

## Steering Committee meeting

20<sup>th</sup> April 2010. Banja Luka

## WBC-VMnet Project

# WBC Regional model of University- enterprise cooperation - draft

*Prof. dr Vesna Mandić*

*Prof. dr Goran Stojanović, individual expert*

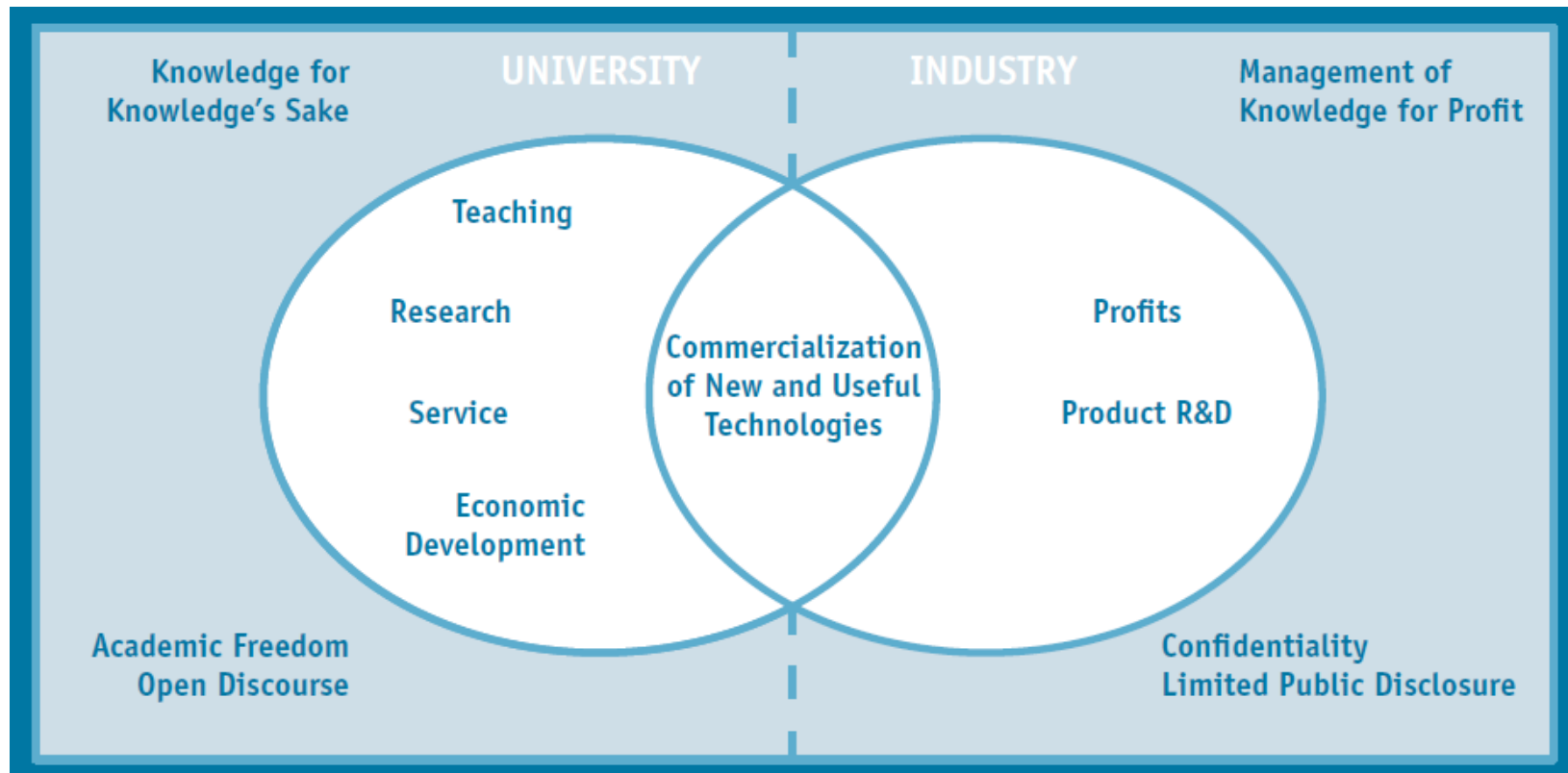
*dr Goran Stojanović*

This project has been funded with support from the European Commission

