

European PhD Hub

Investigation of cooperation opportunities with venture capital funds

European PhD Hub

Authors:

Nikos Giannoulidis (Euroconsultants S.A., Greece)

1. Introduction and Objectives

The European PhD Hub provides a portal and a network for matching research opportunities between early-stage Researchers and the industry/business cluster connected through the local hubs. The project efforts have been aimed at a) building the local hub communities, b) developing the portal and c) creating a framework for university-business and international collaboration in doctoral training and research.

The present report is the output of *Task 4.5: Investigating cooperation with Venture Capital funds* and aims:

- To examine how European PhD Hub objectives can be linked with venture capital and other type of public/private funding activities;
- To study the potential venture capital and other type of public/private funding opportunities available for cooperation;
- To investigate if European PhD Hub can evolve into a platform for venture financing.

2. Early-stage Researchers funding opportunities

This section examines the funding opportunities pertinent to **early-stage Researchers (PhD candidates, Post-Docs)** wishing to develop their innovative ideas with businesses in the framework of an industrial doctorate.

In general, financing opportunities can be private; public; or a mixture of such options.

Private funding in general

In general the following private financing opportunities are available depending on the stage of development of an idea, a product or service and/or a start-up business. Seed stage investments (<25,000\$) can be funded by the founders themselves, friends and family, while for large investments angel investors, or companies interested in exploiting the business idea may contribute with early stage investments (typically between 25,000\$ and 500,000\$). For later stage investments, venture capital funds typically provide amounts between 3 to 5 million \$.

Type of Funding	Description	Typical Range	Technology Readiness Level
Pre- Seed Funding	This stage typically refers to the period in which a company's founders are first getting their operations off the ground. The most common "pre-seed" funders	<25,000\$	TRL 3-6

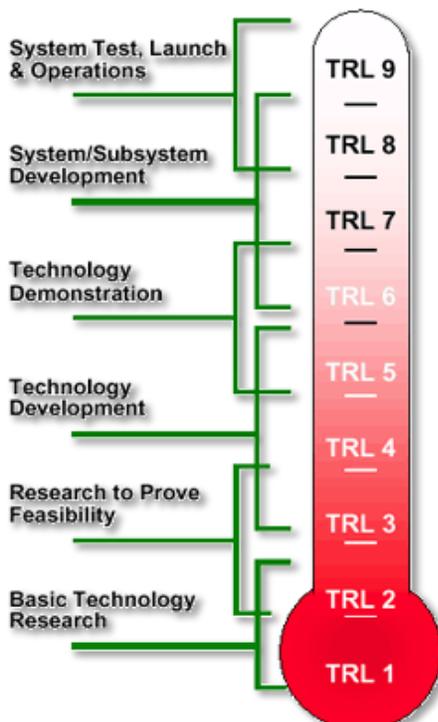
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Type of Funding	Description	Typical Range	Technology Readiness Level
	are the founders themselves, as well as close friends, supporters, and family.		
Seed Funding	This is the first official equity funding stage. It typically represents the first official money that a business venture or enterprise raises; some companies never extend beyond seed funding into Series A rounds or beyond.	~25,000-1,000,000\$	TRL 6-7
Venture Capital Funding/ Series A	Once a business has developed a track record (an established user base, consistent revenue figures, or some other key performance indicator), that company may opt for Series A funding in order to further optimize its user base and product offerings. Opportunities may be taken to scale the product across different markets. In this round, it's important to have a plan for developing a business model that will generate long-term profit.	1M-15M\$	TRL 7 and above
Venture Capital Funding/ Series B	Series B rounds are all about taking businesses to the next level, past the development stage. Investors help startups get there by expanding market reach. Companies are prepared for success on a larger scale and Series B funding is used to grow the company so that it can meet these levels of demand.	15M\$ and above	TRL 9



It is worth noting that:

- The pre-seed (proof of concept) stage involves the pre- incorporation phase with feasibility testing, technology/ product/process for commercialisation, prototyping and incubation. This phase mainly comprises products and technologies with a Technology Readiness Level between TRL 3 to TRL 6.
- The seed stage includes demonstration, low scale production or development of associated business applications of tested and validated products/technologies. This phase mainly comprises products and technologies with a Technology Readiness Level between TRL 6 to TRL 7.

- Venture Capital targets TRL 7 (System/ Subsystem development) and above¹.

Business Angels

Angels usually contribute much more than pure cash; they have industry knowledge and contacts that they pass on to the entrepreneurs, besides experience in starting and growing a company. Angels will often take non-executive board positions in the companies in which they invest and act as advisors to the startup team.

