



BLUEPRINT FOR INNOVATION AND ENTREPRENEURSHIP IN BIOHEALTH

BRIEFING




<http://bioall.eu/>



Erasmus+

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OBJECTIVES AND METHODOLOGY

The BIO-ALL project, in the framework of Key Action 2: Cooperation for innovation and the exchange of good practices - Knowledge Alliances for Higher Education, within the Erasmus+ program aims to promote new skills and competencies in the BIOHEALTH sector. To achieve the above, the project is focusing on the development of:

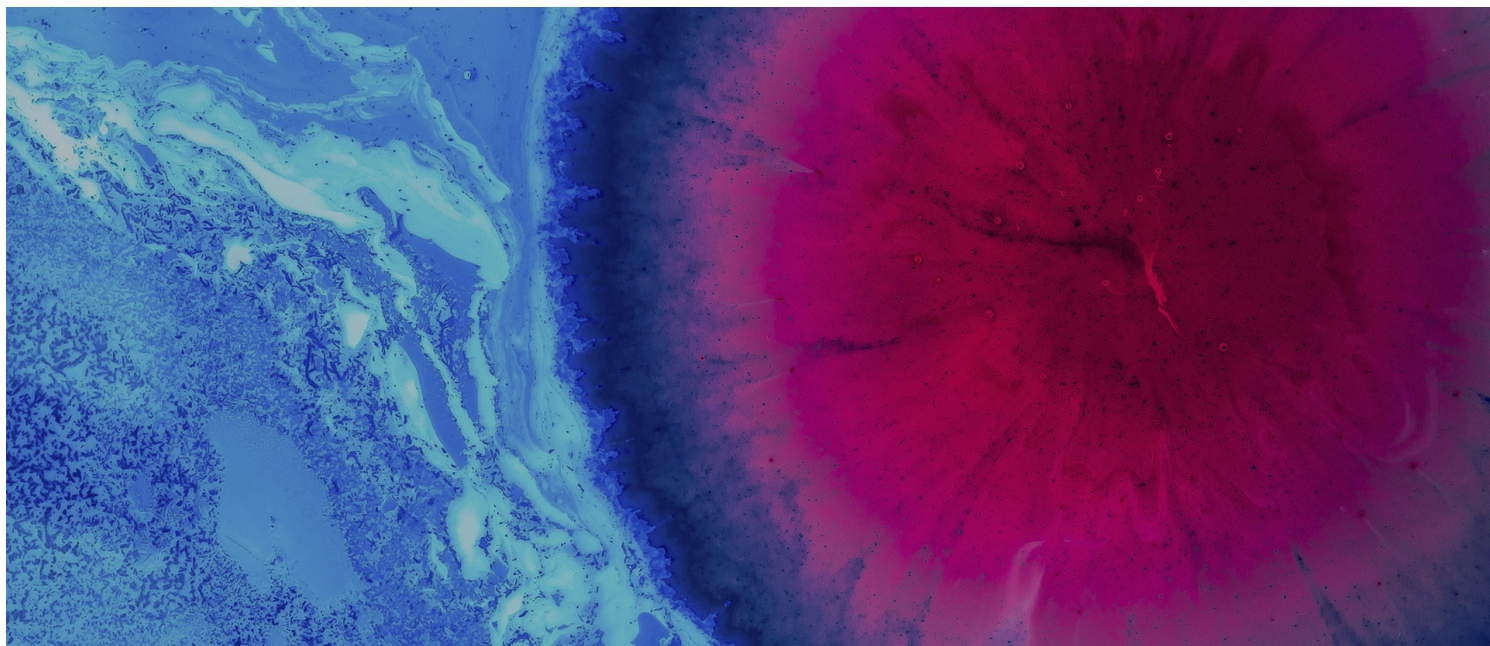
- A blueprint for driving innovation and entrepreneurship through the BIOHEALTH sector;
- An international joint post-graduation on advanced skills for innovation and entrepreneurship in the BIOHEALTH sector;
- An international joint accelerator programme - the gear box business accelerator;
- The gear box hub - a virtual network for entrepreneurs and innovators in the BIOHEALTH sector.

