D2.2

Gap Analysis Report

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* **R**=Document, report; **DEM**=Demonstrator, pilot, prototype; **DEC**=website, patent fillings, videos, etc.; **OTHER**=other
** **PU**=Public, **SEN**=Sensitive — limited under the conditions of the Project/Grant Agreement, **CI**=Classified (RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision 2015/444)

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1 ABOUT THE HIGHER EDUCATION INITIATIVE

About the EIT Higher Education Initiative

The EIT Higher Education Initiative is designed to build innovation and entrepreneurial capacity within higher education by integrating HEIs into Europe's innovation ecosystems and value chains. This is more than funding - it's a catalyst for change. The initiative connects institutions with industry and research, fostering collaboration where it matters most.

At the heart of this initiative is the EIT Knowledge Triangle Model - the integration of business, education, and research. Participating HEIs are expected to use this model as a practical tool to enable systemic, institutional transformation. They will also engage with Smart Specialisation Strategies, apply the Regional Innovation Impact Assessment (RIIA) framework, and contribute to the goals of the EIT Regional Innovation Scheme (EIT RIS).

This approach strengthens ties between HEIs and their regional innovation ecosystems and sets the stage for long-term impact, encouraging institutions to tap into additional funding opportunities beyond the initial project.

HEIs are invited to develop proposals that deliver on six key Actions - building entrepreneurial capacity, embedding innovation, and connecting with ecosystems. The outcome? Tangible transformation. Real results. And a stronger innovation future for Europe.

2 EXECUTIVE SUMMARY

D2.2 Gap Analysis Report is part of WP2 Innovation & Entrepreneurship Ecosystem within the project BIKE-HEI. D2.2 aims to analyse existing gaps and weaknesses within the current innovation and entrepreneurship ecosystems at the BIKE-HEI partner Universities in Spain, Slovenia, Ukraine and Germany with the aim to address these gaps and reinforce the innovation ecosystems where it is needed.

D2.1 innovation ecosystems mapping within the project BIKE-HEI collected data of a diverse group of relevant stakeholders around the BIKE-HEI partner universities. Key actors within the innovation and entrepreneurship ecosystems of the partner HEIs were asked to fill out detailed questionnaires about their role within the ecosystem around the partner HEIs, about the significant gaps they consider within the ecosystems that hinder innovation and entrepreneurship services and academic spin-offs. For D2.2 Gap Analysis Report, the data collected within the innovation ecosystems mapping is processed and analysed.

Additionally, one key actor per partner HEI gave more profound insights in a written interview about the current innovation and entrepreneurship situation. They were particularly also inquired about the existing gaps and weaknesses within their surrounding innovation and entrepreneurship ecosystems.

The three most frequent mentioned gaps and weaknesses within the HEIs ecosystems are a lack of connection, a lack of a clear innovation and entrepreneurship oriented vision and limited access to funding.

The analysis of the gaps and weaknesses within the current innovation ecosystems shall help to devise the training plan and mentoring programmes for WP3 with the aim to increase innovation and entrepreneurship vision in the participating universities and increase student and staff engagement. In this endeavour, 10 critical gaps shall be identified.

D2.2 Gap Analysis Report

2 BIKE-HEI Gap Analysis – Structure and Methodology

D2.1 Innovation Ecosystem Mapping Report provided a comprehensive analysis, aimed at identifying key actors within the ecosystems of the four BIKE-HEI partner universities in Spain, Slovenia, Ukraine and Germany. D2.2 Gap Analysis Report builds upon the data collected within D2.1 to assess the existing critical gaps and weaknesses within those ecosystems.

The goal is to support the transformation of HEIs – Higher Education Institutions into more entrepreneurial and innovation-oriented organizations. With the help of the results of D2.2 Gap Analysis Report, trainings and mentoring programs within WP3 shall be concepted, tailored to the target groups, namely students, academic and non-academic staff. Furthermore, the results of D2.2 Gap Analysis Report shall contribute to the strategic innovation and entrepreneurship institutional blueprint which will be created in WP4.

2.1 Structure

A detailed questionnaire was designed to collect both quantitative and qualitative data from the key innovation and entrepreneurship actors in BIKE-HEI's regional ecosystem, namely Germany, Slovenia, Spain, and Ukraine.

The survey included closed-ended questions as checkboxes, multiple choice, and open-ended questions, organized into the following sections:

- General information,
- Ecosystems actors and services offered,
- Interconnections and collaborations,
- Ecosystem gaps and missing services,
- Recommendations and strategic actions.

