

Strategy Development and Success Stories
Looking back and into our future

Creating R&D Capacities and
Instruments for Boosting Higher
Education-Economy
Cooperation







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List of Abbreviations

EC	European Commission
EHEA	European Higher Education Area
ERA	European Research Area
EU	European Union
FP 7	7th Framework Programme
GDP	Gross Domestic Product
HE	Higher Education
PCU	Partner Country University
QA	Quality Assurance
R&D (SC)	Research & Development (Service Centre)
RTDI	Research, Technology Development and Innovation
SEE	South-Eastern Europe
STI	Science, Technology and Information
UKIM	Ss. Cyril and Methodius University of Skopje
UNSA	University of Sarajevo
UoM	University of Montenegro
UP	University of Prishtina
WBC	Western Balkan Countries

0. EDITORIAL

Inventing our future together

*“With an ageing population and strong competitive pressures from globalisation, Europe’s future economic growth and jobs will increasingly have to come from innovation in products, services and business models. This is why innovation has been placed at the heart of the Europe 2020 strategy for growth and jobs. With over thirty action points, the **Innovation Union** aims to improve conditions and access to finance for research and innovation in Europe, to ensure that innovative ideas can be turned into products and services that create growth and jobs.”*

(“Innovation Union, turning ideas into jobs, green growth and social progress”)¹

The Innovation Union is one of seven flagships of the Europe 2020 Strategy. It was launched to counteract a European “innovation emergency”², in which the member states of the European Union (EU) spend only a small percentage of their GDP on research & development: in 2007 in the EU-27, R&D expenditure as a percentage of GDP equalled only 1.85%³. The volume of R&D investment reflects the economy’s efforts in creating and accumulating new knowledge, which is essential to modern knowledge-based economies.

Against this background, the Europe 2020 Strategy aims at increasing investment in R&D at 3% of GDP in Europe, in particular by improving the conditions for R&D investment by the private sector, and at developing a new indicator to track innovation. The Europe 2020 Strategy (Innovation Union), together with the Lisbon Strategy (European Research Area - ERA) and the Bologna Declaration (European Higher Education Area – EHEA) constitute three very ambitious goals which the EU has set for its member states and for those which are likely to join the EU in the close or far future.



Almir Kovačević, Executive Director, WUS Austria

¹“Innovation Union, turning ideas into jobs, green growth and social progress”; www.ec.europa.eu/research/innovation-union/index_en.cfm.

²“Why do we need an Innovation Union?”; http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=why.

³“Innovation Union, turning ideas into jobs, green growth and social progress”; www.ec.europa.eu/research/innovation-union/index_en.cfm.

Uvalić, Milica (2006): “National systems of research and development in the Western Balkan countries”.

In the Western Balkan countries activities in the field of R&D are poorly funded, undervalued and underpaid which has a major impact on the development of science and research infrastructures as well as on the quality of research . Although it is evident that conditions for investment in R&D are not ideal in the European Union either, there is a positive trend into the right direction. It is therefore essential to support the WBC in their efforts to keep up with these positive developments and help them to set up coherent strategic plans in the area of RTDI in accordance with EU trends and standards. The project “Creating R&D Capacities and Instruments for Boosting Higher Education - Economy Cooperation”, financed through the TEMPUS programme of the European Commission, was designed to support the participating beneficiary countries in their aim to find tailor made solutions to these challenges, and bring them closer to successful participation in the European Higher Education Area and the European Research Area.

1. ABOUT THE PROJECT

Background

Around the world, it is widely acknowledged that information and knowledge are one of the main drivers of social and economic development. To this end **universities take a central role** in the future competitiveness of any country by increasing a region's level of knowledge, producing a highly-qualified workforce, and developing technological innovations. In order to encourage development and collaboration across European universities within these areas, the European Union defined three complementing essential strategic frameworks, the Bologna Process, the Lisbon Strategy and the Europe 2020 Strategy which are intended as a blueprint for all European universities' activities. These processes have further lead to the creation of a **European Higher Education Area (EHEA)** and a **European Research Area (ERA)** both of which are intended to represent a "living" structure under constant development. Successful integration into the ERA, as well as into the EHEA, is of utmost political and economic importance for both the Western Balkan (WB) region and the countries of the EU.



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The WB countries underwent massive institutional changes in the 1990s, which directly affected the research and innovation sector. Following these changes a huge amount of institutional memory on Research, Development Technologies and Innovation (RTDI) was lost and is slowly re-built in a step-by-step process. In 2008/2009 most of the universities in the WB region neither had their own Research and Development (R&D) strategy nor R&D support services nor R&D units

at university level. Furthermore, one of the main barriers to the development of an R&D system relates to the linking of R&D institutes and universities with the private and economic sector: to this end WB universities rely principally on individual initiatives, lacking a consistent institutional approach.

The project Creating R&D Capacities and Instruments for boosting Higher Education -Economy Cooperation aimed at addressing these specific shortages in the field of R&D at the most influential universities in four countries – Bosnia and Herzegovina, Kosovo, Macedonia (FYR Macedonia), and Montenegro. (highlight this paragraph visually)

Objecitves

The project aimed at addressing the immediate individual research needs at the following universities:

- Bosnia and Herzegovina – University of Sarajevo
- Kosovo – University of Prishtina
- Macedonia (FYR Macedonia)– Ss. Cyril and Methodius University in Skopje
- Montenegro – University of Montenegro

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The most significant universities in each country received intensive support in order to establish R&D capacities and instruments which offer long-term benefits for the respective universities, the academic/research community and society at large. The aim was to enable the universities to assume a central role in the national R&D system, thereby strengthening the role of higher education (HE) institutions and acting as a driving force for regional economic development.

Main objectives:

- Evaluation of R&D situation at the university/in the country
- Creation of R&D Service Centres
- Development and implementation of an R&D strategic framework
- Implementation of R&D pilot activities
- Validation of sustainability and quality control

The objectives focused strongly on the higher education “knowledge triangle” and on networking in order to foster cooperation between HE institutions and industry.

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Activities and outputs

OUTPUT 1.

Self-Assessment - analytical analysis of current R&D situation at South-Eastern European (SEE) universities:

Output 1 covered a self-assessment process which was conducted at each of the four partner country universities (PCUs). Each university collected data concerning the R&D environment at their institution. The assessment was conducted at both university and faculty levels.



OUTPUT 2.

Definition and setting up of R&D strategies at SEE universities

A strategy development group was set up at each SEE university. Based on the assessment results, the groups developed their own R&D strategy at university level (see Chapter 2).

OUTPUT 3.

Establishing of R&D Service Centres

An R&D Service Centre (R&D SC) was established at each SEE university. Staff (centre manager and assistant/s) was recruited and organisational requirements defined. In addition, tailor-made business plans were developed to ensure the centres' sustainability in the long-term.

OUTPUT 4.

Definition and implementation of services and instruments

Objective 4 concerns the selection of services and instruments which the R&D SCs offer and plan to offer in the future. These closely relate to the overall R&D strategy developed in Output 2. R&D SC staff received training at EU universities, enabling them to develop the skills necessary to carry out their services successfully.

OUTPUT 5.

Definition and implementation of pilot activities

Pilot activities (see also success stories, Chapter 3, for a small selection) were initiated at each SEE university to provide services and instruments for researchers.

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Creating R&D Capacities and Instruments
for boosting HE-Economy Cooperations

University of Sarajevo
University of Prishtina
University of Montenegro
Ss. Cyril and Methodius University of Skopje
CIRPS - Sapienza University of Rome
University of Oxford
University of Leoben
Austin, Pock + Partners
K - CIRT
WUS Austria

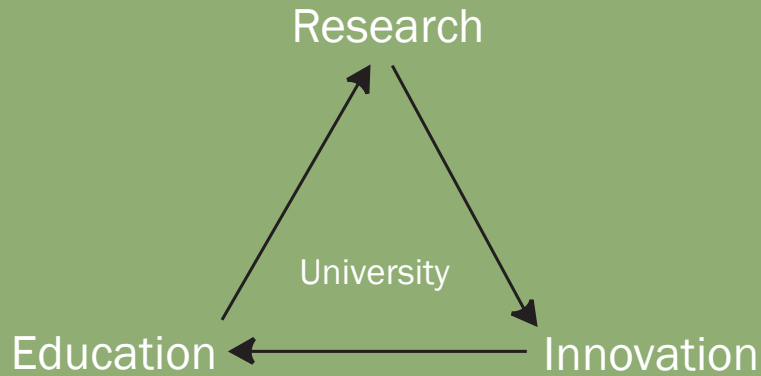
znanje i razvoj



R&D CAPACITIES – ADAPTING RESEARCH STRUCTURES
TO ENHANCE UNIVERSITY KNOWLEDGE TRANSFER

September 29th, 2009, University of Sarajevo

Outlook



HE Knowledge triangle

Currently one of the biggest challenges remains the linking of universities with the (private) business sector. In the Western Balkan countries cooperation between the two hardly exists, and where it does, the relationship is usually built on a very fragile legal and political framework; additionally, the worldwide financial crisis (since 2009) created unfavourable financial conditions for all participating countries. Within the framework of the project university-industry cooperation remains a top priority to the very last minute. Besides this, the four R&D SCs have successfully managed to find their own place within their university's structure and have created their own agenda to meet the needs of academia and administrative staff at their universities. This was and is by no means an easy task in an ever changing academic and institutional environment, such as in the WB region. It is inspiring to see how the staff of the four R&D SCs - despite all difficulties - remain faithful to their mission: to serve their universities and support the research communities in their countries in attaining excellence in research.

