP JURAJ STROSSMAYER UNIVERSITY OF OSIJEK (UNIVERSITY OF OSIJEK)

Joint research projects

Cooperation between industry and university is crucial for fulfillment of university's third mission in terms of producing knowledge and research that could contribute to social and economic development. The most common way of using knowledge and research as tools for improving socio-economic development are **joint research projects**.

One of the key reasons for encouraging joint research projects at the university lies in fact that "the university is a potential seedbed for new interdisciplinary scientific fields and new industrial sectors, each cross-fertilizing the other" (Etzkowitz, 2003).

At the University of Osijek, there are some cases where companies from industry are looking for opinions and scientific studies from faculties, but these activities are not the part of everyday activity of any faculty and they are not formally conducted or recorded. Because of that the number of these joint projects is not easy to be found and it can only be guessed, based upon the information from university/faculties' web sites and other promotional materials.

There is also no evidence of formal cooperation between faculties and the university or cooperation between faculties and industry that could result in new interdisciplinary scientific projects or knowledge that could contribute to economic development.

Technology transfer activities and spin offs

Even though the university has made significant steps in creating an environment for technology transfer by establishing the Tera Tehnopolis technology park in 2009, the conditions for technology transfer at the university are still relatively poor. Tera Tehnopolis serves both as a business incubator and as a technology transfer office. Even though Tera Tehnopolis's business incubator has around twenty companies in the incubation process, more than half of those companies are not actually technology and innovation-oriented, but rather service-oriented, involved in activities such as bookkeeping, marketing solutions, etc.

Some faculties, such as the Faculty of Food Technology has established the Center for Development and Technological Engineering CERT ING and the FOODLINKS Center in order to improve cooperation and knowledge transfer with industry.

When looking at the number of spin-off firms created by faculties or the university, there is no official information about their existence or number.

Engagement in strategic partnerships

Creating a stimulating environment for research, technology transfer and start-up firms represent a challenge, especially when there is a lack of financial resources. In more developed countries universities easily engage in strategic partnerships with government and industry, but there are also different financing options available, such as venture capital funds. Venture capital industry is much less developed in the EU than in the US (Ranga, 2014), and it is poorly developed in Croatia with only a few venture capital funds operating in the whole country. In February 2015, a new venture fund was established in Osijek, named Frank Ventures with the main goal of financing ten start-ups in their first year with HRK 600,000 (Biberović, 2015). This venture capital fund was established by private investors and until today (2017) it has not made a single investment.

MOBILITY OF UNIVERSITY RESEARCHERS TO INDUSTRY AND VICE VERSA

Encouraging joint research projects through mobility of university researchers to industry, and that of industry researchers to academia is an important activity of entrepreneurial university. At the Josip Juraj Strossmayer University, such mobility almost does not exist due to the opinion that scientists should work at the university and focus on scientific work and “production” of articles, while industry researchers should focus on practical work in their own industry. It is also very difficult to involve industry researchers into teaching at universities, due to strict regulations prescribing who can teach at a university and what kind of academic title they need to have (which is very difficult to achieve while being employed in industry).

Another reason for such situation is the fact that the University is located in the part of Croatia that is still feeling the effects of heavy industry losses during the 1990's war and the global economic crisis of 2008. Not many industrial companies have managed to survive those unfortunate times and those that did invest little in research and development in their own departments. Without engaging in joint research projects, it is not possible to create a stimulating environment for technology transfer, research commercialization, and formation of spin-offs.

Lifelong learning programs

The faculties and the University are still mainly financed by government funds with only a small portion of self-financing. According to research on European universities, 69% of funding of Croatian universities comes from the government and only a small part from the industry and the private sector (Dominicis et al., 2011). A portion of the funding comes from professional education offered through lifelong learning programs. The University offers a range of lifelong learning programs at different faculties. One of the goals stated in the strategy is the establishment of a Lifelong learning center. In addition to the establishment of such a center, the University should constantly revise its lifelong programs (as well as all other educational programs at the University) in order to make them more useful to participants by including new, modern and entrepreneurial content. Considering the limitation of government funding, the faculties and the University itself are trying to fund more activities through European projects. The University is participating in European Union funding programs such as Eras-

mus+ and Horizon2020, which provide the opportunity to network and research with people from throughout Europe. Unfortunately, the evidence of such projects at the university does not exist and it is impossible to say in how many of such project different faculties have participated and how many are still open and active.

European funded projects also provide faculties opportunity to build strategic partnerships and give its employees and students the possibility to get international experience.

Internationalization

When talking about mobility and internationalization of both university staff and students, they are at the same low levels as the participation in international research projects. The interest of domestic students to be included in international mobility is greater than the interest of international students to come to the Josip Juraj Strossmayer University of Osijek. This claim is confirmed by the fact that in the academic year 2014/2015 there were only 28 international (incoming) students enrolled in classes at the Josip Juraj Strossmayer University (in comparison with 110 outgoing students). One of the problems is that there are no programs at the University of Osijek that are taught in English. Another problem that prevents better internationalization of University of Osijek could lie in the fact that students prefer to choose universities that are situated on the coast and whose location is geographically more attractive.

