Startups & Fundraising

A comprehensive approach for European neurotech ventures

Introducing the basics of startups' fundraising, including a list of +100 potential seed and early-stage investors for the Human Brain Project's and EBRAINS' spin-offs

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Abstract:	This report provides an overview of a startup's main funding stages, agents and instruments, particularized whenever possible to the particularities of ventures potentially spinning-off the Human Brain Project and its digital research infrastructure, EBRAINS. As a first introduction to the topic, the report explains the concept of startup and its differences from an established company, setting the startup definition used throughout the document. It then discusses the relation between startups and money, starting with a short survey of the top spending areas for startups. Following, the core part of the report introduces the main private and public funding agents and instruments available to European startups, to then provide a detailed description of the opportunities offered by each agent in the corresponding startup funding stage. Thereupon, several top selected private neurotech investors are briefly described, to finally conclude with a list of more than 100 potential investors in HBP's and EBRAINS' spin-offs.
Keywords:	HBP, EBRAINS, startups, spin-offs, fundraising, investors
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Introduction

Out of the various forms of technology transfer, such as publications, consulting or licensing (OECD, 2013) the creation of a spin-off – a startup stemming from a research result – is among the most popular ones (Wright et al., 2007). As evidenced by numbers, biotechnology startups are strongly supported by private capital nowadays, with European and US biotech ventures having raised the historic records of €15 billion and $72 billion in 2020, respectively[1] (Nuyken, 2021). Such buoyant context offers a promising opportunity for European neurotech startups and, in particular, for the Human Brain Project's and EBRAINS' spin-offs.

The Human Brain Project (HBP) one of the EU's Horizon 2020 FET Flagships, the biggest research initiatives ever funded by the European Union. Among its most outstanding outcomes is EBRAINS (EBRAINS, n.d.), a digital infrastructure that gathers an extensive range of data and tools for brain-related research: data and knowledge management services, brain atlases, brain modeling and simulation resources, neuromorphic computing technologies and medical data analytics, among others. An offer which sustainable scientific value has already been recognized through the inclusion of EBRAINS in the 2021 Roadmap of the European Strategy Forum on Research Infrastructures (ESFRI).

Among the challenges to be faced by any startup, including those spinning-off the HBP and EBRAINS, fundraising is one of the most complicated. Of course, and as will be explained, it is not the only difficulty to be tackled, but it is a challenge complex enough to justify a comprehensive report on the matter. What are the different stages of a startup's fundraising path? Who are the main investors (both public and private) in each step? Are there any specialized in bio- and neurotech ventures? These are some of the questions that we will answer in the following pages. All out, the interested entrepreneur should not overlook the rest of challenges associated with the creation and growth of a startup, for which we will refer the reader to existing bibliography.

This report is part of the HBP Innovation and Technology Transfer Node's efforts to foster the transfer of the Human Brain Project's results. Other services provided by the team include the development of roadmaps and foresight analysis of HBP's breakthroughs with market potential, training HBP staff on technology innovation and transfer matters and assisting them in the assessment of their technology's

[1] Venture Capital, follow-up financing and IPOs combined.

maturity[2], as well as in the preparation of exploitation plans. More information on the HBP Innovation and Technology Transfer Node can be found in our website:

https://www.humanbrainproject.eu/en/collaborate/innovation/

Among the large variety of technology transfer methods available nowadays, we decided to focus on the creation and growth of spin-offs because, as HBP draws closer to its end, its results become mature enough to undertake such ventures. It is not that the rest of transfer methods are less relevant, but that the opportunities offered by the startup world may bring large benefits and thus deserve careful attention. Furthermore, the complexity of the fundraising process and the immense landscape of possible investors justify the need to focus on the financial facet of startups. HBP has progressively laid the research and innovation foundations necessary for the generation of new spin-offs and, as the project reaches its completion, we cannot but support the creation and growth of further startups.

[2] Formally, Technology Readiness Level or TRL. See the HBP Technology Readiness Level Assessment guide (Velasco, 2020) for further information.

1. Concept of Startup

Let's take a moment to think about it: above all the existing noise around the concept of startup, would you be able to define it? To differentiate it from an established company? This is precisely the first distinction any entrepreneur should acknowledge.

A startup is an organization seeking to create, test, validate and improve its business model (hereafter, **BM**), in which fundraising is just one of its key elements. According to (Osterwalder & Pigneur, 2010), the BM of a company "*describes the rationale of how an organization creates, delivers, and captures value*". In other words, a BM is the mechanism by which a company creates value for itself by provisioning products (goods or services) in return for a financial profit. Behind such mechanism are the elements central to any business: something to sell and someone to buy it, the business plan (the strategy to implement the model), the budget, the human resources needed and the marketing and sales operations, mainly.

So how is a startup different from an established company? **A startup is a temporary organization in search of a repeatable and scalable BM**. Repeatable because we want to implement it successfully in as many markets as possible. Scalable because we want the BM to allow us to expand our production while avoiding an (unaffordable) increase in costs. On the other hand, an established company is an organization focused on executing a BM already proven successful. **Search versus execution of a successful business model**: that is the **fundamental difference between a startup and a company**. Furthermore, this is also why a startup can no longer be considered as such since the moment it builds an effective BM.

Scalable BM simple example

A group of child scouts would like to sell cookies to fundraise their next trip. Once they have all the ingredients and tools necessary to bake them, they wonder how they could maximize profit. After some discussion, they realize that baking more than one tray of cookies simultaneously will save them time and reduce the energetic cost per cookie baked. An increase of production with no associated increase in costs; an example of scalable BM.