„ It was very challenging to develop business plans for the R&D Service Centres together with the PCUs. They had to be tailored not only to the circumstances in SEE but also to each individual university. However, we do believe that the results are impressive and that the R&D Service Centres laid a good foundation for their future work.“ (Andreas Gemes, Austin Pock + Partners)

2. STRATEGY DEVELOPMENT

2.1. UNIVERSITY OF MONTENEGRO

2.1.1 R&D Service Centre at the University of Montenegro



“The work of the R&D SC, which greatly benefits from the continuing and strong support of the Vice-Rector for international cooperation and scientific affairs, has already achieved very ambitious goals with highly sustainable results.” (Almir Kovačević; WUS Austria)

Basic data

The Research and Development Service Centre at the University of Montenegro (R&D SC) was formally established in October 2009 within the framework of the TEMPUS project “Creating R&D Capacities and Instruments for boosting Higher Education - Economy Cooperation”. In 2011, as the second anniversary is approaching, we can say that the R&D SC is strongly embedded into the University structure and recognised as an important unit providing administrative and management services. Consequently, there are no doubts that the R&D SC will remain fully functional after the completion of this Tempus project in January 2011. It is therefore evident that the Centre is one of many sustainable outcomes of the project.

Location and staff

The Centre is located in the Rectorate building of the University of Montenegro (UoM) and is known as Centar za podršku istraživanjima i razvoju na Univerzitetu Crne Gore in Montenegrin. Currently, the Centre employs two staff (October 2011): Ms. Tatjana Knežević, manager, who has been working in the Centre since March 2010 and who is a full-time employee of the Rectorate, and Dr. Vladimir Jaćimović, who has been working there since October 2009. Due to the increase of workload, the Centre currently plans to also employ an administrative assistant.

Role of the R&D Service Centre

The position and responsibilities of the Centre are clearly defined in the Research Strategy Action Plan at UoM until 2013. The Centre works under the supervision of the Vice-Rector for international cooperation and scientific affairs. The Collegium meetings with the Vice-Rector are usually organised on a weekly basis. Sometimes, these meetings also include other university services, such as the International Relations Office or the EURAXESS office, as their activities often overlap with the work of the R&D SC. Moreover, the Centre receives advisory support from the University Advisory Research Board, which was formed in April 2011.

Risks and obstacles

The R&D SC cooperates with a number of external partner institutions in Montenegro and abroad. Naturally, one of the closest partners is the national Ministry of Science. Since its start-up, the Centre has worked in an ever-changing environment of financial cuts, where even relatively small funding (both from the government and from companies) is not easily available. This is one factor that slowed down the implementation of some of the Centre's activities. Nevertheless, even in times of budget cuts, the need for the Centre is evident and acknowledged by the University more than ever before.

Achievements

The R&D SC has organised or taken part in numerous (and various) activities. These activities include: initiatives for new projects, participation in project proposal writing, support in project application process, organisation of various workshops, meetings with researchers, meetings with companies and agencies, promotional activities, project management. As one of the latest activities, the R&D SC has taken part in organising a competition of student inventions at the UoM. The Centre is also involved in collecting data on ongoing projects and all available equipment at UoM (see success stories, Chapter 3). The Centre itself currently manages six international projects. By the end of 2011, three out of six projects will finish, whereas two new projects are to start by the beginning of the new year. However, the biggest success of the Centre is that it proved to be a reliable, important and self-sustainable service provider inside the University. More details about the R&D Service Centre of the UoM can be found at www.rd.ac.me.

2.1.2. University of Montenegro Strategic Research Plan



Background

Preparatory activities for launching the strategy's drafting process were initialised in parallel with the evaluation process (external evaluation of quality of research at UoM). A strategic planning expert was appointed. First an internal call for proposals was launched, and the intention was to involve somebody from UoM staff. However, since none of the local experts applied, the University management appointed Ms. Luisa Milić, MSc, who lives and works in the United Kingdom, but is of Montenegrin origin. She was able to carry out the strategic planning process in the Montenegrin language, thus full participation of the research community was possible.

The overall strategic planning process was based on the Intermediate Delivery Planning Work Plan for two periods (from May to the end of December 2009; and January to March 2010), which she had developed together with the project coordinator and members of the project team.

Since it was crucial to involve both management of the University/units and the wider research community in the process, a Working Group for strategy development was appointed, gathering representatives of the top University management (Rector, Vice-Rectors, Secretary General of the UoM, R&D Service Centre and International Relations Office representatives, legal department representative), unit representatives (Deans, Directors of the institutes, Vice-Deans for research/international cooperation; all these members are also researchers), teachers' association representatives, and representatives of the Montenegrin Academy of Sciences and Arts.



The research community of the University of Montenegro was involved in the project activities from the very beginning, thus, given the importance of the process they were involved in, the communication strategy included the directive to start the information flow from the top management: the project itself and its initial activities were first announced at the meetings of the Senate of the UoM. Taking into consideration that the UoM is still not a fully integrated university, this was the ideal starting point for further activities: by involving all of the units in the project activities not

only awareness was raised among all parties, but also ownership was shared between all. All events started with an introduction to the project itself, especially when new participants/a new type of audience were addressed.

The document was adopted at the level of Governing Board and then published in English and Montenegrin languages. After publishing, the document was presented to the Senate and was made available to the wider community at the UoM. Today the document is available to all three universities in Montenegro, Academy of Sciences and Arts, Ministry of Science as well as to the wider public. Since different reform activities are currently being carried out at the UoM, especially in the field of Quality Assurance (QA) in research and education, soon we will have a joint event where all of the newly adopted documents will be presented to the wider public and also to the media/press. The results of strategic planning in research played an important role in the development of QA documents, facilitating the taking up of the research component and the positioning of new research support structures in the overall University organisational scheme, thus contributing to the strengthening of the system as a whole, and to setting the basis for what was a primary purpose and driving force behind the document's adoption.



Executive Summary

The strategy was developed based on

- extensive consultation with the University management/leadership and individual faculties/institutes; synthesis of inputs and recommendations from the Report on External Evaluation of the Research Potential of the University of Montenegro;
- exchange of experience with EU universities (good practices);
- internal evaluations including the University Research SWOT Analysis, and individual proposals from each University unit and their recommendations and inputs at the Strategic Research Planning Workshop held in January 2010;
- the Plan, after providing an overview of the university's current research environment and profile, focuses on its purpose: guiding values, mission and vision.

Guiding Values

- Integrity: expressed through paying attention to the highest ethical standards in all domains, and insistence and demand for honesty, decency and fairness,
- Academic freedom: current commitment not to compromise academic freedom; its advancement is seen as the foundation for any forthcoming research undertaking,
- Research focus: continuous efforts to improve awareness about the research function within the University that leads to global as well as individual transformation and focuses on issues critical to regional development, national interests and the global community,
- Teamwork and collaboration: inter-disciplinarity, teamwork, readiness to help each other, external partnerships, and capacity to create new fields of research,
- Reward based on values: exercised through willingness and desire to recognise and reward dedication, contribution, superior quality in research and services of active research staff as a key instrument for motivation.

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Research Mission Statement

- The mission was defined as a creation of a pervasive research culture across all academic disciplines and to achieve a leading position in the region within areas that are of national importance, by
- sustainable development and effective use of the University infrastructure and human resources,
- continuous improvement of supporting frameworks by implementing best practices adopted by world leading institutions and adapting them to the local context,
- meticulousness, creativity, transparency, sustainability and humanity of scientific research and art work as a foundation for advancement of quality of life, and
- promotion and development of multidisciplinary research initiatives to create a fully
- integrated knowledge society and make significant contributions to the social and economic development of Montenegro and the region.

Research Vision Statement

The common vision about the University's future as regards research will serve as a framework for the concrete direction in the area of research for the years 2010-2013 and will guide every aspect of research by defining what the University needs to accomplish in order to achieve sustainable quality growth in research areas. The vision informs all decisions and activities. It is the living, breathing heart of the institution.

Strategy itself

The Strategy starts with a statement about the strategic intent, and the recognition and assessment of challenges and opportunities the University faces, and continues with a realistic assessment of the University's current and potential capacity for effectively addressing or capitalising upon these challenges.

Research priorities:

Since this is the very first comprehensive research strategy of the UoM, it was decided that all units (faculties, institutes) should be given equal opportunity to further develop in this initial stage of strategic approach to the research function. This resulted in a total number of 13 priorities, providing enough space to all units to try and enhance their research capacities (the priorities are more closely defined in the text of the strategy):

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- Agriculture
- Ecology
- Energy
- Health and wellness
- Information and communication technologies (ICT)
- Life science
- Materials and new production technologies
- Marine biology and maritime studies
- Socio-economic development
- Society, science and education
- Spatial management
- Tourism
- Transport research

Strategic Research Programme Goals, Success Factors and Objectives

The goals, success factors and objectives have been developed to effectively respond to the external evaluation of research quality at the university.