## Outline

- ❖ **Challenges**
- ❖ **Benefits for key actors in the knowledge triangle**
- ❖ **New WBC model of university-enterprise cooperation**
- ❖ **Recommendations**
- ❖ **Future steps**

## Challenges



Bridging and linking different cultures of academic and industrial sectors

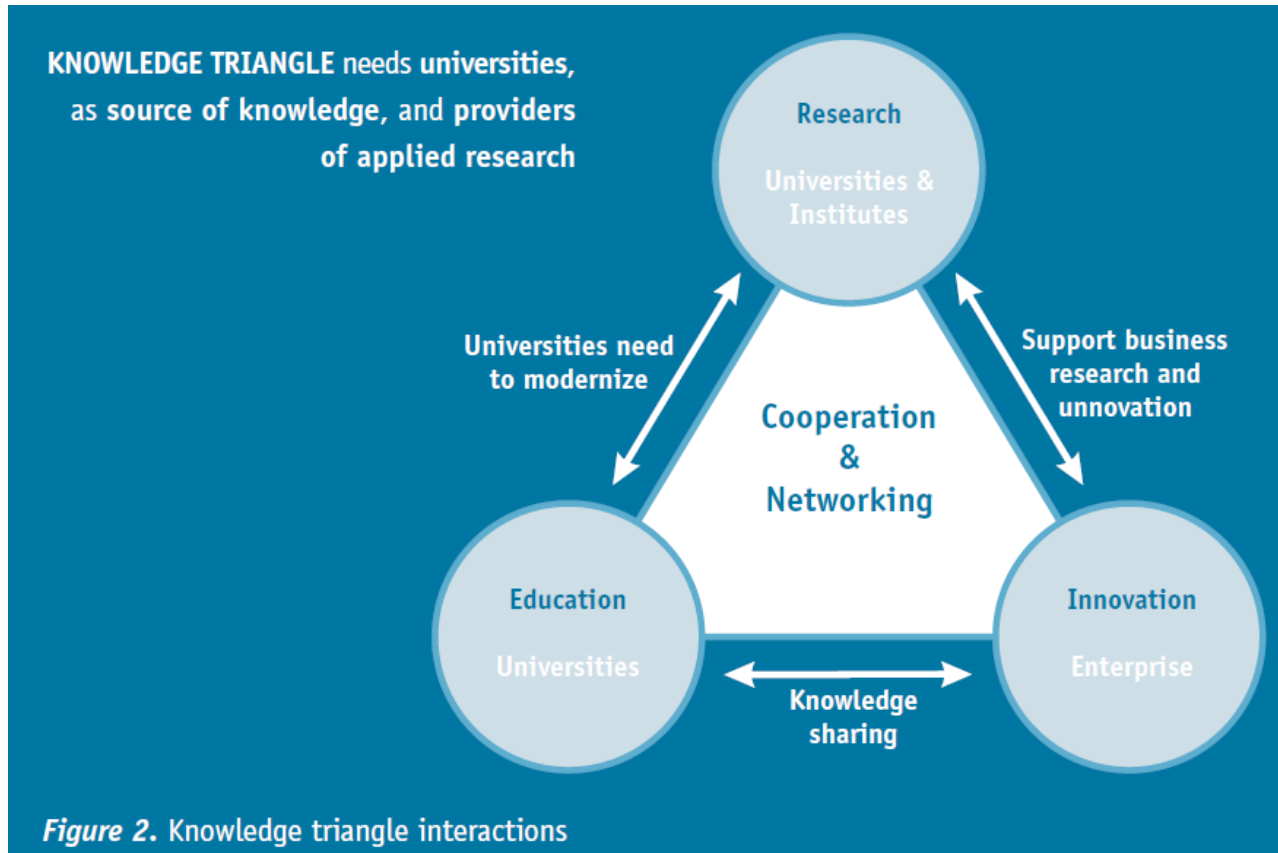
## Benefits for key actors in the knowledge triangle