Entrepreneurship education

One of the key activities of entrepreneurial university is entrepreneurship education for students. Although entrepreneurship is offered as an elective course to all university students, entrepreneurial education is offered merely at the Faculty of Economics at all education levels, from the undergraduate to the doctoral level. Course in Entrepreneurship is obligatory for all students at the Faculty of Economics at undergraduate level (three hundreds of them) and at Entrepreneurship major, there are around 100 students at undergraduate level and around 60 at master level. Doctoral program in Entrepreneurship and Innovativeness is international and interdisciplinary program that was developed through a TEMPUS project in 2009 and till now it attracts more than 50 students from different countries (Croatia, Bosnia, Albania, Kosovo, Nigeria, Canada) and from different disciplines (economics, business, engineering, agriculture, humanities...).

Making entrepreneurial content and courses available to all University students should be in University's focus in the future because entrepreneurship education is focus to developing entrepreneurial skills, attitudes and behaviors that could enhance employability of students (which is currently a huge problem in whole Croatia).

Analysis of the University of Rijeka

The University of Rijeka wrote a new strategy for the period 2014 – 2020 which has many important goals and objectives with indicators and measures, but without an action plan or the necessary steps to be taken. Realization of this strategic document depends on a strong leader, one that will encourage changes at university towards its entrepreneurial orientation. The rector of the University of Rijeka seems to have predispositions to make changes. He sees the necessity for university integration, as well as collaboration with industry and government. He is supporting technology and knowledge transfer and is strongly in favor of internationalization of the University (Erasmus mobility and EU funds, but also visibility of the university at the international level). Considering that his field of work is medicine, he had additional education in the field of management, but he would benefit from entrepreneurial education as well.

Joint research projects, technology transfer activities and spin offs

Activity of technology and knowledge transfer and research commercialization is covered from multiple aspects at the University of Rijeka. Their Science and Technology Park, Technology Innovation Center, Technology Transfer Office and Center for Proteomics have achieved great results in this area. Although they need to ensure greater visibility of their work and projects at regional and national levels, they are internationally recognized as a desirable partner in different projects.

In 2008, University of Rijeka founded the Science and Technology Park of the University of Rijeka (StepRi). The main idea behind establishing this kind of institution was to promote and encourage entrepreneurship-based knowledge and new technologies, but also to encourage research commercialization. They offer subsidized offices and lab spaces for startups and spin-offs, entrepreneurial education and consulting. They have close cooperation with the Ministry of Entrepreneurship and Crafts and Croatian Agency for SMEs and Investments. StepRi has been a partner in the Enter-

prise Europe Network since 2011, which allows it to offer advisory services for internationalization of companies.

Technology Innovation Center (TIC) is one of the first entrepreneurial steps made by the University of Rijeka. The idea came from the University of Rijeka in 1994, and three years after, in 1997 the center was founded by the University of Rijeka, Primorje-Gorski Kotar County, City of Rijeka and Privredna bank Zagreb. It is a scientific – technological incubator, with the main goal of assisting in science and technology transfer. TIC has established a foundation called FIPRO. The aim of the foundation is to finance the manufacture of prototypes.

The University of Rijeka Technology Transfer Office was founded in 2009. Its main tasks are promoting culture of innovations, intellectual property protection and technology transfer from university to industry.

The Center for Proteomics was founded in 2006 at the University of Rijeka, Faculty of Medicine. They are known for their collaboration with academia and industry. It is financed through international grants and commercial activities. The Center has collaborated on numerous projects with research institutes, universities and SMEs from Southeast Europe, European Union and USA. Examples of ongoing projects are PACINNO and Becoming Entrepreneurial. PACINNO (Platform for trans-Academic Cooperation in Innovation) has three areas of work: research of best practices of innovative SMEs, education of human resources and knowledge transfer. Becoming Entrepreneurial is a project for knowledge transfer from the University of Rijeka Faculty of Medicine to the biotechnology business sector.

The Foundation of the University of Rijeka is a nonprofit organization which offers financial support for the activities that are not financially supported by the government. Those activities are related to teaching, research and contributing to the community. It was founded by the University of Rijeka, City of Rijeka and Primorje-Gorski Kotar County in 2003. It is financed from contributions of founders and donations. The Foundation is a part of the United Nations worldwide initiative Global Compact, as well as a member of the international organization The Talloires Network.

Additionally, the Center for Local Economic Development at the Faculty of Economics is a remarkable channel for greater involvement of the University in local and regional development projects, but should include the University as a whole, not just the Faculty of Economics.

MOBILITY OF UNIVERSITY RESEARCHERS TO INDUSTRY AND VICE VERSA

Mobility of university researchers to industry and that of industry researchers to university is a vague area. Involvement of entrepreneurs in education is low and it is mainly present as a entrepreneurs as a guest speaker in some courses. There are no formal evidence of such activities. Activities such as "...the use of entrepreneurs in teaching; joint entrepreneurial ventures in research; the offering of status to entrepreneurs as Fellows and Professors of Practice; levels of graduate placement with SMEs (Gibb, 2012)" are also an area with room for improvement at the University of Rijeka.