This document is the **short version (briefing)** of the **Blueprint**, and presents in a concise way the main points introduced in the document of work (also available in the project website).

The Blueprint for Innovation and Entrepreneurship in BIOHEALTH sector has been developed together with key-actors and end-users based on an exhaustive mapping of the current landscapes, trends and lessons learned. It presents possible evolution scenarios, related strategies and actions and provides recommendations for a brighter future of University-Business Cooperation and entrepreneurial and innovative processes within the sector.

For the development of the blueprint, a survey was distributed and interviews were made to relevant stakeholders of the BIOHEALTH sector. A set of responses was collected, being 14 from Academia, 9 from incubators/accelerators, 29 from Business, and 13 from others (chambers of commerce, national associations, among others).

THE BIOHEALTH SECTOR



Universities have a very important role to encourage economic and social development, largely through education for entrepreneurship, since they are able to stimulate students' entrepreneurial skills and their entrepreneurial intentions. European economic growth and increased employment depends on the ability to support business growth.

In this sense universities must be a guiding light, disseminators and stimulators of the entrepreneurship knowledge and, consequently, of entrepreneurial intent and innovation, helping to develop these business ecosystems.

In Italy, the sector is one of the most research-intensive sectors, currently experiencing a period of growth, driven by biotechnological pharmaceutical innovation.

In Portugal the sector focuses on high quality education, training of several doctorates in the areas of health sciences, medical sciences or engineering, and is seeing an increase in investment both by the government and by the private sector.

In Spain the sector continues to grow year after year. This is largely due to the transversal nature of it, as more and more companies from different sectors incorporate biotechnological activities to its products and services.

UNIVERSITY - BUSINESS COOPERATION



Achieving effective technology transfer and commercialization of new discoveries from universities, research institutions, and national laboratories to the private sector has been a challenge for several countries. The interactions between universities and industry must be recognised as an important pillar to economic development, because it increases a country's competitive advantage, creates jobs and contributes to social inclusion.

For both universities and businesses, University-Business Cooperation (UBC) is being comprehended as an optional activity that is not necessarily natural for both. As such, appropriate mechanisms need to be put in place to stimulate and support the cooperation. These supporting mechanisms shall aim to help reduce or eliminate the largest barriers, offer facilitators and provide incentives that reward universities and businesses to undertake the activity. This can include creating new, or building on old policies, strategies, structures and activities.

There is a need of creating forms of compatibility between entrepreneurial activities and training, and general academic training, opening new perspectives for entrepreneurship as a university culture.

UBC - The Italian Perspective

Over 80% of academics do not undertake any business-related activities at all.

Academics identify their capabilities for UBC as moderate. However, they believe it is their and the university's role to collaborate with businesses in research. They also state that they have a lot to offer in R&D collaboration to companies. But, they admit to not know enough about businesses needs and wants and they don't have enough support to undertake UBC action. They seem satisfied with the joint activities with businesses in research, however the education related UBC has significantly lower satisfaction rates. 99,6% of Italian academics show a very strong commitment to maintain or increase their collaborative activities in the future. This shows a positive momentum for UBC.

Italian businesses' perspective, tend to demonstrate a higher inclination to engage in joint R&D, mobility of students and consulting.

They are supportive of collaboration with universities, certain of their own capability to absorb knowledge and technology from them. businesses report that universities play an important role in the development of an innovative ecosystem. However, with more focus on research and innovative development, Italian businesses do not see their own responsibility and capability to collaborate with universities in education-related activities, and therefore show much less satisfaction with UBC in education.



**Country
related
information**



Country related information

UBC - The Portuguese Perspective

Academics tend to be involved in a variety of different cooperation types, with international mobility of students, joint R&D and curriculum co-delivery emerging as the most developed ones.