The transfer of knowledge and technology from universities to enterprises occurs through a number of pathways, but the most prominent pathways are:

- ❖ the training of students (theses, class projects, practice)
- ❖ the publication of research results in the scientific or technical publications
- ❖ common participation in conferences, seminars, fairs, ...
- ❖ industrial consulting by university staff
- ❖ research in the university laboratory that is sponsored by a company
- ❖ consortia that bring together university scientists and industry scientists to conduct collaborative research
- ❖ the licensing of inventions created at the university to companies for further development and commercialization
- ❖ sale or license of patent
- ❖ joint venture for the commercialization of joint research
- ❖ creation of spin-off firms

*dr Goran Stojanović*

This project has been funded with support from the European Commission



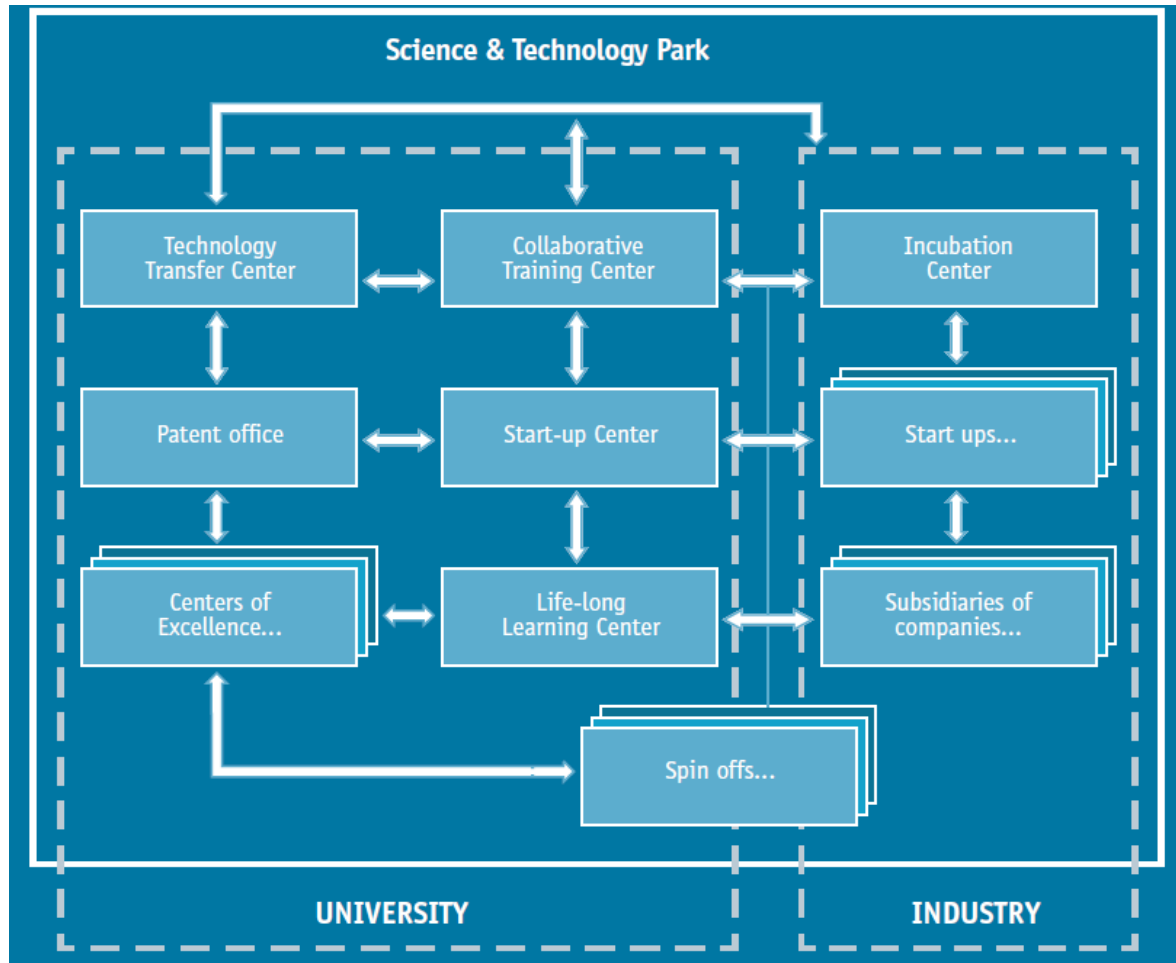
In another direction: Industry participation in academic planning and course design, donation of equipment, student scholarships, teaching grants, secondment of staff by industry to university as part-time professors, access to industry research facilities, etc.