Goal 1:

- To improve research capacities and capabilities, facilities, infrastructure and administrative support for research.

Objectives:

- Recruit, develop and maintain highly qualified and diverse research staff and increase the number of active research staff in the next three years to 85% of total,
- Establish fully operational research infrastructure and R&D Service Centre,
- Increase the University's research capacity by providing an adequate physical environment and equipment which supports the research mission, vision and strategic goals,
- Enhance and stimulate research productivity and international collaboration,
- Restructure and increase efficiency of the library system and services.

Goal 2:

- To build nationally and internationally recognised research programmes and enhance the University's visibility and reputation in the area of research.

Objectives:

- Select key research priorities and research programmes and improve the internal assessment of the selected programmes,
- Incorporate research in the education process (teaching) more intensively and foster internship schemes,
- Strengthen/intensify the conditions for academic promotion on the basis of research results at University level,
- Establish a research web-portal to support and promote the University's research activities,
- Promote research within national priorities in order to be competitive at international level.

Goal 3:

- To be more creative and innovative in pursuing external research funding objectives.

Objectives:

- Achieve a level of uniform participation in national and international/EU scientific research projects, increase research activities, funding and mobility,
- Establish links with existing networking initiatives in order to explore new possibilities of participating in published calls (together with line Ministries),
- Foster bilateral funding.

Goal 4:

- To strengthen and increase collaboration and research partnerships with other national or international institutions, industries, and government agencies.

Objectives:

- Build research partnerships with external institutions, industry, academia and government, which significantly advance the University's research programmes and external funding opportunities,
- Establish Interdisciplinary Research Centres for fundamental and applied research that will employ PhD students for the period of four years,
- Establish joint master/PhD programmes with other prominent universities,
- Establish international initiatives which define joint access to expensive large scale equipment (e.g. INCO-net),
- Foster mobility of staff and students (outgoing and incoming),
- Establish Alumni Research Club for possible collaboration with alumni at national and international level.

Goal 5:

- To improve performance, assessment and accountability of research activities and sponsored projects.

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Objectives:

- Perform continuous monitoring of research activities,
- Advance scientific research activities through clear plans from University units and Research Centres.

Apart from these goals, some of the so-called 'stretched ideas' were introduced: As the University continues to expand with an increased number of faculty research members and graduate students over the next three years, the amount of knowledge transfer activities will grow proportionately. Partnering with industry and commercialisation of research outcomes are still not widely understood and widely applied across the University. We expect the Faculty of Economics to take initiatives and investigate possible models for technology transfer mechanism by researching best practices of other universities and organisations, and identify and approach a technology transfer partner to coach University management and research staff. Development and strengthening of the technology transfer as part of the R&D Service Centre's services may contribute to revenue generation for the University of Montenegro.

The second idea is the possible establishment of a University Innovation and Incubation centre to support the creation and development of entrepreneurship in Montenegro with special focus on innovative start up companies, science, research and development of talented students.

“The University is fully committed to support its research enterprise by increasing support to researchers and enhancing the efficiency of research administration”.
(University of Montenegro Strategic Research Plan)

Research Administration and Resources:

To support this statement, the Strategic Plan addresses several different levels and players. It emphasises the following:

- Establishment of a fully operational R&D Service Center at University level (its roles and responsibilities are fully described in the Plan itself),
- Role of the University libraries.

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In addition, the related role of the research centres and individual researchers was described in detail. When it comes to human resources (HR), they were mentioned and explained in detail – as recommendations, development of HR strategies, a career-span, University-wide research faculty and staff development and mentoring programmes. Financial resources and their increase, management and sharing, is to be supported from the central level, which should be responsible for:

- management of research costs, resources and risks, and improvement of assets utilisation to deliver optimum research results,
- actively growing and diversifying sources of income for research through pursuing new external funding opportunities, broadening their base and investing them strategically in the future, and
- seeking continual increase for internal funding support for research.

Since national and internal funds for research are limited securing external funding has become one of the main objectives. In this respect, the Plan proposes the mapping of external funding programmes, which should help the University to boost its capacities and capabilities.

Quality Assurance for Research:

Quality Assurance cannot be treated separately from all other issues. Against this background, the Strategic Plan emphasised that the University should develop a quality assurance and quality improvement framework by developing a quality control and evaluation system for all teaching, research, capacity development and performance. Consequently, quality assurance in research will be an integrated part of the quality assurance system and will focus on affirming and enhancing quality standards of research and its inclusion in teaching, developing and follow-up on research plans, QA of PhD programmes, QA for research documentation routines and document production, and establishment and execution of research projects. The R&D Service Centre may function as an important link between the QA centre and quality in research.

Monitoring and Evaluation of the Implementation of the University's Research Plan and its Results:

The Strategic Plan was not defined to be static, but to be a dynamic planning process involving continuous transformation, critique, adaptation and refinement. Thus, the monitoring and evaluation of the Strategy's implementation should be carried out regularly. The Plan provides a timeline for its implementation, accompanied by major milestones, but, as the Strategy was defined as an ongoing process, they were defined in a broader sense. The Plan concludes with the performance metrics and table of results:

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The Plan also contains four appendices:

- Resources for realisation of strategic research programmes,
- Matrix of working/planning group's recommendations,
- Proposed strategic research programmes,
- Resource, estimated future costs and future revenues of each programme proposed.

Texts for UoM provided by: Tatjana Knežević, Vladimir Jaćimović

2.2. SS. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE

2.2.1 Research and Development Support Centre of University in Skopje

“The staff of the R&D SC at the University of Skopje is young but experienced, and they have provided the pre-conditions at faculty level for meeting institutional challenges lying ahead.”
(Almir Kovačević; WUS Austria)



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The R&D Support Centre⁵ (R&D SC) has been officially recognised as an entity of the Centre for Research, Development and Continuous Education (CIRKO) – a network of centres placed at the Faculty of Mechanical Engineering. As one of the most important strategic objectives, the recognition of the Centre was an excellent start up for the successful implementation of all following activities.

In the last two years since the establishment of the Centre, its staff has offered the following services to university staff, students and researchers:

- Identification of research funding programmes
- Establishing of consortia
- Support in the preparation of new project proposals
- Financial management and planning

⁵Scope of work of UKIM R&D SC encompasses mainly activities in the field of engineering, as it is placed at the Faculty of Mechanical Engineering.

The R&D SC is appreciated as a very flexible institution and for supporting researchers in every aspect of their work. The team of the Centre has been asked to join further projects at the university, which has resulted in the enhancement of their skills and expertise beyond the services provided within the framework of this project. This has resulted in the impressive figure of 20 project applications submitted by researchers with the support of the R&D SC.



UKIM main campus- Source: UKIM administration archive

Furthermore, the organisation of two scientific conferences in the last two years has proven to be a great networking possibility within the academic and research community, and has provided an overview of the needs of the research community on the one hand and of industry on the other. The further development and the growth of the R&D SC are in accordance with the project goals and the strategic goals of the University as set out in the business plan of the R&D SC.

2.2.2. R&D Strategy of the University in Skopje⁶

Background

The research strategy is part of the overall strategy for the development of the Ss. Cyril and Methodius University (UKIM) 2012-2020 and represents the first R&D strategy at the University.

This material is a draft strategy which has not been adopted by the University bodies yet. It is planned to be presented to and adopted by the University Management at the end of 2011 or beginning of 2012.

The document is set to provide the University management with an overview of the current state and with guidelines for intervention in the most crucial aspects for setting adequate preconditions and an infrastructure for R&D activities.

Further development of this strategy should include correlation with key strategic national documents: National Strategy for Research and Development (currently in the process of development by the Ministry of Education and Science); and the National Strategy for Innovation 2012-2020 in the process of development by the Ministry of Economy in cooperation with the OECD). Furthermore, UKIM with its human resources and infrastructure should play one of the key roles in the implementation of these strategies. The inclusion of those strategies in combination with the assessment of the University's research capacities may result in the definition of more precise development opportunities for future R&D activities of UKIM and of a better defined orientation of the R&D Support Centre itself.

The R&D strategy of UKIM further specifies the steps necessary to reach the goal of the University to become an internationally recognised research university and the standard-bearer of Macedonian scientific and innovative mentality.

This strategy has been mainly developed by the R&D Service Centre's staff with support of relevant University's stakeholders. The R&D SC is also going to cover most of the activities for the implementation of the strategy.

⁶At the moment of preparation of this publication, the R&D strategy of UKIM is still in the phase of approval by the Ss. Cyril and Methodius University Senate.

Executive Summary

The Ss. Cyril and Methodius University in Skopje (UKIM) is the oldest state university in the Republic of Macedonia, founded in 1949. The University represents a functional community of 22 faculties, 5 research institutes and 11 accompanying members. Its activities are stipulated by the Law on Higher Education and the Statute of the University. The Ss. Cyril and Methodius University develops study programmes in all scientific fields - social, technical, natural sciences, mathematics, medical, bio-technical sciences and arts. Besides the faculties, research work, is also carried out in the independent research institutes as an integral part of the University.

