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Enhancing innovation competences and entrepreneurial skills in engineering education (INNOCENS)

Sustainability plan for innovation centres

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1. Introduction

INNOCENS is a Capacity Building in Higher Education project, funded by the <u>Erasmus+ Programme</u> of the European Union. The project aims to enhance engineering students's innovation competences and entrepreneurial skills in order to support socio-economic development in Armenia, Belarus, Georgia and Kazakhstan. The specific objective is to develop and deliver innovation and entrepreneurship courses for engineering students, introduce innovation pedagogy and competence assessment in teaching and learning, establish 8 innovation centres to support engineering students and staff members in commercialisation of innovation ideas.

The project consortium consists of 19 partners, with Royal Institute of Technology (KTH) in Sweden as the coordinating institution (grant holder). The consortium includes 8 partner universities from Armenia, Georgia, Belarus and Kazakhstan.

	Partner university	Abbreviation	City	Country
1	National Dalutachnia University of Armonia	NIDLIA	Varavan	Armenia
1.	National Polytechnic University of Armenia	NPUA	Yerevan	,
2.	National University of Architecture	NUACA	Yerevan	Armenia
	And Construction of Armenia			
3.	Georgian Technical University	GTU	Tbilisi	Georgia
4.	Batumi State University	BSU_GE	Batumi	Georgia
5.	Belarusian State University	BSU_BY	Minsk	Belarus
6.	Brest State Technical University	BrSTU	Brest	Belarus
7.	Almaty University of Power Engineering and	AUPET	Almaty	Kazakhstan
	Telecommunications			
8.	Taraz State University	TarSU	Taraz	Kazakhstan

During the three-year project period, the project has implemented a series of activities including:

- Questionnaire survey among enterprises, universities and students
- Staff retraining on innovation and entrepreneurship as well as innovation pedagogy through study visits, workshops and training courses
- Introduction of 2 general courses on innovation and entrepreneurship to partner university students independent of study programmes
- Establishment of 8 innovation centers at partner universities
- Organizing national dissemination seminars and Entrepreneurship Day events
- Organizing innovation business idea competitions, at each partner university (local competition) and final joint competition (global competition)

The most important achievement of the INNOCENS project is the 8 innovation centers at partner universities. It is planned that these 8 centers will continue to operate after the end of the INNOCENS project.

To ensure the sustainability of the innovation centers and facilitate their future development, some relevant aspects will be analysed in this sustainability plan.

1.1 Key factors for sustainability

There are many factors which may affect the sustainability. Some of them are outlined below.

1) Permanent organization supported by the university administration

Each innovation center should have a permanent organization within the university structure, with one or several dedicated staff employed/funded by the university. These staff members can be full-time or part time employees. In the future, if the center has been running successfully, the center may expand to have specialized business mentors (coaches), dedicated intellectural property lawyers, patent engineers and other types of staff.

2) Cooperate with stakeholders for support

At the initial stage and also in the future, the center must cooperate with stakeholders in government agencies, private enterprises, non-governmental organizations working on innovation and entrepreneurship. These stakeholders can support the innovation center informally, or formally through, for example, a business advisory board. Some stakeholders can function as business coaches at the innovation centers.

3) Build local/regional innovation ecosystems through networking

Best innovation environment cannot be created alone in a classroom or within a university. The innovation center should actively work to build collaboration networks to create local/regional or national innovation ecosystems. Networking partners can be enterprises, business organization, other universities, government agencies, NGO, in particular existing science/technology parks, business incubators, accelerators, etc.

4) Reach out to students and teachers through regular events and activities

The fundamental tasks of the innovation center is to reach out to students and teachers, in order to increase the awareness of innovation, educate students on entrepreneurship, and market the center so that all students and teachers know the existence of the center and what kind support the center is providing.

For long term sustainability, the center must plan and organize regular events or other activities (such as seminars, training courses, study visits, workshops, presentation of successful startups, innovation competitions, etc etc) once a week or a month or a semester.

Social media and other channels can be used as a tool to reach out.

5) Search for external funding sources to support students and teacher

To effectively support students and teachers in their innovation activities, the innovation center should actively look for external funding from public, private and international partners.

2 Sustainability plan for innovation centers

2.1 Brest State Technical University (BrSTU)

Innovation center organization supported by the university administration.

The work of the center is personally supported by the rector of the university, who expressed extreme interest in the development of the center at its opening. For this, the center was allocated a new room with repair and development opportunities were given.

The following structure was defined for the innovation center: Head of center – Valery Kasyanik, board of internal experts: Vladimir Golovko – head of board, Vladimir Rubanov - expert, Olga Golovko – expert, Natalia Chetyrbok – expert, Andrei Mihniyaeu – expert, Shuts Vasili - expert. Advisory board: Dmitry Makaruk – ceo at Brest Scientifical TechnoPark, Roman Dolny – entrepreneur and ceo at AllBeBet OU Company, Sergey Selivonchik – entrepreneur and ceo of LLC System of industrial automation. For part time work defined team of employees: Svetlana Kleptsova – educational support specialist, Vagera Valentin – equipment support and management.

Now the main work on the organizational structure is focused on finding and attracting external experts - the heads of companies interested in innovations.

Cooperation with stakeholders.

The following companies have confirmed cooperation with the innovation center: Brest Scientific Technopark (partly government supported organization focused on commercialization of innovation in region), AllBeBet OU — private Estonian start-up company, interested in artificial intelligence innovations, LLC System of industrial automation — private company integrator of automated systems. All these companies signed cooperation agreements with the university and the center.

The leaders of these companies entered the advisory board of the center. Now work is underway to determine the format for attracting company experts as a business coach. Now plan is to invite about 5 bussiness coaches to working process of center. To unite efforts to promote the innovation center among students, a meeting of all interested representatives was held on September 3, issues of the center's development were discussed.

Regional innovation ecosystems.

To establish a local belarussian network of innovation centers, a cooperation agreement was signed between the innovation centers of BSU and BrSTU.

As part of the development of a regional network of innovative activities and invitations to participate in the work of the center to the following organizations were sent:

- 1. Brest State University
- 2. Belarussian National Technical University
- 3. Gomel State University of Transport
- 4. Vitebsk State University
- 5. LLC Savushkin Product leading food company supported innovation in region
- 6. LLC Gefest home appliance manufacturer in region Events and activities.

An action plan is being developed to attract students to the center. The following event structure is planned as below. Working meetings weekly with interested students and discussion of their projects. Inviting business coaches and working together to improve the quality of projects - once a month. Meetings with an advisory board, presentation of ideas, technologies and products - once a semester. The competition for the selection of the best innovative projects - once a teaching year.

In development is a web page on the social network Vkontakte. Information about the work of the innovation center and the involvement of interested teachers was distributed among the departments of the university.

External funding sources.

At this stage, agreements were reached with three companies on financial support for the best student projects in selected areas.					