Lifelong learning programs

University of Rijeka offers numerous lifelong learning programs. Strip Ltd. is a company founded by the University of Rijeka with the aim to develop lifelong learning programs and to promote entrepreneurship. They have carried out several projects, and their most recent project is Ricount – development and implementation of lifelong learning programs using new technologies. Through an on-line platform it is possible to participate in three education modules: Entrepreneurship, EU funds management and Module for employees of the Jadran Galenski Laboratorij company (which is direct professional education for the company). There is also the Center for Applied Psychology, which can be considered as a spin-off. It offers education for government bodies and companies (services offered to clients are programs and projects related to research, education, prevention, counseling and evaluation of existing projects).

Internationalisation

University of Rijeka has been participating in Erasmus mobility programs since the academic year 2009/2010, when 35 students and 7 university employees visited universities in Poland, Austria and Italy, with a budget of EUR 70,752. In the academic year 2013/2014, 121 students and 30 university employees visited different European universities, and the University of Rijeka had 79 incoming students. The situation was even better in the academic year 2014/2015, when 137 students and 25 university employees used Erasmus mobility, and there were 154 incoming students at the University of Rijeka.

Entrepreneurship education

Entrepreneurship education is offered only to the students of the Faculty of Economics at undergraduate and graduate level and the content of entrepreneurship courses is focused on small business management.

CONCLUSION

National, regional and EU policies for innovation, entrepreneurship and higher education should contribute to creating a stimulating environment for the development of entrepreneurial universities. Based on analysis and research, European Commission gave policy recommendations for policy makers and higher education institutions. Recommendations for policy makers address the need for clear regulatory frame for online learning, quality assurance, clarifying the funding implications, intended outcomes and timescale for the innovation. Recommendations for higher institutions focus on changing the landscape of teaching and learning in higher education through engaging faculty members in new innovative practice, stimulating those who engage in such a practice and review existing organizational boundaries and linkages. Secondly, they focus on technology and student performance and, finally, on globalization and internationalization strategies. All of these recommendations are very important for Croatian policy makers and universities because they could serve as guidelines to start the processes of change and as guidelines how to become more innovative and entrepreneurial. All of these changes are not easy and they cannot be done over night.

Changes at the Josip Juraj Strossmayer University of Osijek usually come from enthusiastic individuals and since they are not part of strategic decisions of University leadership, it takes more time to carry them out. Another obstacle is the current policy and laws that do not stimulate innovative initiatives of university employees. Something that the University and its faculties should focus on is the integration of University in terms of starting cooperation among university employees, creating stimulating reward programs for employees and create a supportive environment for interdisciplinary work. Connecting employees through creation of University intranet, and organizing weekly meetings of university researchers and industry researchers and representatives for the purpose of networking is one of possible ways for creating a stimulating environment for joint research projects that could later result in developing other activities of entrep-

reneurial and innovative university. It takes willingness of the University leadership and all employees, but also changing of certain policies at the national level, that could contribute to making the University more entrepreneurial. National policy should undergo changes, especially in the area of requirements for promotion to higher academic rank, where the emphasis should be on publishing research that contributes to socio-economic development, and in the area of rewarding innovative employees. Changing ourselves and encouraging others to change is the step forward in creating entrepreneurial university in Osijek. It only depends on how many people are willing to make that step.

There are considerable and important efforts at the University of Rijeka directed at becoming an entrepreneurial university. Entrepreneurial orientation of the university is more visible in strategic documents and in the support from the university leadership, but still, quite often and in many activities, it is just the effort of individuals. Information about achievements are scattered and there is a lack of communication within the university. University of Rijeka took the entrepreneurial path, but the idea of entrepreneurship has to be spread throughout the University and it has to be transformed into widespread activities. An Alumni association could be a great step for integration. Some faculties and departments have their own Alumni associations, but it is necessary to have University's Alumni, which would lead to closer connections and create a stronger identity of the University. Alumni members would thereby get a chance for greater involvement in University's activities. This could be the basis for future strategic partnerships, joint research projects, or other activities. It is important to note that the University of Rijeka and its constituent units are highly oriented towards internationalization and are putting significant efforts into making partnerships and research projects with universities from Europe and the world, financed by EU funds and international grants. At the end of 2013, almost 7% of University's budget was coming from EU research funds (Strategy 2014-2020). That percentage should increase with the years.

Both observed universities have some characteristics of entrepreneurial university and both have taken some steps towards becoming more innovative and responsible and have started introducing activities that are connected to the "third mission". But, in most cases, those changes are just starting and are still dependent on individual initiative, and a lot of energy and effort is still needed to become entrepreneurial and innovative. What is missing in both cases is more communication between university departments, more support from the university leadership and more supportive environment for interdisciplinary and collaborative work between researchers themselves and between researchers and industries. In order to keep their role as key players in economic development and as knowledge creators, universities need to change faster, involving all stakeholders in the process of change.

Finally, because of above mentioned limitation in information gathering, it is possible that some facts have not been taken into account when making conclusions. But, nevertheless, this paper can be useful as a good basis for further research of entrepreneurial potential of the University of Osijek and the University of Rijeka.

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