Furthermore, written interviews have been conducted with one key actor in charge of innovation and entrepreneurship at the BIKE-HEIs:

- University of Alicante: Loren Moreno Monteagudo, ua:emprende coordinator, Technology Transfer Office
- Primorska University: Prof. Dr. Stefko Miklavic, Vice Prorector for Research and Development
- Mariupol State University: Inna Arakelova, Associate Professor, Educational and Scientific Institute of Management
- Saarland University: Jens Krück, General Manager, Triathlon

2.2 Methodology

D2.2 Gap Analysis Report builds upon the results of D2.1 Innovation Ecosystems Mapping. To develop the Innovation Ecosystem Mapping Report, BIKE-HEI employed a structured, survey-based methodology designed to provide a comprehensive view of the regional innovation and entrepreneurship ecosystems across partner regions.

This survey adopted a multi-phase, comparative approach to identify and map the innovation ecosystems in Germany, Slovenia, Spain, and Ukraine. The mapping process facilitated the identification of both strong connections and missing links between actors. Within the surveys, stakeholders were also particularly asked about existing gaps, underrepresented services and under-engaged other ecosystem actors, as well as mismatches between ecosystem needs and service offerings.

The identification of gaps enables to develop and implement corrective actions, and frameworks to make HEIs more entrepreneurial and innovation-oriented. These strategies are tailored to the needs of each ecosystem, as they present distinct characteristics.

Based on the results of the mapping and gap analysis, several strategic interventions will be structured to enhance the entrepreneurial and innovation capacity of regional ecosystems. For example, tailored services should be launched or strengthened to provide specialized, targeted support that meets unique needs of each region.

The development of digital platforms (such as BIKE hub) can facilitate continuous digital interaction, resource sharing, and collaboration among ecosystem actors. Aligning HEI's internal policies with specific demands is essential to ensure institutional responsiveness and relevance.

Fostering collaboration through matchmaking events, innovation challenges and seed funding opportunities can stimulate cross-sector engagement. Finally, encouraging the formation of multi-stakeholder partnerships will help to generate a broader impact, and ensure sustainability within the ecosystem.

Additionally, the results of D2.2 Gap Analysis Report will help to design trainings and mentoring programmes within WP3 to educate students as well as non-academic and academic staff in the areas of innovation and entrepreneurship where it is needed the most.

3 Gap Analysis Report – Results of the Innovation Ecosystems Mapping

For the mapping of the current innovation and entrepreneurship ecosystems at the partner HEIs, USAAR together with META Group created a detailed questionnaire which was disseminated among significant stakeholders around the partner HEIs:

- Number of participants of the questionnaire in total: 21
- Participants by country:
    - Spain: 3
    - Slovenia: 5
    - Ukraine: 3
    - Germany: 9

Additionally, for D2.1 Innovation Ecosystems Mapping Report, one key actor at each partner HEI in charge of the innovation and entrepreneurship support services was consulted in a written interview:

- Spain: Loren Moreno Monteagudo, ua:emprende coordinator, Technology Transfer Office at the University of Alicante
- Slovenia: Prof. Dr. Stefko Miklavic, Vice Prorector for Research and Development at the University of Primorska
- Ukraine: Inna Arakelova, Associate Professor, Educational and Scientific Institute of Management at Mariupol State University
- Germany: Jens Krück, General Manager, Triathlon at Saarland University

Some of the most frequent mentioned gaps within the innovation ecosystems are a lack of a clear innovation- and entrepreneurship-oriented vision at the partner universities, not enough venture capital and/or access to the right type of funding, low student and staff engagement in terms of innovation and entrepreneurship as well as rigid bureaucracy which hinders initiatives.

In the following, the existing gaps in the innovation ecosystems of the BIKE-HEI partner universities are depicted in more detail.

3.1   Notable missing links or weak relationships within the ecosystems

Within the questionnaire for D2.1 Innovation Ecosystems Mapping, the stakeholders were asked if there are considerable missing links and/or weak relationships within their regional innovation and entrepreneurial ecosystems. The following displays the 10 most critical gaps and weak relationships that were identified by the stakeholders:

1. **Lack of stable and sustainable research funding**
   - Impact: Undermines long-term planning and continuity in research collaboration
   - Implication: Limits the ability of researchers and HEIs to engage consistently with industry or public sector partners
2. **Weak integration between stakeholders in the innovation ecosystem**
   - Impact: Activities overlap, compete, or operate disconnected from each other
   - Implication: Lack of coordination leads to inefficiencies, redundancies, frustration and missed opportunities for synergy
3. **Poor transition pathways between stakeholder support systems**
   - Impact: Entrepreneurs struggle to move from one support service to another (e.g., from incubator to investor)
   - Implication: Breaks in the support chain hinder startup growth and innovation scaling
4. **Gaps in lifecycle support for startups and SMEs**
   - Certain growth stages (e.g., scaling, internationalization) lack adequate support
   - Implication: Startups may stall or relocate to regions with more comprehensive support
5. **Disconnection between HEIs and regional companies**
   - Impact: Technologies developed are too advanced for absorption by traditional industries
   - Implication: Leads to underutilization of innovation and knowledge transfer to other regions
6. **Weak links between SMEs and Accelerators/Incubators**
   - Impact: Small enterprises are not fully integrated into structured innovation programs
   - Implication: They miss out on growth tools, mentorship, and investment networks
7. **Underdeveloped relationships between industry and HEIs**
   - Impact: Applied research, technical training, and innovation events are not fully co-developed, research from HEIs is not always applied in the industry/ does not reach the industry
   - Implication: Limits industrial, 'real-world' application of research and skill-development

8. **Insufficient pre-seed and seed funding availability**
    - Impact: Startups struggle to launch or scale
    - Implication: Early-stage innovation is stifled, and potential ventures may fail or move abroad
9. **Lack of a clear regional strategy for technology and innovation vision**
    - Impact: No shared goals or direction for stakeholders to align with
    - Implication: Fragmentation, inefficiencies, no clear focus on innovation and lack of identity as a technology-, innovation-driven region
10. **Limited institutional critical mass in key innovation regions**
    - Impact: Innovation capacity concentrated in a single public entity
    - Implication: Not enough infrastructure or partnerships to generate systemic impact at the regional level

In summary, the missing links and weak relationships that were most frequently mentioned by the stakeholders are a disconnection of HEIs and companies / the industry, a lack of sufficient funding, a possible disconnection of the different support services for startups / gaps in lifecycle support and a lack of a clear regional vision for innovation and entrepreneurship in which institutions in the industry, public sector and higher education can align with.

3.2   Ecosystem gaps and missing services

When asked if they already help addressing existing critical gaps within their regional ecosystems, the majority of the stakeholders said yes (57 %) or that they do so at least partially (~ 29 %). Only around 14 % of the ecosystem actors indicated that they do not yet help addressing any critical gaps so far.

Figure: Do the stakeholders help addressing any critical gaps in their regional ecosystems?
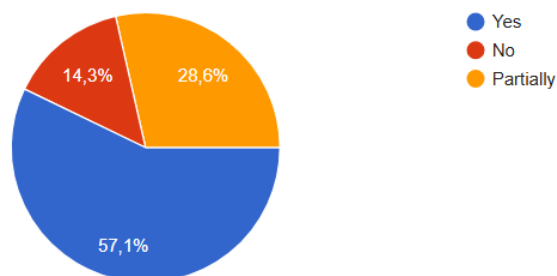
These results are intriguing, regarding that one of the missing links or weak relationships mentioned was the lack of a critical mass / potential stakeholders as collaboration partners. It seems like there is clearly an interest of the ecosystem actors to address existing gaps in their regions, as around 85 % indicate that they already help close those gaps, at least partially. The results show, though, that there is clearly a lack of connection between the stakeholders. Here lies a great potential within the project BIKE-HEI and the engagement of stakeholders for the project (WP2) as well as the creation of a BIKE-HUB (WP5) to increase the connection between the ecosystems actors that is apparently very much needed.

3.3   Missing innovation or entrepreneurship services in the ecosystem

The stakeholders were asked which services they think are missing in their current regional innovation ecosystems. In the following, the 10 most frequent mentioned missing services are listed, starting with the one that was mentioned the most often until the one that was mentioned least often within this list of 10.

1. **Mentoring programmes with industry experts or alumni (62 %)**
2. Incentives for staff to engage in entrepreneurship or commercialisation (48 %)

3. Access to angel investors or pre-seed capital for Higher Education Institutions (HEI)-based ventures (43 %)
4. Train-the-trainer programmes for university staff (43 %)
5. Equipment and prototyping services (43 %)
6. Mapping and visibility of innovation support actors and services (43 %)
7. Mechanisms to connect students with startups (internships, projects, etc.) (43 %)
8. Early-stage incubation for student and staff-led ideas (38 %)
9. Mentor pools across disciplines and sectors (38 %)
10. Clear institutional policies on entrepreneurship and innovation (38 %)

The results shown support the idea of the importance of trainings and mentoring programmes for students and staff. It is clearly desired by the stakeholders that industry experts and / or alumni will be part of the trainings and mentoring programmes, which is a significant finding for the designing of such programmes within BIKE-HEI WP3.