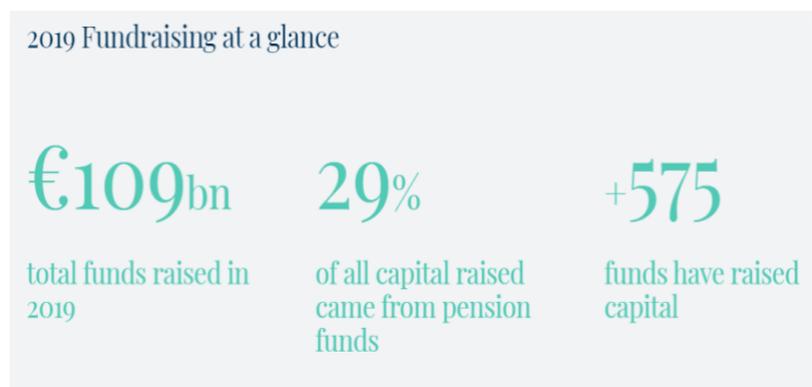
A large number of Business Angels are available. [EBAN](#), the European Business Angels Network comprises 150 member organizations in more than 50 countries and represents a sector estimated to invest 11.4 billion Euros a year.

Venture Capital

For larger scale funding, private equity and venture capital is more suitable. Apart from private equity and funding, VCs provide support in the form of specialist investment managers with knowledge of running companies which help to build better businesses by strengthening management, improving operations and expanding into new markets.

Vcs back entrepreneurs who have bright ideas but need finance and expertise to get their companies off the ground and grow.

[Invest Europe](#) is World's largest association of private capital providers representing Europe's private equity, venture capital and infrastructure investment firms, as well as their investors.

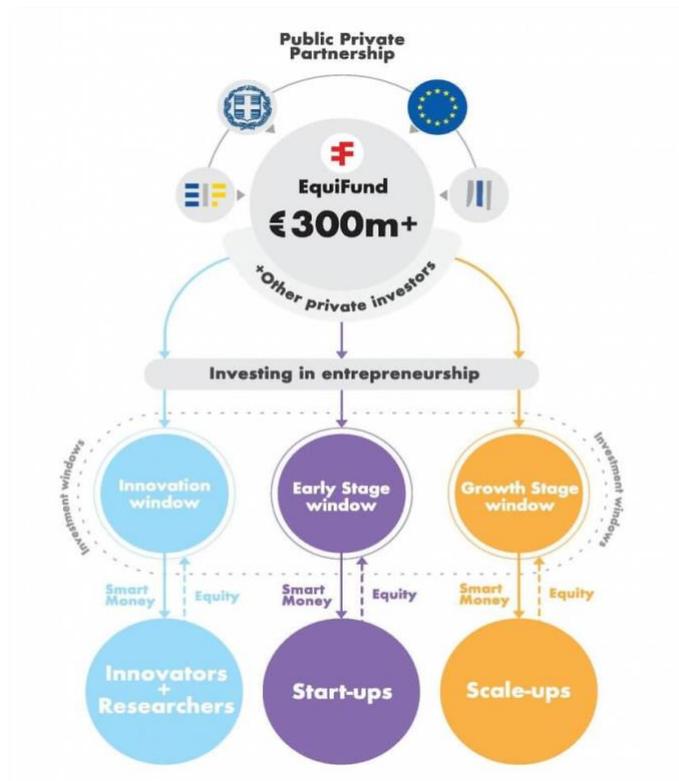


¹ European Investment Bank- InnovFin Equity,
https://www.eif.org/news_centre/publications/innovfin_technology_transfer.pdf

National Equity Funds

An additional opportunity for funding of innovative ideas developed as part of an Early-stage Researchers work is through National Equity Funds. An example is the Greek **EquiFund**, an public- private initiative created by the Hellenic Republic in cooperation with the European Investment Fund (EIF). EquiFund is co-financed by the EU, EIF, the Greek state and private funding. It shall mobilize investments of ~300 million \$ for innovators and researchers, start-ups and scale- ups.