UKIM R&D Objectives:

1. The Ss. Cyril and Methodius University shall become one of the top 100 research universities of Europe due to the results achieved in activities related to study, and research and development work.
2. The Ss. Cyril and Methodius University should maintain its position as a leading national institution for the provision of support in research, development and innovation.

1. Structure

The University is located on four main campuses across the Macedonian capital Skopje. Its main activities in the field of R&D are carried out at the Engineering campus, as well as at the campus for Natural Sciences and the campus for Medicine.

Since the establishment of the University all of the faculties and research institutes have been separate legal bodies. This allowed higher flexibility of research activities and a better organisation of the teaching process, but it was also a serious barrier for strategic development of any of the key axis of interest of the University. Since 2009, the University has been formally integrated, providing official inclusion of the University management in all activities.

Shortcomings: Research work is still not integrated but separated between the faculties and scientific institutes. Furthermore, even within the same institute R&D activities are not systemised, but are driven by individuals. This causes inefficient scientific work, poor equipment and significantly lower outcomes, and higher costs.

Aims: Real integration (not only official) as aimed to be achieved for obtaining the following:

- Provision of funding to expand the network of educational institutions which are focused on R&D activities,
- Building mechanisms and tools for collaboration, between the faculties, between universities and scientific institutes, and between universities, institutes and university bodies,
- Defining the status and the role of scientific institutes, the categorisation of jobs which deal with the functioning of R&D at the University, with clearly identified rights and responsibilities of each body and each function.

2. Management

The coordination of educational and research activities of the faculties and the scientific institutes is carried out by the Deans, i.e. the Directors of the Scientific Institutes and its respective bodies; the coordination of UKIM is implemented by the Rector and other relevant UKIM bodies, in accordance with the statutes for the realisation of quality in education and scientific research activities.

Aims: The most important aim for the future with regards to university management is to raise the importance and the influence of the management in:

- to define R&D priority areas: choosing priorities based on real market needs and the University's potential,
- to coordinate R&D activities: avoid overlapping of research activities, support the networking of researchers that cover similar or related research areas,
- to set up policies for the development of the R&D infrastructure: avoiding overlapping in research equipment and materials, this should result in better developed research facilities,
- to increase the administrative capacity of UKIM in initiating and managing of projects, and in application of research results.
- To develop the UKIM information system into a system enabling the reporting on and analysis of research work.

3. Finances

UKIM is a public owned institution financed by the national budget, through the Ministry of Education and Science. The financing of the teaching process is mainly covered by funds received from the Ministry of Education and Science and partially from the participation fees of its students.

In order to justify its budget funding volume, the university annually prepares a financial requirement plan for its activities. This plan has to be approved by the University Senate and is sent to the Minister of Education and Science.

Shortcomings: Limited state funding is one of the main obstacles in the process of change and development of the University and its units. The state only covers staff costs and overheads, not assuring either physical (laboratories, research facilities and equipment) or information infrastructure (access to databases)⁷.

Aims:

- Optimised usage of the limited governmental funds opened for improvement of research infrastructure at the public research institutions,
- Increased access to governmental support for the creation of university spin-offs,
- Governmental co-financing for the development of technology, innovation and transfer of know-how,
- New income sources for UKIM (IP rights, spin-off companies, business related projects, etc.),
- Increased usage of alternative sources of financing: (EU funds, revenue from commercialisation of research, other sources)⁷.

⁷This situation is slightly changing to the positive, since the Government of the Republic of Macedonia in the period 2010 -2014 invests ~ 60 million EUR for purchasing laboratory equipment and accessories for research for all public universities and research centres.

4. Cooperation and Networking

Regional cooperation, as well as cooperation with EU universities has been set as a priority for UKIM. This cooperation is mainly based on joint research projects, joint organisation of conferences and similar events, as well as on the mobility of researches and/or students. The bilateral cooperation of the University includes agreements for cooperation with more than 60 universities. Through the continuous dynamics and intensity of teaching, research and cooperation activities long-term bilateral cooperation has also been established with universities from the United States of America and Australia.



UKIM management at doctoral graduation ceremony – Source: UKIM administration archive, 18.06.2010

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Shortcomings: Although the University has a rich portfolio in establishing international cooperation with higher education institutions and bodies, the recognition of new study programmes and curricula as a basic pre-condition for mobility of students and the development of teaching and research staff is long behind its development objectives. Also, international cooperation has brought much less joint projects in basic or applied research as a result of the limited research infrastructure of the University.

Aims:

- Strengthening the quality of international cooperation,
- Upgrading the Department of International Cooperation in order to develop capacities for meeting the needs of the integrated University and all of its units,
- Research in Partnership: building up world class skills and expertise in R&D through strategic alliances and partnerships.

5. Human Resources

The University's employment and personnel development policy and strategy constitutes a very significant part of the successful implementation of the research strategy. This policy unites various factors like: financing, efficiency of the studies (especially at postgraduate and doctoral level), access to research infrastructure, offering mobility, and stimulation for professional development of all personnel actively involved in teaching and research. The UKIM currently employs over 2300 teaching and associated staff, more than 300 scientific staff and assistants at institutes who are involved in the realisation of educational and scientific processes. Along with those employees, the University employs additional project based personnel covered by the University's or its units' income.

Shortcomings: Currently the legal and regulatory frames for funding and employment at public higher education institutions limit the University's autonomy for planning of its staff requirements for employment, and for renewing and developing its teaching and research staff.

The main problem that makes the university lose quality people is limitation in employment and even more so the lack of stability in the process of re-filling the places of retired staff with young teachers and researchers. This, combined with the stricter requirements by the government for enrolment of students at all levels of higher education threatens the University's long term development.

Aims:

- Completion of the re-organisation and modernisation of the processes and management of the University's administration,
- Development of an integrated system for the analysis of human resource development at UKIM that would also define future needs,
- Adaptation of mechanisms for enrolment of young scientists who show outstanding research potential,
- Bring down by 2020 the average age of employees, preferably to drop under 45, as a result of taking in new employees,
- Creation of a system that would ensure opportunities for professional development around the country as well as internationally,
- Stimulation of inclusion of visiting professors and researchers' mobility in teaching and research,
- Promote the employment of talented researchers and teaching staff by UKIM through international competitions and targeted search,
- Increase salaries and offer other stimulation for staff enrolled in research activities

6. Research Activities

The system of scientific-research at the UKIM covers scientific research, development and training of research staff, and the research infrastructure. This activity is regulated by the Law on Scientific Research and the Law on Higher Education.

According to the legal framework, scientific institutes and faculties are entitled to academic freedom in performing fundamental, developmental and applied research. The results of scientific research are evaluated and communicated through: reviewing, publishing in scientific papers, scientific reviews, expert assessment and application of results in practice.

Studies are most often of international importance and are funded by foreign institutions and foundations, many of which are projects financed within EU programmes for the development of higher education, research, innovation, etc. A great number of scientific projects are supported yearly by the Government of the Republic of Macedonia (mainly through the Ministry for Education and Science, but also through other ministries, like the Ministries for Economy, Agriculture, etc.), and occasionally there are R&D related projects in cooperation with and funded by the industry.

The establishment of the UKIM R&D Support Centre as an outcome of the EU-funded Tempus project "Creating R&D Capacities and Instruments for boosting Higher Education-Economy Cooperation" increases UKIM's overall R&D capacities. This is in line with the goals set in the UKIM strategy 2004-2011 "to establish a research unit for the coordination and the support to planning of research activities".

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The UKIM R&D SC's role is to:

1. Develop a research culture of open communication, continuous learning and improvement,
2. Develop a focus which recognises the needs of partners, postgraduate research students and clients,
3. Maintain and further develop essential R&D capabilities in key areas;
4. Develop R&D and research training management systems,
5. Develop an R&D reputation and relationships in accordance with partners' and students' expectations,
6. Attract new strategic research partners to UKIM,
7. Focus strategic and performance-based resources into key R&D areas, and
8. Increase the level of external support for R&D.

Shortcomings: The condition of research equipment and laboratories is very poor, in some areas the necessary equipment is inexistent, which makes the application of modern technology in research impossible.

The economic crisis (since 2009) has led to a dramatic decrease in the number of opportunities for direct application of the results of scientific research in the business sector. This situation has caused a reduction of research cooperation between the university and economic entities, which has negative impact on the motivation of academic staff with regards to the implementation of new research activities.

Additional problems are caused by a decrease of state funds allocated for research activities (less than 0.18% of GDP is allocated to R&D activities from state budget for 2010). This also causes a decline of R&D activities at both the faculties and the scientific institutes.

