

# Local PhD Hub strategies

## The vision of the European PhD Hub applied to the local realities

### European PhD Hub

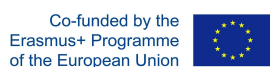
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## 1. Executive summary

This aim of this report is to present the four local Hubs strategies, namely Alcalá, Birmingham, Thessaloniki and Lodz. Each hub, composed by academic and business representatives, has analysed its local environment, including limitations and opportunities, and elaborated a list of priorities and solutions that will be addressed by the PhD Hub. Each of the strategies is published independently, however, this document provides an analytical overview and presents the transversal aspects that are considered preeminently in the rollout of the strategies. It contains examples and good practices from the partner universities (UAH, BCU, AUTH and ULO<sup>1</sup>) on how to foster the involvement of PhD students, Higher education institutions and Businesses in order to establish an efficient knowledge triangle and enhance the reach and capacity of their local Hubs to support PhD tracks cooperation world with industry<sup>2</sup>. Moreover, the implementation of the local Hub strategies will reinforce the link between research, education and innovation, thus supporting the establishment of an entrepreneurial culture in academia and among PhD students as well as improving the skills' matching between education and industry.

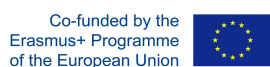
The transferability potential of this document is high as it can pave the way for new institutions/organisations to create their local Hub, join the [European PhD Hub](#) initiative and enhance the impact of their knowledge triangle and knowledge transfer schemes. It also serves as a practical and informative report that can be used as a basis to further develop industrial doctoral programmes and improve the collaborative instruments and mechanisms between Higher Education and the labour market.

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<sup>1</sup> Respectively the University of Alcalá, Birmingham City University, Aristotle University of Thessaloniki and University of Lodz.

<sup>2</sup> In the following document, we use the word “industry” to refer to businesses and civil society organisations.

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# 1. Constants and singularities of the Local PhD Hub Strategies

The tables below are presenting the industrial PhDs specificities as well as the overall lines of action according to each local Hub.

PhD Hub	Industrial PhDs specificities			
	Alcalá (ES)	Birmingham (UK)	Thessaloniki (GR)	Lodz (PL)
Main research fields covered	Economics (Bio)Engineering Computer-Science Chemistry Pharma	Energy Medicine Engineering Computer-Science Material Sciences	Computer-Science Agro-food Material Sciences Microbiology Biochemistry Energy Transport Product Development	Material Sciences Computer-Science Biochemistry Energy Medicine Pharma Chemistry Environment Protection Logistic
Existing funding schemes & opportunities <sup>(1)</sup>	Industrial Doctorate (N) (R)	KTP (N) KITTS, KEEN, M4C (R) CDAs (L)	n/a	Industrial Doctorate (N) Fast Track <sup>(4)</sup> (N)
Funding frameworks	Scholarship/grant <sup>(3)</sup> Co-funding <sup>(2)</sup>	Scholarship/grant <sup>(3)</sup> Co-funding <sup>(2)</sup>	Scholarship/grant <sup>(3)</sup> Co-funding <sup>(2)</sup>	Scholarship/grant <sup>(3)</sup> Co-funding <sup>(2)</sup>
Standard length (in years)	3-4	3-4	3	3-4
Main contact person	<a href="#">Ignacio Bravo</a>	<a href="#">Rehan Bhana</a>	<a href="#">Stella Kostopoulou</a>	<a href="#">Dariusz Tzmielak</a>

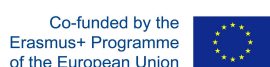
<sup>(1)</sup> National (N), Regional (R), Local (L)

<sup>(2)</sup> Funding framework which includes government, university and/or company's funds

<sup>(3)</sup> Funding framework which is fully funded by the company or university