## Benefits for key actors in the knowledge triangle

The **new WBC model of university-enterprise cooperation** should be combination of the following activities:

1. Establishment **Science and Technology parks** in regional university centers;
2. Organization of **WBC regional industrial clusters** depending on the field of research and business;
3. Forming **University-enterprises consortia** for joint participation in FP7, EUREKA, TEMPUS and other EU funded projects;
4. Establishment of **regional Collaborative-training and/or long-life learning centres**;
5. Setting up of **Open Innovation Networks with SME**;
6. **Practical placements** for students in industry;
7. **Industrial fellowship programme** for graduates and/or employees from enterprises

## Proposed scheme of Science & Technology Park structure



**The activity of STPs** includes offering an entire set of services to tenant companies, in order to help them survive on the research and development market.

**The motives** for founding STPs in WBCs are industrialization, regional development and the creation of synergy.

**The goal** of these Parks is to stimulate economic growth in the region by:

- creating an atmosphere suitable to the development of innovative activity,
- support of entrepreneurship in the scientific-technological sphere,
- forming of an infrastructure which stimulates the creation and development of small innovative companies,
- technology transfer,
- commercialization of the results of scientific and technological research and
- the employment of the best students who finish their courses of studies.





## INFRASTRUCTURE PROJECTS (continued and end):

### **4. Development of information and communication technology infrastructure (50 to 80 million euros)**

#### 4.1. Campus for faculties of technical sciences in Belgrade

Option 1: Construction of new building in the courtyard between existing buildings of technical faculties

Option 2: Construction of new campus in Block 72 in New Belgrade

#### 4.2. Infrastructure for supercomputing initiative “Blue Danube”

### **5. Creation of a knowledge based economy (~30 million euros)**

5.1. Science and technology parks in Belgrade, Nis, Novi Sad and Kragujevac

### **6. Basic infrastructure projects (~80 million euros)**

6.1 Apartment buildings for researchers in Belgrade, Nis, Novi Sad and Kragujevac

6.2. Infrastructure for the Ministry of Science and Technological Development

Housing for  
researchers in  
New Belgrade



## Technology Transfer Center

The role of the Technology Transfer Center will be:

- to establish a database of universities research results,
- to serve close research-industry contacts,
- to manage interdisciplinary forums and networks,
- to deal with patents and intellectual property rights and
- to promote the commercialization of research results.

This Center will also be aimed at attracting top-class experienced researchers who left the countries from Western Balkan region and to contribute brain-gain phenomenon, which is one of the priority in FP7 REGPOT projects of European Union.

## Incubation Center

The purpose of an incubation center is to provide all the resources that the entrepreneurs need to build successful businesses.