Aims:

- Adopt UKIM R&D strategy and development programme for scientific research, which should be in line with state R&D strategy and innovation policy and should determine the scope, the structure and the priority areas of public interest in research activities,
- Provide funds for ensuring conditions for research activities,
- Improve and modernise research facilities available to postgraduate and doctoral students,
- Encourage international research work, especially in the field of doctoral studies,
- Stimulate the publishing of activities in prestigious journals,
- Engage the University for the abolition of customs duties and value added taxes for the purchase of hardware and software, equipment and others resources and materials for research,
- Engage the University in governmental tax incentives for research activities that would enlarge the volume of R&D activities in the business sector,
- Increase cooperation of the University with research and development units in the economy (industry),
- Develop a system for intellectual property rights at university level,
- Increase the number of university staff who is devoted to R&D activities,
- Stimulate the creation of university spin-offs,
- Create new centres of excellence of Macedonian science in internationally competitive fields of research (priority areas should be determined),
- Define the research services provided at UKIM and increase the number of different services offered,
- Significantly increase the volume of testing, certification and laboratory services and in-service training,
- Increase the interdisciplinary nature of research by consolidating, where necessary and reasonable, research topics into larger sectoral themes,
- Support the establishment of joint facilities and centres within one sector as well as joint facilities and centres covering several sectors, and provide them with the necessary equipment,
- Develop a public relationship plan for UKIM's R&D activities to continuously inform the Macedonian wider public about the results of research and development activities carried out at UKIM, and to present technology development activities carried out at UKIM at international fairs.

2.3. UNIVERSITY OF PRISHTINA

2.3.1 Unit for Support of Scientific Research

“The Centre Manager of the R&D Unit at the University of Prishtina represents an excellent example of how one person can be the driving force for a whole unit; he constitutes an ideal interface between academia, university management and stakeholders.” (Almir Kovačević, WUS Austria)



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By decision of the Senate of the University of Prishtina (UP) on December 19th, 2008, the Unit for Support of Scientific Research at the University of Prishtina was established on June 1st, 2009, within the TEMPUS project “Creating R&D Capacities and Instruments for boosting Higher Education-Economy Cooperation” and the OSCE project “Establishment of a Research Project Support (RPSO) at the University of Prishtina”.

The R&D unit as part of the Academic Development Office of the UP works under the supervision of the Vice-Rector for teaching and scientific research, in close cooperation with other offices in the Rectorate of the UP (i.e. Office for International Relations, faculty management, etc). The main objective of the R&D unit is to assist researchers in securing funds, project application processes, project management, collaboration with industry, commercialisation of research, and finding partners for scientific research projects.

Currently the staff of the R&D unit consists of (October 2011):
Prof. Dr. Hysen Bytyqi, manager of R&D unit and
MSc. Besnik Fetahu, manager assistant of R&D unit.



The Rectorate building of UP - source: Unit for Support of Scientific Research



Students in the hall of the Faculty of Philosophy - source: Unit for Support of Scientific Research

The goals of the R&D unit are:

1. To improve the research culture at the University, values, research mission and vision and leadership among the priorities of the UP,
2. To organise and prepare all strategic university planning of key research and development policies,
3. To collect and report activities related to research at the University, to develop measures for the enhancement of progress and impact of research, development of a central research database for follow-up project proposals to inform various agencies, organisations and institutions,
4. To promote research at university level,
5. To help researchers in the preparation of proposals,
6. To organise workshops aimed at writing project proposals, which will lead to successful applications and the arising of new leading experts,
7. To support young academics pursuing research (start-up),
8. To promote and coordinate inter-and multidisciplinary research,
9. To communicate with government agencies in order to enable the University to fulfil its role in the economic and social development,
10. To negotiate major contracts with foundations and industry,
11. To commercialise research, including intellectual property rights, in order to facilitate the implementation of research supported by industry.

Executive Summary

One year after the approval of the National Research Programme 2010-2015, the University of Prishtina set out to develop its Research Strategy that would serve to ensure coordination of research activities in the largest and oldest higher education institution in Kosovo with the efforts to advance scientific/artistic and development activities at national level. “The Strategy on Scientific/Artistic Research and Development Activities 2011-2015” resulted from a lengthy process with broad participation of experts coming from various academic fields. The drafting of the Strategy was supported by the project for “Creating R&D Capacities and Instruments for boosting Higher Education-Economy Cooperation,” which is funded by the “Tempus” Programme of the European Commission.

Priorities identified and articulated in the National Scientific Research Programme of the Republic of Kosovo for Research and Scientific/Artistic Activities served as the starting point for drafting of the Research Strategy of the UP. The University of Prishtina considers the points set out therein as its own research priorities and is committed to offer special support to its academic units, research groups and individuals engaged in research and studies in the respective fields. The University is also aware of the pressing need to focus its scientific and artistic research efforts in areas that bear more significance and which contribute directly to the social and economic development of the country.

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The first step in the process of developing the strategic paper was a situation analysis, which focused on four fields:

- Human resources
- Infrastructure
- International cooperation
- Links with economy and society

These fields are compatible with those of the National Research Programme, which results from the fact that the University of Prishtina is part and parcel of the overall scientific/artistic research context in Kosovo. A SWOT analysis has been carried out for each of these fields to identify strengths and weaknesses of the UP from the perspective of its capacity to engage in scientific/artistic research activities. Expert teams have also analysed the external factors affecting the implementation of these activities in the future. The analysis served to identify various strategies to make use of strengths and to overcome weaknesses, as well as strategies to benefit from opportunities brought about by the external environment and to avoid threats posed by the same.

Expert teams formulated one development objective for each of the four analysed fields. The objectives serve to determine targets of the University of Prishtina for the development of scientific and research activities in the forthcoming four-year period. Further, concrete measures needed for the accomplishment of each objective have been identified, whereas expected outcomes in the shape of indicators of success were set with the purpose of monitoring of progress. Development objectives and related measures are briefly presented below:

Objective 1:

Development of human capacity for scientific/artistic research activities in the University of Prishtina.

1. Support to UP's academic units to develop doctoral programmes based on the Bologna system,
2. Establish scholarship schemes for short-term research visits abroad for academic staff,
3. Encourage inter-disciplinary approaches in scientific and artistic research activities,
4. Develop criteria for providing material incentives for staff involved in scientific research and artistic work,
5. Encourage inclusion of expertise from the diaspora in scientific/artistic research and development activities,
6. Draft and approve contractual obligations of the academic staff for their contribution to scientific/artistic research activities.

Objective 2:

Improve and enhance the infrastructure for scientific/artistic research work and for provision of services.

1. Design a database for the current capacity of infrastructure at the University of Prishtina,
2. Establish mechanisms and procedures for joint utilisation of laboratories and facilities within the University of Prishtina,
3. Sign agreements for utilisation of research infrastructure of other institutions at home and abroad,
4. Provide needed infrastructure to establish and/or make functional existing laboratories and institutes,
5. Provide access to relevant electronic libraries.

Objective 3:

Internationalisation of scientific/artistic research activities by promoting excellence in research.

1. Establish strategic partnerships with reputable international institutions interested to engage in cooperation with the University of Prishtina,
2. Organise training and offer technical assistance on project development,
3. Allocate funds to co-finance implementation of international projects,
4. Publish/distribute information on opportunities for international cooperation.

Objective 4:

Cooperation with the public and private sector for implementation of research projects serving for economic and social development.

1. Establish a database on cooperation projects with the public and private sector,
2. Develop mechanisms and instruments needed to provide professional programmes of various length to better meet market needs,
3. Encourage inclusion of social and economic entities in the drafting and implementation of research oriented academic programmes,
4. Engage academic staff and students in the public and private sector in implementation of joint scientific research activities.

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Strategy implementation and challenges standing before modern universities require building of management capacities in the area of scientific research activities.

For this purpose, the Unit for Support of Scientific Research will be strengthened by delegating to it new tasks and responsibilities. An Advisory Group for scientific-research work and innovation will also be set up, to monitor the implementation of the strategy and to offer its expertise to overcome problems.

The Strategy has an implementation plan for the period October 2011–September 2015, as well as a budget framework summarised in the following table: .

Field	Budget				
	2011/12	2012/13	2013/14	2014/15	Total
Human Resources	€ 140,000	€ 140,000	€ 140,000	€ 140,000	€ 560,000
Infrastructure	€ 10,000	€ 113,000	€ 250,000	€ 250,000	€ 623,000
International cooperation	€ 5,000	€ 185,000	€ 185,000	€ 185,000	€ 560,000
Links with economy and society	€ 0	€ 5,000	€ 0	€ 0	€ 5,000
Management	€ 17,150	€ 21,200	€ 21,200	€ 21,200	€ 80,750
	€ 172,150	€ 464,200	€ 596,200	€ 596,200	€ 1,828,750

Table

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Funds needed for the implementation of this Strategy represent between 1.0%–3.5% of the annual budget of the University of Prishtina (around 17 million Euros), not accounting for the own income generated from academic and economic activities. A large part of these expenses have already been made, but not in a planned and systematic manner

Texts for UP provided by: Hysen Bytyqi, Besnik Fetahu

2.4. UNIVERSITY OF SARAJEVO

2.4.1. R&D Centre of University of Sarajevo



“The young and committed staff of the R&D Centre of the University of Sarajevo has managed for the centre to become recognised as contact point for project development and management and has already launched a number of new initiatives.” (Almir Kovačević, WUS Austria)

In accordance with the business plan of the R&D Centre (RDC) of the University of Sarajevo (UNSA), the objectives of the RDC over the next three years are as follows:

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- To support the University of Sarajevo in the modernisation and quality enhancement process of higher education by development of a clear R&D strategy based on analytical assessment.
- To contribute to the knowledge triangle of education, research and innovation at the University of Sarajevo by providing defined services and instruments to both industry and the university.
- To support the University of Sarajevo in its integration into the European Higher Education Area and the European Research Area by implementation of models for strengthening international cooperation networks.