<sup>(4)</sup> Polish National Agency for Research and Development grants

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Local hub strategies – main objectives for Students			
Alcalá (ES)	Birmingham (UK)	Thessaloniki (GR)	Lodz (PL)
<ul style="list-style-type: none"> <li>-Ensure proper recognition for students taking part in industrial PhD programmes</li> <li>-Inform them about regulations in place in Spain</li> <li>-Deepen their knowledge about funding schemes &amp; opportunities in Spain</li> <li>-Create a local hub newsletter</li> <li>-Create a PhD local competition (prize for “best industrial thesis”)</li> </ul>	<ul style="list-style-type: none"> <li>-Provide tailored support/trainings for students for industrial PhDs via the DRC<sup>(1)</sup></li> <li>-Strengthen the ties with PPGR (student unions)</li> <li>-BCU post-graduate studentship agreement</li> <li>-Develop the BCU Research Blog through Birmingham ub</li> <li>-Organise research seminars</li> <li>-Deepen their knowledge about funding schemes &amp; opportunities in UK</li> </ul>	<ul style="list-style-type: none"> <li>-Deepen their knowledge about funding schemes &amp; opportunities in Greece</li> <li>-Improve the knowledge triangle</li> <li>-Inform them about regulations in place in Greece</li> <li>-Create an alumni network of industrial PhD holders</li> </ul>	<ul style="list-style-type: none"> <li>-Inform them about regulations in place in Poland</li> <li>-Empower them to develop patents with businesses</li> <li>-Reduce the student administrative workload related to industrial PhDs</li> </ul>

<sup>(1)</sup> Doctoral Research College

Local hub strategies – main objectives for Business			
Alcalá (ES)	Birmingham (UK)	Thessaloniki (GR)	Lodz (PL)
<ul style="list-style-type: none"> <li>-Liaise with business confederations</li> <li>-Organise seminars to inform them about funding schemes and opportunities</li> <li>-Organise sector-specific meetings/workshops</li> <li>-Advertise the successful university-business cooperation to businesses locally</li> <li>-Present success stories</li> <li>-Ensure proper legal framework (IPR<sup>(1)</sup>, patent, security tool...)</li> <li>-Emailing campaigns for new businesses (conversion)</li> <li>-Present benefits of industrial PhDs (R&amp;D)</li> </ul>	<ul style="list-style-type: none"> <li>-Reinforce the already existing ties with local &amp; national businesses (e.g. Network Rail, Mitchells &amp; Butlers...)</li> <li>-Ensure proper legal framework (IPR<sup>(1)</sup>, patent, security tool...)</li> <li>-Present success stories</li> <li>-Advertise Birmingham local hub to companies during the BCU Innovation Fest</li> <li>-Organise sector-specific meetings/workshops</li> <li>-Organise seminars to inform them about funding schemes and opportunities</li> </ul>	<ul style="list-style-type: none"> <li>-Open dialogue with business sector on quality policy framework for UBC<sup>(2)</sup></li> <li>-Present benefits of industrial PhDs (R&amp;D)</li> <li>-Present success stories</li> <li>-Organise sector-specific meetings/workshops</li> <li>-Organise seminars to inform them about funding schemes and opportunities</li> <li>-Present the concept of entrepreneurship, UBC, innovation</li> </ul>	<ul style="list-style-type: none"> <li>-Organise seminars to inform them about funding schemes and opportunities</li> <li>-Present benefits of industrial PhDs (R&amp;D)</li> <li>-Present success stories</li> <li>-Organise sector-specific meetings/workshops</li> <li>-Reduce the business administrative workload related to industrial PhDs</li> <li>-Reduce the high-level of risk perceived vis-a-vis applied research (R&amp;D)</li> <li>-Defining priority actions to be financed from business funds</li> </ul>

<sup>(1)</sup> Intellectual Property Rights

<sup>(2)</sup> University-Business Cooperation

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Local hub strategies – main objectives for Local authorities and other stakeholders			
Alcalá (ES)	Birmingham (UK)	Thessaloniki (GR)	Lodz (PL)
<ul style="list-style-type: none"> <li>-Liaise with Madrid Regional government and National Agency for Research</li> <li>-Involve associations linked to HEIs and industry (e.g. CEIM, Chamber of Commerce)</li> <li>-Get support from the city councils and local business associations</li> <li>-Ensure synergy of funding schemes &amp; opportunities</li> </ul>	<ul style="list-style-type: none"> <li>-Liaise with the Birmingham City Council</li> <li>-Ensure synergy of funding schemes &amp; opportunities</li> </ul>	<ul style="list-style-type: none"> <li>-Open dialogue with local government on a coherent policy regarding regional smart specialisation</li> <li>-Ensure synergy of funding schemes &amp; opportunities</li> <li>-Involve local and central authorities in various Thessaloniki local hub events</li> <li>-Identification of complementary and additional funding opportunities/sources</li> </ul>	<ul style="list-style-type: none"> <li>-Defining priority actions to be supported by regional government</li> </ul>