Academics already cooperating with business have a positive perception of their abilities and roles in undertaking UBC. They believe it is their and their universities' role to collaborate with businesses, in both research and education activities. Overall, those cooperating have a positive attitude towards UBC. However, Portuguese academics consider their business contact base and general knowledge about UBC insufficient and they report that they lack support to undertake cooperation with businesses.

The Portuguese business shows a moderately high engagement in research related cooperation.

Portuguese businesses perceive themselves to be supportive towards UBC. They recognise the importance of universities for their innovation efforts and report they have the capability to absorb knowledge and technology from universities. However, Portuguese businesses report as insufficient the support to undertake UBC within their business, as well as they perceive a lack of skills to do so.

UBC - The Spanish Perspective

Spanish academics seem to be involved in a variety of different cooperation schemes, but in general their involvement is low.

As so, Spanish academics who already collaborate with businesses have a positive view of their abilities and roles in undertaking UBC. They identified their strengths in the research area, and believe it is the university's role to collaborate with businesses. However, they perceive to have insufficient support to undertake UBC. Spanish academics seem to be satisfied with the joint activities with businesses in research, however the education-related UBC has significantly lower satisfaction.

The Spanish business shows a relatively high engagement in research related cooperation.

They perceive themselves to be supportive towards UBC and report having the capability to absorb knowledge and technology from universities and enough support to undertake UBC. Spanish businesses recognise the important role played by universities in their innovation efforts and state that they have a lot to offer to universities regarding research. However, they are less supportive towards UBC in education and find themselves least inclined towards taking the responsibility to collaborate with universities in this field. Generally, they are less satisfied with collaboration in education than in research.



**Country
related
information**

RESULTS FROM THE BIO-ALL RESEARCH



Visions of the BIOHEALTH sector

Currently in the BIOHEALTH sector, there is a presence of big opportunities though characterised by lack of investments or equipment in this sector. Within this context the visions for BIOHEALTH see towards:

- Growth of the BIOHEALTH sector from a holistic point of view, also by shifting from “long life” goal to a “healthy life” goal.
- Need for the more strong private players in the BIOHEALTH landscape.
- Great possibilities to invest, explore innovation and entrepreneurship, if the path is clear in terms of regulatory affairs both from national and international point of view.

Scenarios for the BIOHEALTH sector

- Regulations and tax advantages could be present in the upcoming scenarios.
- New technologies will be progressively appearing, as the years go by and the business world evolves.
- Disconnection between public and private entities and difficulties to start projects from scratch at regional level.
- Inefficiently managed public structures, directly impacting the generation of new local innovations that can impact globally.
- Creating Hubs to combine academic and research know-how with that of management, finance and entrepreneurship in order to develop ideas and innovation.
- Need of a guideline and a need to diminish the bureaucracy that can be responsible in ending some innovative business that are starting.

Drivers and trends in future scenarios

- National and EU strategies will be protagonist for the development of this sector.
- Stronger investment in research and innovation will keep companies and universities going side by side with these trends.
- Rise in demand coming from the public sector: vaccines; drugs; new medical products; new technologies; and new organizational models and structures for the provision of these goods and services.
- Need to gather experienced entrepreneurs in order to keep up with such evolution in this sector. This could be the role of the Universities, by inviting them as experienced partners and mentors in hubs.
- Private initiatives, entrepreneurs and businessmen will be the drivers of these trends, so, there will have to be a greater connection between companies and research groups to advance together.

Strategies and actions to achieve scenarios

- Networking between academia and business seems to be the road to follow, in order to ensure the success of the sector.
- Connect private savings and investment, and also support start-ups growth through specialized investment funds and the creation of markets for financing start-ups.
- Long-term wise, the strategy to be followed is shift from a competitive environment to a cooperation system where projects and entrepreneurs can take advantage of and benefit from the infrastructures and equipment that exist.
- Promote scientific production and at the same time develop adequate tools to protect intellectual property.
- On the short term defining a tangible plan in developing competences, on a medium term betting on training and sharing the good practices, and on long term materializing all the above in new companies, better employees and a bigger know-how in the biotechnology areas.