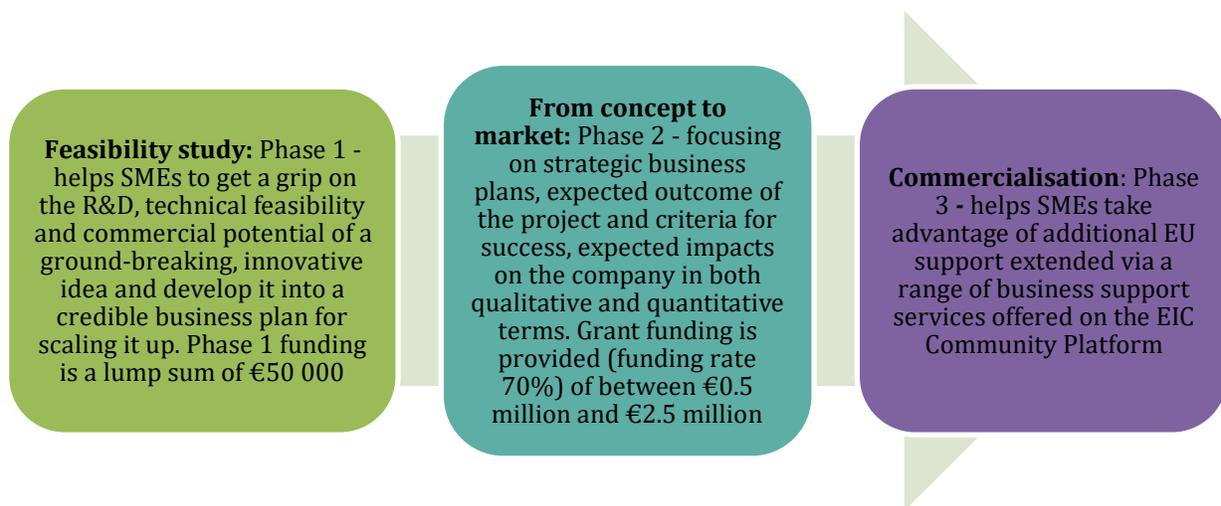
For innovators and researchers, it provides the so-called “innovation window” which targets entrepreneurs with a concept or idea that warrants development or researchers who believe their project will yield results. Accelerators and incubators can offer expertise and backing to help get your idea off the ground. Technology transfer funds can provide finance and experience in transforming research into a commercially viable proposition.



Current European Public funding

Early-stage Researchers (PhD candidates, Post-Docs) can typically be financed by national and European funds dedicated to research and innovation. The European Union’s **Horizon 2020** funding instrument (80 billion € over 2014- 2020 period) is the standard opportunity for public (and private funding) as it encompasses the majority of thematic areas, it has standardized and quite simplified procedures, it is open to research and industry alike and promotes international cooperation.

In particular, **Horizon 2020 SME Instrument** provides 3 billion euros over 2014-2020 to promote SME Innovation activities in a wide range of topics and 70% funding. The SME Instrument is suitable for innovative SMEs with the ambition to develop, grow, have an international impact; also established SMEs with high growth potential. It is important to note that it funds activities at TRL 6 or higher. The advantages of participating is ranking among the best European SMEs; ensuring visibility at a European and global level; benefitting from Business/management coaching, networking opportunities and Support for follow-up financing.



Marie Skłodowska-Curie Actions (MSCA) are grants available for all stages of a researcher’s career. Fellows include PhD candidates and those carrying out more advanced research. They encourage individuals to work in other countries and they promote collaboration and sharing of ideas between different industrial sectors and research disciplines. MSCA also backs initiatives that break down barriers between academia, industry and business. In addition, they reach out to the public with events that promote the value – and fun side – of science. The EU has set aside EUR 6.16 billion to be spent by 2020 on researcher training and career development.

<p>Individual Fellowships (IF)</p>	<p>IF provide opportunities for experienced researchers looking to give their career a boost by working abroad.</p>
<p>Research and Innovation Staff Exchange (RISE)</p>	<p>RISE funds short-term exchanges of personnel between academic, industrial and commercial organisations throughout the world. It helps people develop their knowledge, skills and careers, while building links between organisations working in different sectors of the economy, including universities, research institutes and SMEs.</p>
<p>Co-funding of regional, national and international programmes (COFUND)</p>	<p>COFUND provides organisations with additional financial support for their own researcher training and career development programmes.</p>
<p>Innovative Training Networks (ITN)</p>	<p>ITN drive scientific excellence and innovation. They bring together universities, research institutes and other sectors from across the world to train researchers to doctorate</p>