Team of R&D Centre UNSA, September 2011 - source: University of Leoben

Given the fact that the RDC UNSA has already accomplished financial funding for the next three years, it is evident that this constitutes an ideal pre-condition for strengthening the already existing capacities of the Centre by recruiting new staff members, purchasing new equipment, enhancing its network and raising awareness about the importance of the Centre's work and its role for the University and for the society in Bosnia and Herzegovina in general.

Against this background, we have recruited three new employees: an IT administrator, a PR officer and a volunteer who will be in charge of providing administrative support. To this end we concentrate on strengthening the human capacities of the Centre in order to prepare for the implementation and coordination of new projects.

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Currently the RDC UNSA team exists of the following members:

*Prof. Samir Arnautovic - Vice- Rector for International Cooperation; Centre manager
Alija Mustafić – administrator, responsible for financial management, project development and implementation*

Nina Đikić – coordinator of the Centre, responsible for project development and implementation

Armin Methadžević – IT administrator; providing support to project implementation and development

Mersa Sejfić – PR officer

Anisa Čorbo – volunteer, in charge of giving support in project administration

The current activities of the Centre include preparations for upcoming kick-off meetings and project activities for the TEMPUS projects „Quality in Research“ and „Equal opportunities for students with special needs in higher education“ where the UNSA takes the leading role, as well as the implementation of projects in which the UNSA is involved as a partner (also TEMPUS; „INTERFACE- Developing and setting up measures for initiating, enhancing and sustaining Higher-Education-Society-Cooperation“ and „Centre for Curriculum Modernisation and Lifelong Learning“). Besides that, the centre tries to become more visible to the public in order to raise awareness about already achieved results and to draw the attention of potential partners and industry stakeholders.

Find out more about the RDC at www.rdc.unsa.ba.

2.4.2. R&D Strategy Paper University of Sarajevo/R&D Centre

Background

The objectives of the R&D Strategy of the UNSA relates to a period of 10 years. After this period, it will be necessary to evaluate its implementation and then examine the extent to which the circumstance have undergone changes and adopt new guidelines on basis of the evaluation.

Once the draft of the strategy is fully elaborated, it will be presented to the University's management. Since the University of Sarajevo has not completed the process of integration, it is difficult to foresee the precise period for adoption and implementation of the strategy.

Executive Summary

In the following we present the main points of the strategy:

- As a priority, the University of Sarajevo, must in the first year enact the evaluation criteria for scientific-research activities and strictly apply these criteria in the process of hiring research and teaching personnel. In a period of three years, the procedures of scientific-research activities evaluation must be updated in order to keep up with contemporary European criteria which are valid at the most important universities and research centres. The University of Sarajevo must acknowledge scientific competence which is based on the narrow field of science and which is expanding to interdisciplinary areas, as a main area of importance at all major universities in the world.
- It is necessary to collect precise data on the needs of expanding and strengthening human resources at the UNSA to keep up with the standards of European universities. This means the establishment of educational profiles and levels of education for the University's modernisation process.
- Also, the University of Sarajevo is responsible for conducting an internal evaluation of the permanent scientific-research activities' monitoring at least once a year.
- It is essential to establish parameters which will determine the development of the scientific-research activities at the University of Sarajevo and which will define the major areas of support for the University's development as a whole. The analysis which the UNSA runs, shows that there is a great need for standardisation of valorisation of scientific-research activities.
- A plan for strategic financial support to scientific-research development needs to be drafted. Within the next two years, the University of Sarajevo will, through its governing bodies and the Senate, have to make a decision about a new method of financing research activities; this method will have to appreciate and respect the existing state of being and current development needs.
- Identification of science groups that possess adequate material and technical prerequisites and capacities in terms of scientific-research activities, and which therefore can be identified as the bearers of progress within the context of the University of Sarajevo's integration process. This will also enhance connecting the University

with the economy and strengthening cooperation at international level through the implementation of development and scientific-research projects. These science groups should be the backbone for other science groups in development, primarily referring to the methodological approach in cooperation with the economy and in applying for international projects.

- The University of Sarajevo should favour internalisation as a strategic approach. These standards and norms ought to be applied to the valuation of each researcher's activities, as well as to the institutions within which researchers operate. This way, highly qualified research groups will be identified, including individuals who can be holders of the development of scientific-research activities at the University.
- It is necessary that within the next five years, the University invests significantly in human and material resources for the preparation and implementation of sustainable projects. Against this background, it is essential that University also provides a greater degree of political and material autonomy and independence to researchers and provides a stimulating environment in the area of scientific-research activities and developmental work. It is necessary to work on developing and securing own resources, without losing the high degree of cooperation with University institutions. This may be achieved through strengthening capacities for the implementation of Tempus and FP7 projects.
- In terms of the ten-year strategy, it will be necessary to set up an IT system which will provide the possibility for better monitoring and analysing of the current situation. The initial phase will be used for building a system of monitoring results and investing in those areas where we already have referential research results.
- It is vital that the University of Sarajevo annually applies for at least two projects in which it will be the contractor in order to create pre-requisites for faster development, greater competitiveness and for achieving more significant academic reputation. In addition, the University of Sarajevo needs to create pre-requisites for competing for IPA funds and for tighter cooperation with companies and industry sectors.
- The existing trend needs to be transformed in a qualitative manner and this transformation needs to be based on the development of scientific-research activities.

- It is necessary to open a debate at the University about collaboration of the University with the economy and to establish successful communication lines between all University members and business organisations. New study groups which will eventually be started, and initiated by the needs of the economy must be based on research activities and ought to offer the results of that work as the programme's orientation. It is essential to raise awareness about potential interactions between academia and economy among business management bodies and present a clear picture of social development in this direction.
- The University should encourage research teams to focus on cooperation and support of business organisations.
- In the period to follow the University of Sarajevo as a whole and its individual member institutions, should make an effort to build up supporting structures for research activities, by providing training for administrative support teams which are representing professional services within the University.
- Capacities, which the University currently has to its disposal, should be fully used in the following period, both in the area of education and in the area of creating new human resources. The basis of this development should be the R&D Centre of the University of Sarajevo, as a backbone for the establishment of similar centres at the Faculties of the University. Those centres would deal with R&D in more specific scientific areas.
- A Scientific-Research Council needs to be established at university level. The function of this Council should also provide consultative work to the Ministry of Science and the **Ministry of Economy**.
- The University of Sarajevo and the competent Ministries have to find ways to fund scientific offspring, and to create opportunities for young people to carry out research. The priority task is the promotion of knowledge as a fundamental category of social development.

3. SUCCESS STORIES

3.1. UNIVERSITY OF MONTENEGRO

Young Inventors Fair

Most of the duties of the R&D Service Centre at University of Montenegro (www.rd.ac.me) imply contacts with Vice-Rectors, Researchers, and professors at UoM as well as with external partners (companies, agencies, universities).

In 2011 the R&D SC decided to actively involve students in order to explore and support innovation capacities at UoM. In cooperation with the Foundation of Young Inventors (www.mladi-pronalazaci.me), the R&D SC is organising a competition for inventions called Young Inventors Fair. The initiative was launched in cooperation with the Foundation of Young inventors, who had successfully organised a competition for high school students last year. This year, with the R&D SC, they found a reliable partner to organise a separate competition for UoM students. Therefore, there are two open calls: one for high school students (organised by Young inventors` foundation alone) and the second for UoM students (organised by R&D SC and Young inventors` foundation together). The director of both competitions is an American expert on innovation culture, Dr. John Tabor II, who has great experience in organising similar events around the world, including the USA, Russia, Brazil and some European countries.

In larger countries, the competition is usually divided into thematic groups (i.e. separate competitions for inventions in IT, BioTech, Machine Engineering, Material Science, etc.). Since Montenegro is very small and just starting with these kinds of competitions, it was decided to organise one competition for all kinds of inventions.

Phases of competition

The work is divided into four phases:

Phase I (September 2011): Preparation

Deans and professors at UoM were informed. Deans promised they will provide expert support and access to laboratories to interested students. We also informed the Ministry of Science. Promotional materials are being prepared. The first phase will be completed at the Researchers' night on September 23rd, where we will launch the call for student inventors.

Phase II (September – October 2011.): Pre-selection

All interested students are invited to send an abstract of their innovative ideas (one page A4). After this, the jury will do a pre-selection and select the most prospective ideas.



