

Policy paper

Ecosystem linkages and marketization of Higher Education Institutions

ABCD project

The Alliance of Boundary Crossing for Deep Tech (ABCD) project aimed to develop entrepreneurial mindset and help instigating deep tech entrepreneurship in the Western Balkans. The project was implemented by a consortium of Universities and Accelerators from the Western Balkans and Hungary. It consisted of 5 tailor-made packages to help with capacity building, strengthen management capacity, establish strong connections with the local innovation ecosystem and disseminate the results. One of the packages was Marketization-ABCD eco-system connections that aimed to stimulate the entrepreneurial culture of the Universities and promote their linkages with the business eco-system in the region.

Marketization – ABCD ecosystem connection

The component was focused on promoting and building linkages between Universities, NGO sector, accelerators and the public sector. The aim was to enable the basis of collaboration between universities and the relevant ecosystem and stimulate the support of entrepreneurial behavior of students and Universities with a special accent on deep tech innovation. In order to reach the goals of the work package a series of research and practical activities were undertaken. This document will

outline both the finding of the research as well as the range of applicative activities undertaken in order to stimulate the eco-system connections as well as accentuate the obstacles that need to be overcome to reach a more sustainable development of entrepreneurial mindset at university level.

In order to achieve the planned goals, we focused on two research activities as well as building a University Business Deep Tech Consortium (UBDTC).

Research findings

The first research activity was focused on understanding the perspectives of the deep-tech businesses on their preparedness and current collaboration with universities focusing on four dimensions: (i) people, (ii) science & technology, (iii) university systems and (iv) ecosystems. Answers were gathered from 74 deep tech businesses, NGOs and public bodies from North Macedonia, Montenegro, Bosnia and Herzegovina, Serbia, Hungary and Albania. In general, the respondents were satisfied with the pool of talents that can be recruited from universities, the quality and utility of academic research and universities dedication to support innovation and start-ups/scale-ups by supporting collaboration and exchange of best practices. However, most participants either appraised the collaboration as poor, fair or satisfactory leaving space from improvement. Lower scores were also given for technology

Transfer Offices and campus-based incubators and most joint activities were only focused on activities with students (lectures, hackatons etc) rather than joint research and stimulation of research and innovation. The findings were presented in a White Paper which was later utilized in development of UBDC.

The findings were corroborated by the second research activity - implementation of the eco-system tool developed by the Accelerators involved in the consortium and implemented in interviews/questionnaire form with the universities from the Western Balkans which are part of the consortium. The universities also indicated a moderate (with one of them even indicating low) level of cooperation with the local start-ups. However, the universities have a functional or are establishing an alumni network which is a testimony to the dedication of universities to build long-term relationships and support the development of the graduates. They also appraise their provision of resources (technology, equipment, offices) as their major contribution to the local eco-system. The universities are also active in establishing linkages with universities and industry on international scale.

There are also challenges for the universities in the Western Balkans. One of the is the lack of venture capitalists in the region which reduces funding opportunities and risk-taking in the regions. The universities also cannot financially support start-ups (expect for one) and they also lack support activities for the commercialization of research, including patenting and licensing, and do not have Technology Transfer Offices (except for one). Only two universities have mandatory entrepreneurship courses, while the rest have less than 20% of the students participating in such courses. The universities. The universities

also lack procedures for granting permissions of spin-offs by professors/staff and there is lack of knowledge related to tracking patent applications, commercialization and granted patents. These findings are supported by another activity done within the project focused on establishing a database for ideas for commercialization where the universities struggled to identify such ideas. Therefore, further work is needed to help with the development of entrepreneurial mindset at Western Balkan universities as well as their embeddedness within the local eco-system and stimulation of innovation and entrepreneurship.

Activities undertaken to support the ABCD ecosystem connection

The efforts to stimulate the entrepreneurial mindset and eco-system embeddedness of the universities within their local eco-system resulted in a number of activities being undertaken as part of the work package. To begin with we outlined a “Strategy for University Business Deep Tech Consortium (UBDC)” and drafted a Memorandum of Understanding. The universities used the Strategy as a guiding document and started collaboration with companies in the deep tech from their respective eco-systems by signing Memorandums of understanding. In the second phase we worked on supporting the universities by drafting a Guideline for Fostering entrepreneurship and startups in Deep Tech by utilizing University-Business collaboration and a workshop that outlined the University American College Skopje approach to university-business collaboration. The Guideline is an extension to the Strategy and operationalizes the practical functioning and sustainability of university embeddedness within the eco-system by offering advice on how to establish university structures that will enable

ongoing collaboration as well as joint activities. The universities implemented a number of activities with the organizations from their respective UBDC.

To help with the potential commercialization of ideas and stimulating entrepreneurship and innovation a Guideline “Fostering entrepreneurship and funding opportunities for startups in Deep Tech on a University level” was also produced. The activity was organized by University American College Skopje and the non-HEI partners of the project. Two workshops were also held for the HEIs to educate them about funding opportunities and ways of applying for various funds. HEI and non-HEI then mapped the funding eco-system that exists on local, regional and European level.

Recommendations

For Higher Educational Institutions:

- Work on developing intra-university bodies and mechanisms for deepening the collaboration with their respective eco-systems and enabling sustainability of the activities within the eco-system
- Offer more curricular and extra-curricular support for students by developing skills needed for entrepreneurship
- Initiate activities with their alumni organizations to enable further support to graduates
- Initiate the formation of a body/system for tracking funding opportunities that can be used by students and staff for commercialization of ideas
- Work on establishing university-based incubator activities leading to university incubators that will support the

commercialization of ideas by both student and staff and

- Establish connections with other incubators and accelerators to offer sustainable support for innovations by students, alumni and staff
- Where possible work on technology transfer offices to stimulate deeper embeddedness of the universities within the local innovation eco-system and provide solutions that are locally developed, applicable and can lead to building added value within the local economy
- Continue building on international collaboration activities to offer more opportunities for idea development, sharing and internationalization of innovative ideas by students and staff

For industry/real sector:

- Sponsor university research projects and student-initiated innovative startups by providing industry insights and funding where possible.
- Establish formal partnerships with HEIs to streamline the two-way transfer of knowledge, mutual projects, and commercialization of research.

For policy makers:

- Provide mechanisms that can be used for collaboration between public bodies, businesses and universities to stimulate technology transfer as well as other joint activities supporting innovation and entrepreneurship
- Help in the development of local funding eco-system than will make it easier to obtain funding for start-ups

- Stimulate the development of incubator and accelerator programs for local start-ups tailored to deep tech, with access to advanced labs, machinery and equipment
- Provide funding in the form of grants, subsidies and/or government-backed venture capital funds (together with private investors) to help cover the initial research, prototyping, and early-stage development costs for deep tech startups
- Provide tax incentives for startups, individuals and companies that invest in deep tech startups
- Reduce regulatory procedures and bureaucratic hurdles for starting and growing deep tech enterprises, especially in the domain of company registration and IP protection; State IP office branches can be set-up on university premises in order to help researchers patent their innovations
- Provide advisory services through government agencies to help startups integrate in the business landscape, including legal, financial, and marketing support. Moreover, government procurement programs can help create a market for deep tech innovations, offering startups opportunities to introduce and scale their technologies
- Monitor and assess the impact of policies and programs on fostering entrepreneurship and supporting startups on regular basis, and using feedback to make improvements to the process. This would also involve benchmarking against leading innovation ecosystems across the

international scene to detect best practices and make them suitable to the local landscape and cultural context.