Future European Public funding

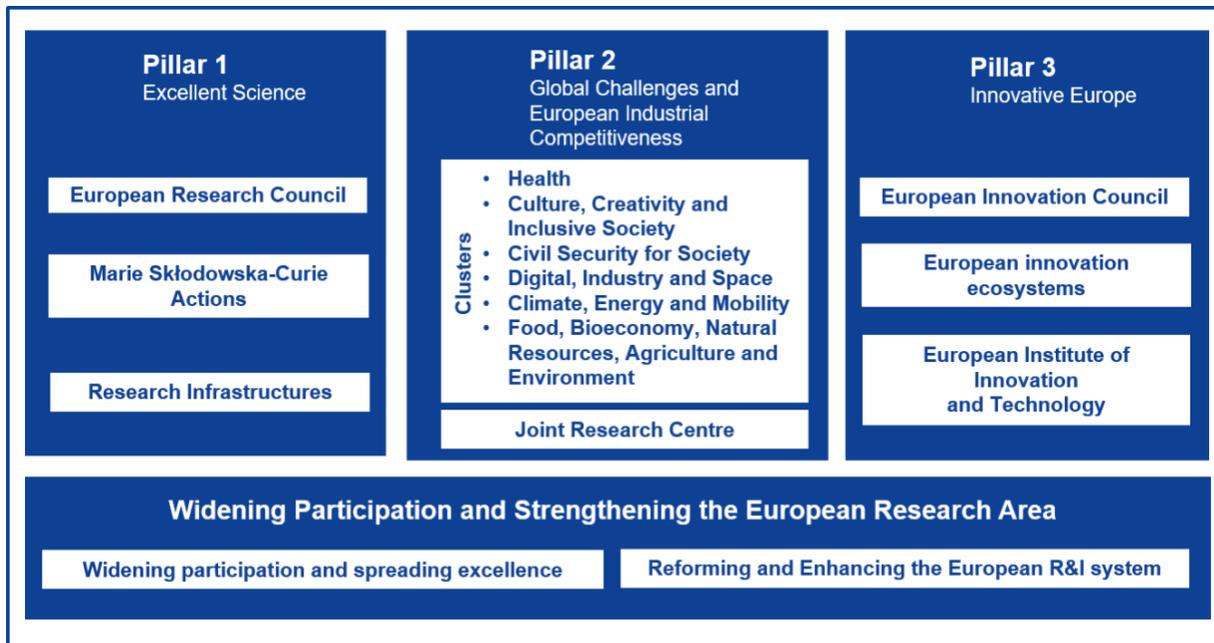
Horizon 2020 will be succeeded by **Horizon Europe**, an ambitious €100 billion research and innovation programme. The Programme is still in its design and development phase; it will focus in particular on the Global Challenges and European Industrial Competitiveness pillar of Horizon Europe. It will also cover the Widening Participation and Strengthening the European Research Area part of the programme as well as relevant activities in other pillars.

5 mission areas have been identified, each with a dedicated mission board and assembly. They will help specify, design and implement specific missions in Horizon Europe.

- Mission area: Adaptation to climate change including societal transformation
- Mission area: Cancer
- Mission area: Climate-neutral and smart cities
- Mission area: Healthy oceans, seas, coastal and inland waters
- Mission area: Soil health and food

Horizon Europe will support European partnerships with EU countries, the private sector, foundations and other stakeholders. The aim is to deliver on global challenges and industrial modernisation through concerted research and innovation efforts.

The Preliminary structure of Horizon Europe is as below:



3. Suitability of funding opportunities for early-stage Researchers

Based on the analysis of the funding opportunities presented above and their relevance with the European PhD Hub target beneficiaries, i.e. the Early-stage Researchers, it is considered that the most suitable tool to investigate is **Business Angels, National Equity Funds** and **Current and Future European public funding, most specifically H2020/ Marie Curie type instruments**. In particular:

- Average early-stage researchers require funding that is approximately in the range typically provided by **Business Angels** (seed phase) and they provide the type of hands- on support needed for the commercialization of an innovative idea;
- **National Equity Funds** are more accessible to researchers already active at a pre- commercial stage and willing to explore the national innovation funding ecosystem;
- **Current and Future European public funding**, in particular **H2020 SME instrument** and **Marie Skłodowska-Curie Actions** are ideal for co- financing research activities and for involving private businesses to promote industrial PhDs.

4. Cooperation Strategy

The following avenues are suggested for the linkage and promotion of the European PhD Hub to selected funding entities/mechanisms, including Business Angels, Venture Capital, etc.

Strategy	Who	How and when
Seeking links with the European Networks of EBAN and Invest Europe, possibly through their national members in the countries participating in the European PhD Hub (Greece, Poland, Spain, UK, Luxembourg/Belgium);	(Industrial) partners of the local hubs to provide access to national members of EBAN and through them with the central administration	M34-M35 of the Project
Promotion of the European PhD Hub, highlighting the benefits from cooperation, such as the fact that industrial PhDs with significant commercial potential are hosted in the platform;	EU and local partners	M35-M36 of the Project
Distribution of selected information about funding opportunities to the PhD network;	EU and local partners	M35-M36 of the Project
Invitation of national or European funding entities/ mechanisms to the PhD Hub activities (workshops, Innovation Fest, etc.) to further discuss cooperation opportunities.	EU and local partners	M35-M36 of the Project

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