Strategies and actions to promote innovation and entrepreneurship

	Academia	Business	Incubator/Accelerator
<div>Most voted</div> <div>↓</div> <div>Less voted</div>	Education and advanced learning	Policies at European, National and Regional level	Potential Markets
	Potential Markets	Business incentives: tax, subsidies, credits	Innovation -R&D+I, Patents
	Entrepreneurial capabilities in biotechnology	Innovation -R&D+I, Patents	Entrepreneurial capabilities in biotechnology
	Innovation -R&D+I, Patents	Potential Markets	Policies at European, National and Regional level
	Entrepreneurial processes in the biotechnology sector (phases, deadlines, composition, potential entrepreneurial rate, dropout rate, regulation, certification)	Education and advanced learning	Business incentives: tax, subsidies, credits
	Business incentives: tax, subsidies, credits	Entrepreneurial capabilities in biotechnology	Entrepreneurial processes in the biotechnology sector (phases, deadlines, composition, potential entrepreneurial rate, dropout rate, regulation, certification)
	Policies at European, National and Regional level	Entrepreneurial processes in the biotechnology sector (phases, deadlines, composition, potential entrepreneurial rate, dropout rate, regulation, certification)	Education and advanced learning

Recommendations for policy makers

- There must be an adequate regulatory framework but, without specific knowledge, it is impossible to start a business in the BIOHEALTH sector.
- Bureaucratic simplification for access to finance will be crucial, so that any kind of future development will be properly efficient.
- Intellectual Property is the cornerstone for the BIOHEALTH sector as it is the connection between Universities and Businesses, which for its turn should be far more efficient.

FINAL CONSIDERATIONS

COVID-19 in the short term, affected the energies of many industries in the BIOHEALTH sector which focused on counteracting the spread of the pandemic through the production and marketing of prevention tools, such as masks, or treatment tools, such as respirators. At the same time, industries NOT in the sector have also converted their production in order to contribute to the extraordinary demand for such devices during the worst days of the crisis. COVID-19 was also suggested as a main scenario in order to boost new biotech companies.

Entrepreneurship. The entrepreneur in the BIOHEALTH sector must be a key-individual, which is prone and able to cope with the unexpected in his field, with a sense of business, with a great capacity for leadership and negotiation, the ability to quickly learn new things even if not strictly related to the research (s)he deals with, and with a high sense of responsibility because its products' portfolio can reach many people. Another noteworthy aspect is that the BIOHEALTH player is an "international citizen". He has to interact with a wide range of people in different corners of the world to increase his chances of success and performance.

The European Union already recognizes that after information technology, the BIOHEALTH sciences are the next phase of the knowledge-based economy, creating new opportunities for our societies and economies. That is why BIOHEALTH must remain at the heart of the priorities of the funds in the coming years. Also, there is a need to understand how the EU regulates research work.

Knowledge is the key to success in this sector. That's why the academia needs to keep focusing in this sector and fueling the training of key actors on this matter. Moreover, there is a need for spurring knowledge, in order to have the sector grow at a faster pace, as suggested by the students of the Joint International Post-Graduation.

Start-ups are responsible for creating a relevant portion of the total number of new jobs generated, in the BIOHEALTH sector: a factor that should push governments to foster the development of new start-ups rather than focus on saving traditional businesses. Also, coopetition between small start-ups and big companies needs to exist in order to have a growth in innovation. Further, there is a need for a lesser taxation on start-ups so that they can become competitive in a larger scale. That also led to the suggestion of a new design of fiscal schemes in order to alleviate start-ups from fiscal credit policies.



Bio-All

BIOHEALTH GEAR BOX ALLIANCE

BIO-ALL's ambition is to accelerate knowledge and competences to boost efficient innovation and entrepreneurial processes in the BIOHEALTH sector, fostering co-creation and collaborative dynamics between and within relevant actors of the ecosystem.



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