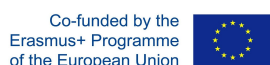
## 2. Zoom in on the local PhD Hub strategies

### a. The actors of local environments within European PhD Hub vision

The modern society in which we are living is pressuring higher education institutions (HEIs) to align their educational offer to the business market's needs and further develop the pillars of research and innovation, in an integrated fashion, to ensure its competitiveness. Since the need for creating an efficient knowledge triangle between the stakeholders is still outstanding, the European PhD Hub partners are developing their strategies to best address this pressing issue as well as consider the needs and limitations which are inherent to their environments.

The local Hubs that have been deployed in Alcalá, Birmingham, Thessaloniki and Lodz share the vision of a European-wide knowledge transfer marketplace where, on the one hand, PhD students are able to apply their research results and contribute to innovation in the business industry and, on the other hand, in which the business and academic sectors cooperate more closely and develop long lasting and trust relationships that contribute to the growth of the information and knowledge society. The European PhD Hub vision encompasses the shared values and goals of the students, universities and businesses which can be condensed in the following key elements:

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- Establishing a quality policy framework for university-business cooperation, aiming to represent the interest of both academic and corporate fields
- Increasing research opportunities and their transferability
- Facilitating innovation and entrepreneurship within academia and business
- Identifying complementary and alternative funding sources
- Increasing research opportunities
- Strengthening the knowledge triangle
- Expert supervision within and across their dynamic mix of university partners
- Networking and collaboration on both national and international levels
- Mobilising PhD students and/or candidates

The four local environments (Alcalá, Birmingham, Thessaloniki, Lodz) typically gather four stakeholders namely, PhD students and/or candidates, HEIs, Enterprises and local authorities. The roles and responsibilities of the stakeholders in applying research to the business industry are slightly different from one to another environment and usually orbit around, but are not limited to, i) facilitating cooperation between academia and businesses and co-developing industrial PhD offers, ii) developing common PhD legal/policy frameworks, iii) using and developing PhDs funding schemes and opportunities, iv) providing appropriate supervision.

PhD students and/or candidates: In all of the local environments, the role and responsibilities of PhD students and candidates in the knowledge triangle relate to their involvement in the co-creation of knowledge as part of the innovation system. In addition, their ability to effectively communicate about the research results, in accordance with the binding terms of the PhD agreement, is also an important factor to ensure the transferability of the knowledge produced.

Higher education institutions: HEIs have a central role to play in the popularisation of applied research and innovation. They work both as a steering force towards the development of partnerships with the business sectors (see section on Science-Business cooperation) and local authorities and a mediator between the students and the other stakeholders. The Alcalá and Birmingham local hubs, have put emphasis on the definition of a legal/policy framework which would clarify the specific issues related to the exploitation and commercialisation of the PhD results (e.g. IPR), although in Thessaloniki it is furthermore important to develop a framework in line with regional smart specialisation<sup>3</sup>. Additionally, if in some of the areas of collaboration, the supervision of PhD students is

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<sup>3</sup> Smart specialisation is an innovative approach that aims to boost growth and jobs in Europe, by enabling each region to identify and develop its own competitive advantages. Through its partnership and bottom-up approach, smart specialisation brings together local authorities, academia, business spheres and the civil society, working for the implementation of long-term growth strategies supported by EU funds. European Commission, 2014, Cohesion Policy 2014-2020.

clearly defined by the agreements binding the three main parties (PhD students, HEIs, Businesses) as presented by Birmingham, in some others, the specifications of the involvement of the academic and business supervisor is still broadly (or not) defined and not always equally shared which could potentially impact the quality of the research results and limit its use in the industry sector.