3.4   Under-engaged or absent ecosystem actors

Another question that was raised towards the stakeholders are the types of actors they feel are under-engaged or underrepresented within their regional ecosystems. The results display the gaps and needs for support systems that have been identified earlier: The group that has been mentioned most frequently by far is **Investors and Funders with 76 %** of stakeholders indicating them as an under-engaged or absent group. 38 % of the ecosystem actors also indicated businesses and companies and 33 % pointed out that public sector innovation buyers are underrepresented.

3.5   Barriers that prevent better collaboration between HEIs and the ecosystem

76 % of the stakeholders indicated that insufficient entrepreneurial culture within their regional ecosystems is a barrier that prevents a better collaboration between HEIs and the ecosystem around them. This matches with the findings regarding the missing services and the missing links and / or weak relationships. The results show that the stakeholders clearly wish for a stronger focus on innovation and entrepreneurship within their regional ecosystems, an aspect that shall be reinforced within the project BIKE-HEI, notably via the co-designing of a strategic innovation and entrepreneurship blueprint policy by the partner HEIs as well as other ecosystem actors.

67 % of the ecosystem actors mentioned that limited access to funding is one of the main barriers between HEIs and the surrounding ecosystems. Again, this is supported by the results of the other questions within the survey, and it clearly shows that an increase of access to funding is clearly desired by the stakeholders to improve continuing collaboration between HEIs and the industry.

As was also mentioned as one of the main issues regarding cooperations of HEIs and the ecosystem around them, rigid bureaucratic and regulatory constraints are considered a hindering factor, according to the participating stakeholders.

38 % mentioned a lack of institutional strategy or vision, which aligns with a lack of a general entrepreneurial culture, as well as a lack of connection between the HEIs and the surrounding ecosystems and low student and staff engagement. All those three aspects are to be addressed within the project BIKE-HEI. The institutional strategy and vision for innovation and entrepreneurship shall be addressed with the strategic innovation and entrepreneurship blueprint within WP4, the lack of connection is to be decreased with the engagement of significant stakeholders within the regional ecosystems of the BIKE-HEI partner universities within WP2 and the creation of a BIKE-Hub within WP5. With the help of the training and mentoring programmes within WP3, innovation and entrepreneurship education and engagement among students and academic and non-academic staff shall be increased.

3.6 Top 3 gaps or weaknesses affecting HEIs in supporting entrepreneurship

The stakeholders were asked to identify their top 3 gaps or weaknesses which affect Higher Education Institutions in supporting entrepreneurship. The results are the following, which again mirror the results in the chapters above:

1. Lack of sustainable and sufficient funding

Mentions include:
- Not enough VC
- Insufficient funding and infrastructure
- Lack of money in the region (public funding and industry/investors)
- Missing long-term funding of technology transfer
- Too few financial resources
- Limited financial and infrastructure resources
- No seed capital fund
- Unattractive salary for R1 researchers
- Sustainable financing of relevant structures

2. Weak integration between academia and industry

Mentions include:
- Weak collaboration with the business sector
- No commercialisation from research institutions
- Disconnect between academic programs and practice
- HEIs rarely build long-term partnerships with SMEs
- University programs often lack engagement with real-world businesses
- No structured mentoring schemes
- No resources to help students develop MVPs
- Insufficient entrepreneurial mindset in curricula

3. Lack of strategic vision and coordinated ecosystem development

Mentions include:
- Lack of vision
- Lack of structural stability
- No incentives for academic staff
- Too many copies of similar structures
- No clear vision regarding entrepreneurship for all stakeholders
- Original mission of university as a barrier to commercialization
- Absence of entrepreneurial and innovation culture
- The region is too small to be recognized

According to the stakeholders, clearly access to funding, connection and strategic vision are the top 3 weaknesses of the innovation ecosystems.

4 Recommendations and Strategic Actions

To provide ground for a joint strategic innovation and entrepreneurship policy blueprint as well as the WP3 Trainings and Mentoring Programmes within the project BIKE-HEI, in the following, the stakeholders answers on quick wins and long-term actions that would improve the regional innovation and entrepreneurship ecosystems shall be displayed in more detail.