Poster Young Inventors Fair - source: R&D SC UoM

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Phase III (October – December 2011.): Implementation

Those ideas which passed the pre-selection will be implemented. An expert committee will appoint advisors for all students. During the implementation phase, we will also organise a workshop for competing students where experts will explain what can be considered as a good innovative idea, and which idea has less chance to be successful, then how to turn a good idea into a product and how to commercialise it. With the support of the experts and advisors, the students are expected to pass the whole way: from prospective idea to realised invention.

Phase IV (December 2011– January 2012): Fair

Finally, the Jury will evaluate all inventions and credit them based on strict and precise criteria. There will be three winning inventions, which will also be awarded financially. At the end of January, the Young Inventors Fair will be organised as a significant promotional event and one of the first of such kind in Montenegro. At the Fair, winners and other participants will present their inventions to, among others, representatives of companies, agencies and the Ministry. We will also try to bring special guests to the Fair.

Role of the R&D SC

The R&D SC will actively take part in all phases of the competition. In particular, it will motivate students and researchers, provide correspondence, organise workshops and prepare promotional materials. The R&D SC also counts on financial support from the Ministry of Science of Montenegro (funds for promotion of science).

Depending on the experience from 2011 (the first fair), the R&D SC plans to organise this event annually. If successful, the Fair can be an important tool for promotion of science in society, promotion of the UoM and promotion of an innovation culture inside UoM. Finally, it helps establishing the R&D SC as a reliable partner and link between the University and society in similar activities.

EVAL-INNO

Thanks to the experience with the evaluation of the UoM's research capacities through the EVOLUNIMONT and the Tempus "R&D Capacities" project, we have been invited to participate in the project Fostering Evaluation Competencies in Research, Technology and Innovation in the SEE Region (EVAL-INNO), which was submitted within the frame of the SEE programme.

Innovation capacities and results in Montenegro, as well as in other SEE countries, are still limited. Thus, public interventions are deemed necessary and are increasingly implemented to stimulate meaningful innovation activities. Evaluations are a proper tool for ensuring transparency and accountability and for contributing to an efficient new public management. However, also the successful application of evaluations has to be learned! Ex-ante, interim, terminal and ex-post evaluations have to be tendered properly, and they have to be implemented in a way to secure strategic intelligence building and evidence-based decision making. This project addresses both the unsatisfactory deployment of evaluation in RTDI policy-making and weak professional evaluation basis (incl. ethics) in SEE.

As a part of the European Research Area and European Higher Education Area, it is necessary for the University to be open to the `outside world`. Also, as an active member of the EURAXESS network – pan-European network dedicated to mobile researchers - the University of Montenegro needs to create further conditions for becoming more and more attractive to researchers from abroad. Enabling continuous comprehensive evaluation of all of its capacities is one of the crucial pre-conditions for reaching this goal. Effective evaluation is a `must have` practice that all universities have to establish and adopt, if they intend to continue with successful international cooperation. The sooner we develop capacities for both, internal and external evaluation, the sooner we will progress in that respect.

Main project activities and current implementation status:

As mentioned, the project focuses on the development of evaluation capacities in the participating countries. To reach this goal, the activities were designed to set the standards for regular evaluation, build and enhance the capacities of the experts (both individual and governmental), so they can perform the evaluation, provide an on-line platform that will not only provide an excellent directory of the existing documents and training material developed under the project, but which will also contain a pool of international experts in the field, enabling institutions and governments to conduct evaluation in highly professional and transparent ways. Within the project also a benchmarking exercise (of research institutions) will be conducted.

Role of the R&D SC:

The R&D SC is a partner in the project on behalf of the University of Montenegro. The project has been prepared and work designed in a participative manner, requesting participation of all partners in most of the activities, with a significant role given to the R&D SC. In addition to other activities, the Centre will be in charge of the organisation and coordination of the training process for the two target groups – evaluators and programme owners that will take part starting in the autumn of 2012. Through this process, evaluation standards for the participating countries will be developed, as well as comprehensive training material which will be used throughout and beyond the project implementation. Apart from the participating countries, other countries from the region of the Western Balkans will be invited to send their participants to the events.

3.2. Ss. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE

4th International Conference for Entrepreneurship, Innovation and Regional Development, ICEIRD 2011, 5 -7 May 2011, Ohrid, Macedonia

The International Conference for Entrepreneurship, Innovation and Regional Development (ICEIRD) Consortium was formally established in 2008 during the first conference in Skopje and Ohrid, Macedonia. It is a multi disciplinary and cross sectoral network crossing several streams of theory and practice like entrepreneurship, innovation, regional economic development and information systems. The ICEIRD Consortium was set up with members from institutions jointly researching and collaborating in the strategic development and organisation of an annual ICEIRD conference and managing joint projects focused on the theory, policy and practice of entrepreneurship, innovations and regional development. One of the higher concerns of the so-called European Innovation Paradox is the divide between academic research and policy making, between thinkers and practitioners. The ICEIRD Conference aims to become an authoritative reference in bridging this gap by developing analysis in the field of innovation and regional policy, based on high level academic research, but without neglecting the lessons learnt by policy makers and professionals in the field. It thus establishes experiential feedback learning loops and cross fertilisation among two communities which have lived too far away from each other for far too long, and in the European Union in particular.

The first ICEIRD conference was organised in Skopje and Ohrid, Macedonia in 2008, the 2nd ICEIRD was organised in Thessaloniki, Greece, while last year, the 3rd ICEIRD 2010 was held in Novi Sad, Serbia, 2010.

The International Conference for Entrepreneurship, Innovation and Regional Development (ICEIRD) 2011, held in Ohrid, Macedonia, was an international event aimed to gather decision makers (government, ministries and state agencies), scientists (universities, research and development centres, technology transfer centres, start up centres) and practitioners (SMEs, business incubators and business support organisations) in one place in order to discuss topics that are of crucial importance for national competitiveness and to increase the significance of research and development in the countries. In 2011 the topic of the conference was “From Entrepreneurial Learning to Innovations and Regional Development”, and the conference was organised under the auspice of the President of the Republic of Macedonia H.E. Dr. Gorge Ivanovo.



The President D-r Ivanov's welcome speech at the Conference opening – source: R&D SC staff, Ohrid 5.05.2011

At the main event, more than 400 attendees were welcomed (302 registered participants plus special guests, such as the representatives from the Ministry of Economy, university representatives and researchers, government representatives, representatives from the municipality of Ohrid, media representatives, guests from the business sector, and business supporters etc.).

The main organiser was the National Centre for Development of Innovation and Entrepreneurial Learning – NCDIEL who manage to organise this international conference with intensive support from the UKIM R&D Centre. The contribution of the UKIM R&D Centre to this event was crucial because all the direct target groups of this conference were researchers and industries from all over the world. The Centre has succeeded in his mission to bring together researchers from different areas and to stress out their importance in bridging the gap between the academic world and the industry. At the conference additional session was organised by the UKIM R&D Centre in order to show the importance of the R&D Centre in the areas of innovation and regional development. The additional special session was: “European Experience in Development of R&D Support Centres”, organised within the frame of the TEMPUS “R&D Capacities” project.

The main areas of discussion (session topics) were:

- Development of further cooperation methodology and models for networks among HE institutions, industry and society
- Usage of information systems for fostering the creation of research networks and the follow up of research activities (R&D database)
- The development of the R&D SC at the 4 Universities in the Western Balkan Countries

With regard to R&D capacities at university and at national level, other sessions covered the following topics:

- Setting R&D priority areas: choosing priorities based on real market needs and researchers potential,
- Coordination of R&D activities: Avoid overlapping of research activities, networking of researchers who cover similar or related research areas,
- Development of policies for the development of the R&D infrastructure; avoiding overlapping in research equipment and materials; this should result in better developed research facilities,
- Increase the administrative capacity of research institutions in initiating and managing of projects, and in application of the results of research.

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European experiences were essential for this event and they were very helpful for the future development and continuous improvement of the UKIM R&D Centre.

The 5th conference ICEIRD 2012 is already set for the period 28- 29 May, 2012 and will be organised by the Technical University of Sofia, Bulgaria (http://www.iceird.org/2011/files/ICEIRD2012_1st_cfp.pdf).

The title of the Conference is: "Regional Development for Unleashing Growth through Southeast Europe". ICEIRD 2013 is scheduled to be organised in Tuzla, Bosnia and Herzegovina.

3.3. UNIVERSITY OF PRISHTINA

Gaining access to ISI Web of Knowledge

In 2011, with the financial support of the Ministry of Education, Science and Technology (MEST), the University of Prishtina will have access to the scientific database of Thomson Reuters - ISI Web of Knowledge - with headquarters in London.

In order to gain access to this database, the training branch of Thomson Reuters from London, together with the staff from the R&D SC of the UP, have performed two days of training for the academic staff of the University of Prishtina (23-24.03.2011).

The training was conducted in the Senate chamber, including deans, senators, heads of departments, professors. Then, the training continued at the Technical Faculty and the Faculty of Philosophy, including only professors and assistants from all 17 faculties. During four training sessions a high participation of academic staff was recorded, (108 participants).

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The academic staff of the UP was introduced to the database and to the opportunity to have access to multidisciplinary scientific quality literature, such as access to over 20 000 scientific journals, over 100 000 works of periodicals with scientific conferences, over 9000 web pages etc.