Enterprises: The role and responsibilities of the enterprises lie in their ability to provide a quality environment which fosters innovation. They should engage with the PhD talents to define the rules and regulations which would ensure quality and applicability of the research results in accordance with their local settings and environment. The funding opportunities that enterprises offer to the PhD students vary according to their funding capacity and consequently, but not exhaustively, to their size and sector. From one local environment to another, the PhD funding schemes of the enterprises are either i) non-existent, ii) partially internal<sup>4</sup>, iii) fully internal<sup>5</sup>. The most popular funding scheme to conduct an industrial PhD in the region of Alcalá, Thessaloniki and Lodz is the co-funding formula (ii) though, in Birmingham, scholarship or sponsorship from the industry is sometimes harder to develop.

Local authorities: The role of local authorities is two-fold. On the one hand, they are a key partner for universities and businesses to develop relevant funding opportunities for industrial PhDs and on the other hand, they contribute to the shaping of an appropriate policy/legal framework for applied research. In the context of the Birmingham local Hub, it is clear that the local authorities contribute significantly to enhancing the academia-business collaboration in a structured way via the creation of specific actions and initiatives in the region such as the Knowledge Transfer Partnerships (KTPs).

## **b. Analysis of Science-Business cooperation**

Across the four local Hubs, the most common forms of Science-Business cooperation (SBC) are the following: industrial doctorates including PhD studentship agreements, knowledge exchange and enterprises networks, knowledge and innovative technology transfer offices, incubators, commercialisation of publicly available research, co-funding schemes.

In the context of the European PhD Hub, efficient SBC supposes that structured collaboration and specific instruments have been put in place to facilitate the knowledge transfer activities. The University of Alcalá, Birmingham City University, Aristotle University of Thessaloniki and the University of Lodz have already established a dialogue

<sup>4</sup> Funding framework which includes funds from the government and/or university.

<sup>5</sup> Funding framework which is fully financed via the enterprise's funds.

with the business world via the organisation of local seminars and through the PhD Hub Platform which allows publication of calls for cooperation. Nevertheless, the state of play of Science-Business cooperation in each local Hub is also closely tied to the available resources in their own environment.

In some areas of collaboration, it is interesting to highlight that the knowledge transfer activities are already well established between universities and businesses. It is the case of the Birmingham Hub where several frameworks of collaboration have been developed, either by the university itself (Birmingham Knowledge Hub) or by the local and regional authorities (KTPs, KEEN, etc.). In the same way, the Lodz Hub ensures the global coordination of various Science-Business cooperation activities such as the commercialisation of science and technology through its already well-established Technology Transfer Center. In parallel, we can observe that the Alcalá and Thessaloniki Hubs find the need to further develop SBC in a structured way. In fact, SBC is, as of now, limited to different knowledge transfer activities that do not fully allow for in-depth cooperation (i.e. business partners invited as guest lecturers or speakers in PhD training courses/workshops).

The Thessaloniki Hub has identified further limitations to SBC in their environment which are i) the inadequate legal framework regarding tertiary education and its connection with the labour market, ii) the HEIs' lack of trust vis-a-vis businesses which are rather perceived as competitors than partners and iii) the skill mismatching and the relative absence of investment of academia in entrepreneurship and innovation. To remedy this situation, the areas of collaboration which are confronted with these limitations should look into developing specific body at the HEIs which would enhance cooperation between academia and business as well as foster entrepreneurship and innovation. The Lodz Hub, for instance, has set up a University Technology Incubator which supports the modelling of relations with the business environment and provides consulting and training services to their PhD students. Moreover, the discussion with the labour market is maintained on a continuous basis through the Business Councils, or in other words, regular and structured consultation meetings with business leaders of their area of cooperation which aim to develop close cooperation between theoreticians and practitioners.

### **c. Use of the PhD results in the industry sector**

An industrial doctorate is an alternative to the traditional PhD for students. They allow for a practical application of research results therefore making sure they are not doomed to be archived but actually find concrete applications. The use of the PhD results in the industry sector should contribute to the socio-economic growth of i) the company, ii) the sector in



which the research is conducted and iii) the regional, national and/or international community.