Incubation centers or incubators should develop its services in the following major areas:

- networking opportunities that will encourage entrepreneurs to interact with other companies inside and outside the incubator;
- on-site staff and consultant management assistance in budgeting and cost control, personnel management, purchasing and marketing;
- bringing technologies developed at WBC universities closer to commercialization;
- knowledge in applications to regional, state and European development funds;
- experience in obtaining financing for equipment and operations and linkages to seed and start-up venture funds for the incubated companies.

## Academic spin-offs

Academic spin-offs are an important means of technology transfer from universities to enterprises and an important mechanism for economic activity.

For example, spin-offs are the main mechanism for the rapid growth of technopolises like Silicon Valey, Route 128, Austin, Cambridge and others.

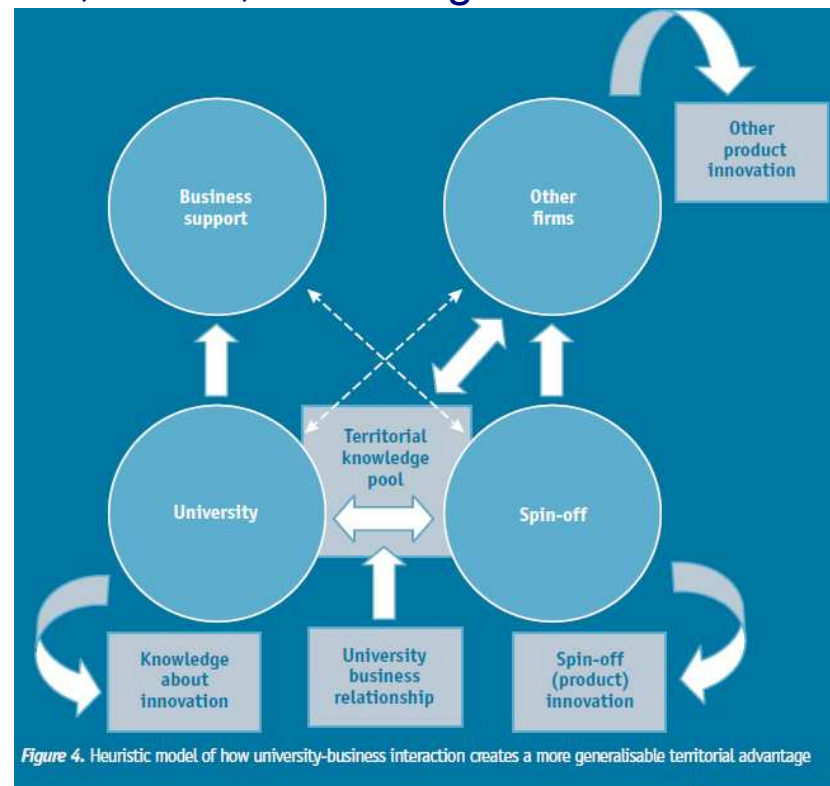


Figure 4. Heuristic model of how university-business interaction creates a more generalisable territorial advantage

## Organization of WBC regional (*research driven*) clusters

- ❖ These clusters involve members from universities, research institutes, enterprises, regional development agencies, etc.
- ❖ The members of the clusters will cooperate mainly in the field of joint promotion, joint R&D projects, participation in joint education events and in other forms of acquired knowledge...
- ❖ Cooperation in setting up the joint infrastructure of the cluster and in lobbying for common interests will be also important knowledge transfer activities.
- ❖ Some reasons for entering in the clusters can be: the financial subsidy from the state, the commercial pressure for a higher degree of linkage and cooperation between sectors, improved access to information resources and knowledge transfer through joint projects,...
- ❖ Key success factors include the creation of trust among the members, effective leadership of the cluster and the effective support of the top management.
- ❖ The cluster sector is often described as the „engine“ of a regional economy.