The 10 most frequently mentioned quick wins or actions that were to be implemented, according to the stakeholders, are as follows:

- Map and publish an online directory of regional innovation actors
- Run internal awareness campaigns
- Host innovation days or innovation and entrepreneurship fairs on campus
- Organize stakeholder roundtables or co-creation workshops
- Develop a mentoring pool
- Create a dashboard to track innovation indicators
- Launch short entrepreneurship bootcamps or hackathons
- Implement a "train-the-trainer" programme
- Sign MoUs (Memorandum of Understanding) of informal agreements with local incubators, science parks, or municipalities to pilot collaborative initiatives
- Establish a startup idea competition

The 10 most frequently mentioned long-term structural improvements (2+ years) are as follows:

- Establish structured alumni entrepreneur networks
- Set up long-term co-financing mechanisms with public and private partners
- Mainstream entrepreneurship education across all disciplines
- Incentivize and reward staff for innovation and entrepreneurship engagement
- Integrate entrepreneurship and innovation into HEI mission and governance structures / Establish a Vice-Rectorate or Dean or Innovation and Entrepreneurship
- Integrate entrepreneurship and innovation into HEIs mission and governance structures
- Develop and institutionalize an Innovation Vision Action Plan (IVAP)
- Build or scale up a permanent Innovation and Entrepreneurship Hub on campus
- Adopt a formal impact assessment framework
- Embed entrepreneurial pedagogy and assessment in teaching practices

The collected data shows that once again there is a strong interest in the alumni network to foster entrepreneurial culture. Additionally, also regarding long-term structural improvements it is mentioned that ecosystem actors hope for a stronger integration of innovation and entrepreneurship into the HEI's institutional mission and strategies. The wish of the participating stakeholders to build up a permanent innovation and entrepreneurship Hub aligns with the aim within WP5 to create a BIKE-Hub to foster innovation and entrepreneurship within the BIKE-HEI partner universities' ecosystems. With the trainings and mentoring programmes within WP3, entrepreneurial pedagogy and assessment will be embedded and reinforced in teaching practices at the HEIs within the project and, in the long term, within the Transform4Europe Alliance.

5 Summary

D2.2 Gap Analysis Report, building on the Innovation Ecosystem Mapping (D2.1), identifies structural gaps, missing services, and collaboration weaknesses within the entrepreneurial and innovation ecosystems of the four BIKE-HEI partner universities in Spain, Slovenia, Ukraine, and Germany. The findings aim to support the transformation of HEIs into more innovation-oriented institutions and inform the design of targeted training and mentoring programmes (WP3) as well as the joint institutional blueprint for innovation and entrepreneurship (WP4).

Regarding all the aspects inquired towards the participating stakeholders, the following 10 most critical existing gaps and weaknesses within the BIKE-HEIs innovation ecosystems can be identified:

1. Lack of sustainable and sufficient funding
2. Weak connection between academia and industry
3. Absence of a general regional strategic innovation vision and coordination
4. Poor lifecycle support for startups and spin-offs
5. Underrepresentation of key ecosystem actors (such as investors, business and public sector buyers)
6. Institutional barriers (such as rigid bureaucracy and insufficient incentives)
7. Lack of mentorship and training infrastructure
8. Insufficient visibility and connectivity among ecosystem actors
9. Gaps in infrastructure and prototyping capabilities (lack of access to labs, maker spaces etc.)
10. Limited integration of innovation and entrepreneurship in the HEIs governance structures

According to the data collected, the following 5 key missing services in the ecosystems can be identified:

1. Mentoring programmes, especially with industry experts and / or alumni
2. Incentives for (academic) staff and students to engage in innovation
3. Access to pre-seed / angel funding
4. Train-the-trainer programmes for university staff
5. Incubation and prototyping facilities

These results show that regarding the training and mentoring programmes that are to be implemented within WP3, it is recommendable to consider trainings and mentoring programmes with industry experts and / or alumni and to include train-the-trainer programmes, dedicated to university staff, with the aim of a general increase of entrepreneurial and innovative education among students, academic and non-academic staff.

In conclusion, D2.2 Gap Analysis Report reveals a consistent pattern of disconnected ecosystems, under-resourced entrepreneurial services, and limited institutional vision for innovation. To address these challenges, training and mentoring programmes within WP3 must be implemented, cross-sectoral, and strategically aligned, directly targeting the needs highlighted by ecosystem actors. These programmes, along with broader institutional reforms and stakeholder engagement strategies, are essential to position HEIs as active drivers of regional innovation.

Furthermore, it is essential to connect the ecosystem actors of the HEIs and around them. This shall be reinforced within the project in terms of the stakeholder engagement within WP2 and the creation of a BIKE-Hub within WP5.

Finally, and equally important, to foster innovation and entrepreneurship orientation at HEIs and their surrounding ecosystems, the focus on a general vision for innovation and entrepreneurship should be increased in the respective regions. The project BIKE-HEI will contribute to this with a joint blueprint within WP4 for the redefinition of Innovation and Entrepreneurship strategies and policies at the BIKE-HEI partner universities and the comprehensive Transform4Europe Alliance.