On an operational level, it is common knowledge that certain disciplines are highly and/or more easily applicable to industry, notably computer-science, engineering, medicine, sustainable development, accounting and finance, etc. It is therefore important to make sure that these research fields are prioritised to efficiently launch and run the PhD local Hubs. However, additional synergies between other disciplines and the industry's needs should be developed to ensure a comprehensive range of cooperation opportunities between PhD students and stakeholders from industry (companies, authorities, NGOs). This vision is shared by all local Hubs and will be implemented, as part of their strategies.

On a strategic level, the European PhD Hub partners have defined more clearly the objectives and the added value of improving the impact and the use of the PhD results in the industry. The knowledge triangle will create synergies between research, innovation and education by systemic and continuous interaction<sup>6</sup>. It will benefit both PhD students and HEIs in reducing the skills' mismatch between education and industry, support the intensification of the transfer of knowledge and the development of an entrepreneurial culture in the framework of academic PhD training programmes. The industry stakeholders will directly benefit from the application of PhD results via an improved R&D<sup>7</sup> and innovation capacity. The PhD students will bring about a modern vision into the industry and ensure the quality of the research results through well-oiled mechanisms of cooperation and support between the university and the company.

On a practical level, it is important that both HEIs and businesses take their responsibilities in terms of, and respectively, provision of theoretical and practical support. The quality supervision of industrial PhDs should be a shared responsibility among the stakeholders and shall be defined prior to the start of the PhD. For instance, in the Birmingham Hub, appropriate co-supervision is ensured by establishing the rules and responsibilities of each of the parties via a PhD agreement including project aims, objectives, duration, supervisors, materials, facilities, funding, publications, confidentiality and intellectual property terms and conditions. In addition and in relation to the aforementioned parameters, it is also to be stressed that confidentiality and intellectual property terms and conditions can vary depending on the local environment. At the Alcalá Hub, it is stated that Doctoral Schools have the flexibility to address this issue in the most convenient way for the two parties, however, in Thessaloniki, the absence of an updated legal framework is a threat to proper engagement of PhD students, researcher and academic staff in the industry sector.

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<sup>6</sup> Markkula, 2013, The knowledge triangle: Renewing the University culture. The Knowledge Triangle: Re-inventing the Future (eds. P. Lappalainen, M. Markkula), Aalto: Aalto University, pp. 11–32.

<sup>7</sup> Research and Development.

### 3. Conclusions

This document compiles the perspectives of the four local Hubs namely, Alcalá, Birmingham, Thessaloniki and Lodz in the context of the European PhD Hub. The overview of the strategies provided in this document collects and presents the key actors and aspects which intervene in building a coherent action plan towards a more integrated knowledge triangle and integrating a PhD Hub strategy in other institutions and organisations.

Even though the realities of the fields and of each local environment might diverge, we have been able to conclude that the most important aspects of a coherent strategy include the pro-active participation of all of the stakeholders, including PhD students, HEIs, Businesses and the local authorities. Empowering the stakeholders to take ownership of their roles and responsibilities, as described above, in different ways and in line with their needs is a key factor that will enable in-depth cooperation and quality PhD results.

Each local PhD Hub coordinator and/or initiator should have in mind that analysing their environment and in particular the legal/policy framework and socio-economic opportunities are a cornerstone to developing an efficient knowledge transfer scheme which mutually benefits all stakeholders. As the document highlights, specific attention should be paid to i) building structured cooperation frameworks between academia and business and ii) enabling synergies between funding opportunities offered by the business, university or the local, regional or national authorities.

When looking at the current state of play of applied research, the local Hubs identified the most frequent disciplines involved in the industry (as seen above). These disciplines should be the starting point to develop a coherent strategy which mobilises PhD students to get involved in the industry sector with proper co-supervision and a clear legal framework to define the use of the PhD results.

These four strategies are a full-fledged component of the overall development of the European PhD Hub project. They interlock with the overall results of the [University-Business cooperation \(UBC\) guide for doctoral studies](#) which tackles challenges found in UBC, especially in line with the implementation of collaborative doctoral programmes. They bring about an added value to the discussions which are ongoing with the business leaders and other partners of the local Hub during the [local seminars](#) and reinforce the impact of the [European PhD Hub platform](#) which has been designed to answer the need of a single resources for applied science.

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