## Joint participation in FP7 and EUREKA projects

The primary objectives of enterprises to collaborate with universities, within these projects, include research synergies, keeping up with major technological developments and R&D cost sharing

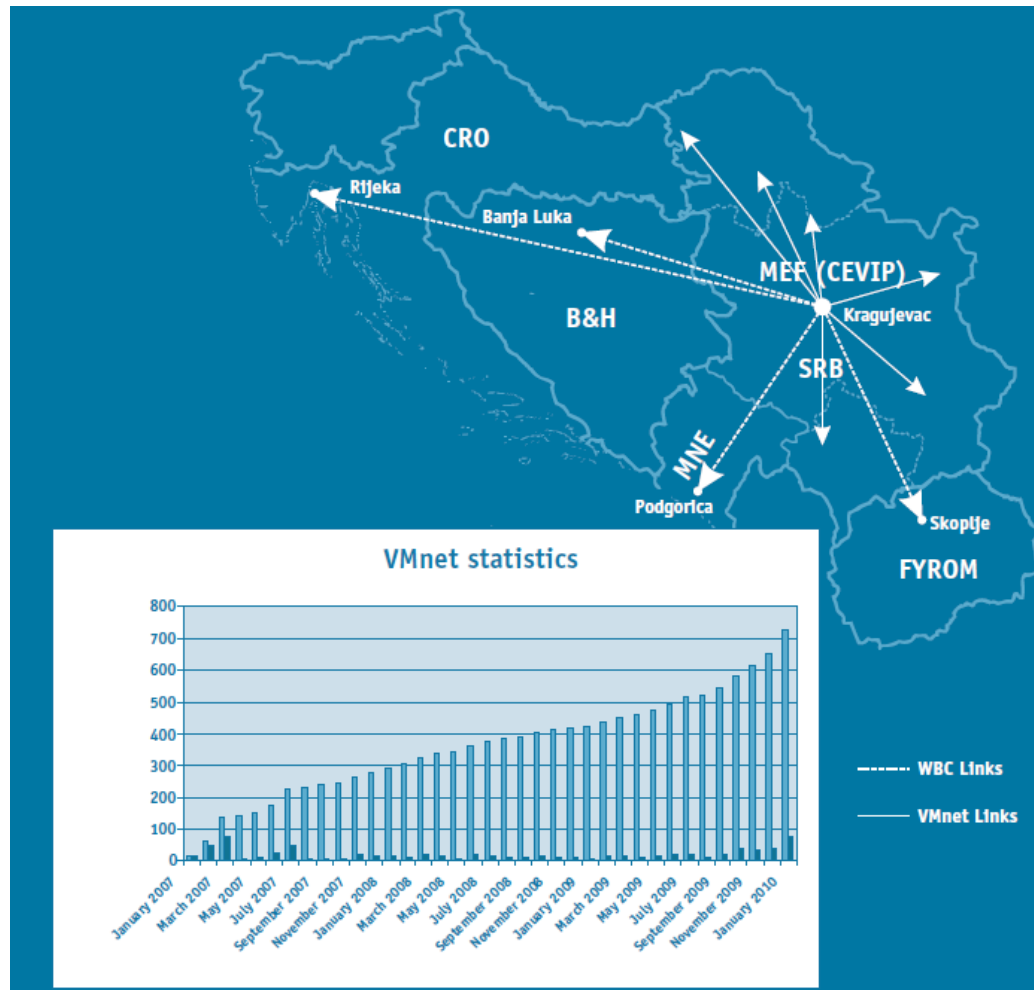
- ❖ FP7 programme finances 75% of the project cost for SME (research activities), 50% (demonstration activities)
- ❖ Specially designed program of European Union called EUREKA now unites over 40 member countries.
- ❖ They promote international, market-oriented research and innovation through introducing new products, processes and services to market.
- ❖ Results stemming from EUREKA projects are everywhere, such as: gsm mobile phone technology; navigation systems; smartcards to support mobile and electronic commerce; film special effects software for cinema; state-of-the-art medical devices and technologies to monitor and limit environmental pollution.