During the training days the following topics were addressed:

- Analysis and publication of scientific work;
- Data planning through scientific research;
- Seeking funds to support scientific research;
- Identifying potential collaborators from the international scientific community;
- Establishing contacts and potential collaborations in the future;
- Identifying scientific journals with the impact factor to send manuscripts to;
- Providing information on research activities of researchers and research institutions;
- Identification of trends for graphical citations and for determining the format of the bibliography.

Below is a graphic on participation in the training of academic staff divided by academic units of the UP:

Securing funds for research in Kosovo

Following the approval of a five-year Research Programme by the Parliament in July 2010, the Ministry of Education, Science and Technology (MEST) has moved forward with its implementation. At the end of September 2010, the first round of calls for funding research activities, supporting the implementation of the programme measures, was published in the local media.

R&D Unit has facilitated this process by giving technical support to the UP academic staff in preparation of project proposals according to the standards requested by the MEST. The R&D Unit has further provided professional consultancy to the 20 applicants (UP academic staff), on how to write a project proposal, which documents are necessary for application, finding possible partners etc.

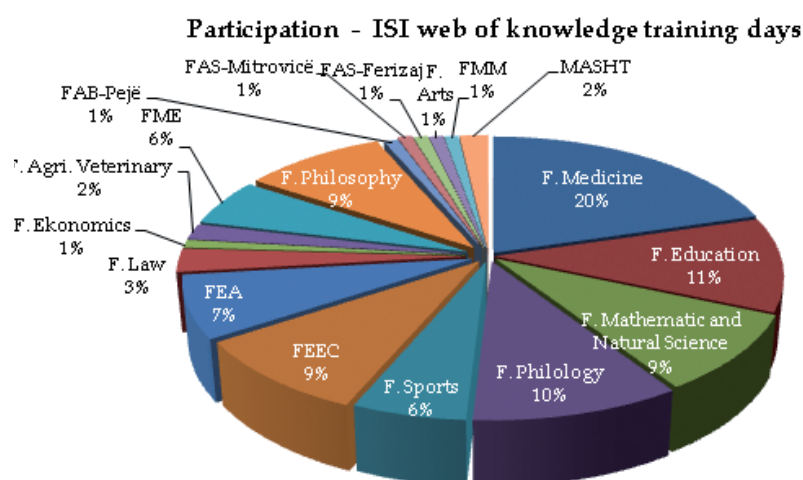
The total available funding was € 1 million which was available through five programmes: Brain Gain Grant (BGG), Short-Term Mobility Grants, Publication Funds, Special Research Grants and Research Awards.

Applications for the following priority fields of research were eligible for funding:

1. Natural Resources, Energy and Environment
2. Agricultural Production and Food Safety
3. Medical Research
4. Social and Economic Studies
5. Linguistic, Cultural and Historic Studies
6. Cross-Horizontal Research in Information and Communication Technologies

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The objective of the Brain Gain Grant programme was to attract the best Kosovar researchers living abroad and to enable them to pursue professional scientific careers in Kosovo. Working at a public university or a public research institution, they must be actively involved in research, teaching and mentoring. They must be able to lead the



Source: Unit for Support of Scientific Research

selected project autonomously. Outstanding researchers may apply if they have finished at least a doctorate and if they want to return to Kosovo. Candidates must have stayed and worked abroad in a dedicated scientific research environment for at least three years after finishing their PhD. The total amount foreseen for the Brain Gain Grant in 2010 was limited to € 250,000. All proposed projects were to last for a minimum period of 12 months and a maximum of 24 months.

This Short Term Mobility Grants programme aims to enable scientists to work at universities or reputed research institutions abroad, with the purpose of gaining experience in research. Furthermore, Kosovar scientists shall be enabled to participate in scientific conferences to present their own research results abroad. The maximum amount will be € 1,500. In case of a stay of two months, the grant can be extended to € 3,000 for the entire period.

The Publication Funds programme provides funds for the production costs to support the publication of scientific, non-profit oriented research findings and the translation of relevant international scientific publications into Albanian or Serbian language. Only publications of excellent scientific quality, which anticipate a significant enhancement of scientific knowledge and a further advancement of research in the framework of the respective specialist area in an international context shall be funded or translated. The maximum support for the production of a publication amounts to € 6,000. In exceptional cases, this amount can be raised up to € 10,000. The maximum level of support for the translation of a scientific publication amounts to € 10,000, and only in duly justified cases it can be extended to a maximum subsidy of € 12,000.

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The objective of the Special Research Grant is the establishment of a research programme based on international standards through autonomous research concentration at a single research institution/university location. The projects funded by the Special Research Grant must be unique and with a long-lasting perspective. They should have an added value compared to small sized research projects through the establishment of programmatic research endeavours. The grant is aimed at researchers from Kosovo working together in research projects. The awardees should accomplish the grant through regular work at a public university or a public research institution, where they have to be actively involved in research, teaching and mentoring. The total funding available for 2010 was € 625,000. The grant for a single project cannot be higher than € 125,000.

The Research Programme established a fund for yearly awards for extraordinary achievements with the aim to promote scientific excellence, to encourage science careers and to recognise the efforts and commitment of those researchers, who are advancing in their area of expertise. The award “Kosovar Researchers of the Year” will be given annually to the five most outstanding researchers in Kosovo. Each of them will receive a prize money of up to € 6,000 to support the continuation of their research career and to enable them to build up or consolidate and lead research groups. The award “Best newcomer researchers of the Year” will be given to the best five newcomer researchers with a prize money of up to € 2,000.

3.4. UNIVERSITY OF SARAJEVO

The R&D Centre of the University of Sarajevo has recorded a number of success stories during the implementation of the project. Most impressively the Centre secured funding for four new TEMPUS projects on behalf of the University, in two of which UNSA is contractor. This means, that the staff of the R&D Centre UNSA have ensured the Centre's survival and work for the next three years.

The ongoing activities of the Centre also include preparation and organisation of several dissemination events within the R&D Capacities project as well as the preparation for the fifth call for proposals within the Tempus programme. In this regard we would like to highlight one of the most significant dissemination events for the R&D Centre of the University of Sarajevo that took place on 07.10.2011 at the premises of the R&D Centre. The press conference was organised on the occasion of launching two new Tempus projects - „Equal opportunities for students with special needs in higher education” and „Quality in Research”. All participants of the press conference, including the Rector of the University of Sarajevo Prof. Dr. Faruk Čaklovića and the Minister of Science and Education Dr. Emir Suljagić have emphasised that the R&D Centre of the University of Sarajevo has become a leader in improving the research standards of the University and their modernisation and harmonisation according to the standards of the EU. The statements of the press conference will be published in all major and significant media in Bosnia and Herzegovina.

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Regarding the significance of the R&D Centre it is important to mention that the staff of the Centre has created conditions for the sustainability of the Centre and new employment possibilities which have significant impact on the Centres' capacities.

For the upcoming period we hope that we will have more success stories to share and that our work can serve as an example of good practice in the whole region.



Press conference – source: R&D Centre UNSA

Project title: Creating R&D Capacities and Instruments for boosting Higher Education-Economy Cooperation/short: R&D Capacities

Project number: 145180-TEMPUS-2008-AT-SMHES

Contractor: University of Leoben, AT

Coordinator: World University Service (WUS) Austria, AT

Project duration: 15.01.2009 - 14.01.2012

Project website: www.rd-capacities.org

Database: www.rd-database.org

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Project Consortium:

University of Leoben (applicant)
WUS Austria (project co-ordinator)
Austin, Pock and Partners
La Sapienza University of Rome
University of Oxford
Ss. Cyril and Methodius University of Skopje
University of Montenegro
University of Prishtina
University of Sarajevo
K-Cirt

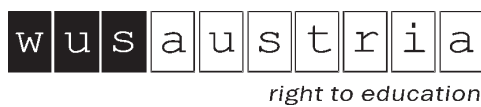
Logos of all partners



SAPIENZA
UNIVERSITÀ DI ROMA



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OUTLOOK

Currently one of the biggest challenges remains the linking of universities with the (private) business sector. In the Western Balkan countries cooperation between the two hardly exists, and where it does, the relationship is usually built on a very fragile legal and political framework; additionally, the worldwide financial crisis (since 2009) created unfavourable financial conditions for all participating countries. Within the framework of the project university-industry cooperation remains a top priority to the very last minute.

Besides this, the four R&D SCs have successfully managed to find their own place within their university's structure and have created their own agenda to meet the needs of academia and administrative staff at their universities. This was and is by no means an easy task in an ever changing academic and institutional environment, such as in the WB region. It is inspiring to see how the staff of the four R&D SCs - despite all difficulties - remain faithful to their mission: to serve their universities and support the research communities in their countries in attaining excellence in research.

“During the process of external evaluation I had the chance to reflect on the progress of activities together with the project partners. The enthusiasm of the partners to take the existing challenges as opportunities and their willingness to collaborate, communicate and exchange know how was and is impressive and is one of the reasons why the project made good progress.” Johann Laister, MERIG, external evaluator”