## Establishment of regional Collaborative-training and/or LLL centres

- ❖ The goal of these centers is establishment of sustainable cooperation among the key actors of the knowledge triangle through commercialization of R&D results, innovation and educational services (R&D projects, mobility of staff and students, training courses, workshops, etc.)
- ❖ For identifications of enterprises needs it is necessary to have regular TSNA analysis in the WBC region
- ❖ Development of courses and trainings designed for enterprises according to the information from the labor market should reduce the gap between knowledge from formal education and skills and expertise which market dictate
- ❖ TSNA and offer of courses and trainings can initiate their financing by the enterprises

## Setting up of Open Innovation Networks with SMEs





## Establishment of regional Collaborative-training and/or LLL centres

- ❖ The goal of these centers is establishment of sustainable cooperation among the key actors of the knowledge triangle through commercialization of R&D results, innovation and educational services (R&D projects, mobility of staff and students, training courses, workshops, etc.)
- ❖ For identifications of enterprises needs it is necessary to have regular TSNA analysis in the WBC region
- ❖ Development of courses and trainings designed for enterprises according to the information from the labor market should reduce the gap between knowledge from formal education and skills and expertise which market dictate
- ❖ TSNA and offer of courses and trainings can initiate their financing by the enterprises

## Practical Placement Programme

- ❖ The project WBC-VMnet envisages development of sustainable and qualitative practical placement programme
- ❖ **Benefits** for enterprises and the companies will be in the input of “fresh ideas and skills”, developing links with universities and the opportunity to assess prospective employees
- ❖ Students gain through obtaining a well rounded degree, having chance to apply their theoretical knowledge to real industry situations, and obtaining suitable experience recognized as part of the training requirement by the professional institutions
- ❖ Duration, conditions and obligations will be precisely defined by PPP , which will be available up to the end of June 2010.

## Industrial fellowship programme (IFP) for graduates and/or employees from enterprises

- ❖ **Industrial fellowship programme**, enables to engineers from industry to include in specific research and development activities and trainings within the universities centers.
- ❖ This programme envisages that engineers from industry spend 50% of working time in universities centers in duration of minimum 6 months or how long it is enough to acquire knowledge for using laboratory equipment, software, application of modern technologies in their business environment.
- ❖ That is the best way for long-term connection of industry and research institutions towards increasing innovativeness and competitiveness of regional enterprises.
- ❖ Industrial fellowship programme will be developed in more details up to June of 2010.

## Recommendations and future steps

### **Recommendation 1**

Governments of the WBCs should accelerate a transition of researchers from academic sphere to enterprises through a greater emphasis on the mobility aspects of the best young researchers.

### **Recommendation 2**

Governments of the WBCs should also introduce tax incentives for projects which involve knowledge transfer from universities to enterprises in order to encourage innovation in SMEs.

### **Recommendation 3**

Establishment of the Science and Technology Parks should be encouraged with activities to promote networking between their tenants.

### **Recommendation 4**

Industrial clusters should be encouraged to move to internationalization so that they develop an outward exporting orientation and link up with international systems of innovation.

### **Recommendation 5**

Universities should boost their incubation centers to provide more support to researchers to commercialize their application oriented research results through the creation of new spin-off enterprises.

### **Recommendation 6**

Universities in WBC region should establish Technology Transfer Centers to handle property rights issues and the licensing of inventions and innovations created in university laboratories and to encourage patenting and licensing of technologies to enterprises.

### **Recommendation 7**

Universities should focus on applied research activities. A record of collaboration with enterprises and participation in joint research projects should be included in academic staff promotion criteria.

## 6.4 Future steps

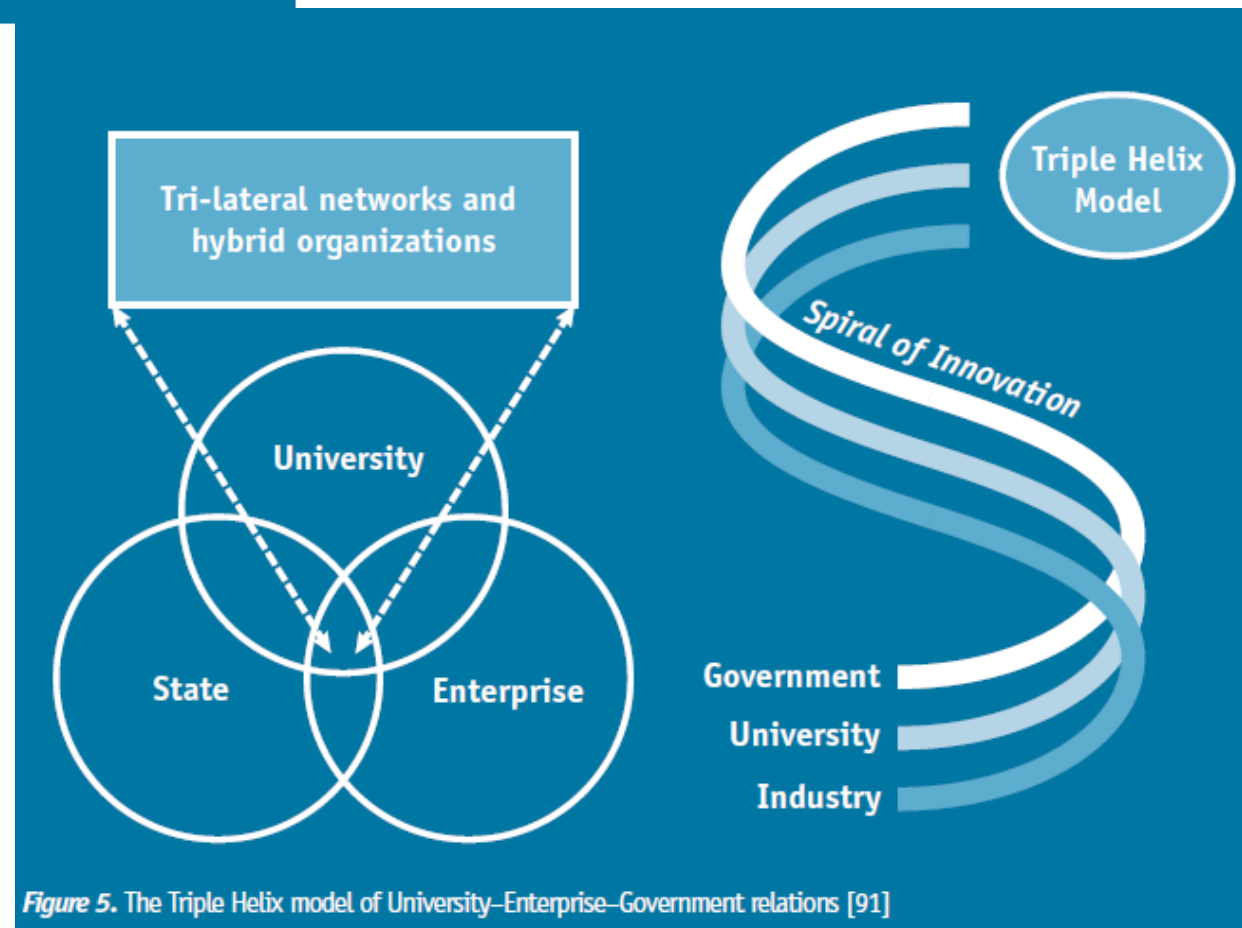


Figure 5. The Triple Helix model of University-Enterprise-Government relations [91]



## PARTNERSHIP WITH INDUSTRY THROUGH A NEW SYSTEM ON INTELLECTUAL PROPERTY



## PARTNERSHIP WITH COMPANIES THROUGH TAX INCENTIVES AND INNOVATION FINANCING

- ▶ Proactive deepening of links with institutions leading FP7 projects with Serbian participation
- ▶ Support for Serbian teams with FP7 coordinations

**THANK YOU FOR YOUR ATTENTION!**