For the purposes of this report, the distinction between startup and established company is set. However, nothing is ever black and white; it is worth noting that other conceptualizations exist. For example, the American startup accelerator

YCombinator defines it as a "*company that is built to grow fast*" (Ralston, n.d.). To us, this definition can only be regarded as additional to the one we will be using, because it misses the key aspect of having a validated BM before undertaking the targeted growth. An undesired mindset responsible, for example, for the burst of the Dotcom Bubble in 2001 (Hayes & Williams, 2019).

For completeness, notice that when both definitions are combined a new type of venture emerges: that with a business model in place and looking forward to growing rapidly. The organization just described is usually known as a *scaleup* or, formally, as a *high-growth enterprise*[3] (Eurostat & OECD, 2007). Because a scaleup will probably face the need to redefine its BM as it grows, thus leading to new testing and validation, it may resemble a startup[4]. However, **for the purposes of this report, the distinction between startup and scaleup will be kept**, as it allows for a clearer definition of startup. Indeed, one that we believe will fit better the ventures spinning-off the Human Brain Project in the months to come.

[3] According to the Eurostat-OECD Manual on Business Demography Statistics (Eurostat & OECD, 2007), scaleups – technically, "high-growth enterprises" – can be defined as "All enterprises with average annualised growth greater than 20% per annum, over a three year period (...). Growth can be measured by the number of employees or by turnover".

[4] This is probably the reason behind YCombinator's startup definition.

2. Money & Startups

2.1. Top spending areas for startups

The reader can now understand why fundraising is so important: because of the notable amount of resources needed to run the startup's operations, those that will eventually lead to the successful business model desired. Attempt after attempt, entrepreneurs will define and redefine their startup's business model, validating some of its elements, discarding others and discovering new ones that may enrich their venture. Attempt after attempt, however, they will also invest the resources available and find themselves in need for more.

At this point, it may be of interest to the unexperienced reader to briefly describe **how does a startup usually spend its resources**, for what we will use the **Brex Founder Spending Report** (refs. (Brex, n.d.) and (TechCrunch Brand Studio, n.d.-b)), being Brex an American financial service and technology company. This report uses Brex's customers usage data; early- to mid-stage tech startups together with an increasing number of ecommerce and life sciences companies. The presence of the latter allows us to consider the Brex's report to not be completely disconnected from potential HBP spin-offs and, thus, to serve as an approximate benchmark to be considered.

Startup fundraising takes place in rounds, understood as periods of operation covered by the funding raised at the beginning of each cycle. Luckily enough, the Brex report considers the three first ones that any startup – and, thus, any HBP spin-off – needs to face: the *pre-seed*, the *seed* and the *series A* rounds (each fundraising stage, along with its corresponding agents and instruments, will be further explained in later sections of this report). Furthermore, it does so through a top-down analysis, from which we first discover that the median monthly burn rate (money spent / month; 1st half of 2019) is of $18.4k for Brex's pre-seed client portfolio, of $117.7k for its seed customers and of $469.3k for those already raising series A funding. Considering HBP spin-offs will be focused on neurotech and feeding from the European capital market, it could be presumed that funds raised will be lower than those indicated in the Brex report. However, data on relative spending may indeed apply.

The same report (Brex, n.d.) shows that cloud computing and advertising are among the top startup expenses, with Brex startup customers spending more than 10% of their budget on cloud services and nearly 20% on advertising and marketing. Such expenditure is mainly capitalized by Amazon Web Services, for the former; and, in the case of the latter, by Facebook (60% of Brex startups' advertising and marketing expenditure, approx.), followed by Google (30% of that

same expenditure, approx.). Other than cloud computing and advertising, the main utilities used by startups to run their operations include CRM (Customer Relationship Management) software, where HubSpot (*HubSpot*, n.d.) and Salesforce (*Salesforce*, n.d.) dominate the startup market; coworking spaces; LinkedIn and Indeed (*Indeed*, n.d.) as recruiting tools; and Atlassian (*Atlassian*, n.d.) for task management. Also, Brex startups prefer Zoom (*Zoom*, n.d.) for remote conferencing and the Adobe suite tools (*Adobe Creative Cloud*, n.d.) for their design needs.

Down to numbers (TechCrunch Brand Studio, n.d.-a), anonymized Brex usage data can provide valuable insights on their customers spending profile:

Brex Startup Portfolio Expenditure Breakdown

Expenditure / Concept	Less than $25,000 per month spend	Between $25K and $50K per month spend	Between $50K and $100K per month spend	Between $100K and $250K per month spend
Ads	$ 6.530	$ 4.243	$ 15.034	$ 13.935
Software	$ 1.857	$ 2.126	$ 3.001	$ 4.155
Servers	$ 2.603	$ 3.765	$ 6.052	$ 7.151
Travel	$ 2.572	$ 3.765	$ 3.525	$ 7.083
Events	$ 1.050	$ 1.119	$ 1.170	$ 1.595
Ridesharing	$ 479	$ 525	$ 631	$ 666
Coworking	$ 1.839	$ 2.042	$ 2.199	$ 4.201

Table 1. Brex Startup Portfolio Expenditure Breakdown
(taken from (TechCrunch Brand Studio, n.d.-a)).

Also, if we now focus on the startups' toolkit previously described, Brex data show that pre-seed ventures spend monthly, on average, $91.38 in their CRM, $21.39 in telephony, $34.64 for design and $42.25 in task management. Therefore, the CRM service is the biggest expenditure among those four utilities for pre-seed startups. The same happens with seed startups, which spend on average $148.56 in CRM, $45.13 for telephony, $53.80 in design and $101.78 for task management. A quick comparison between both stages is enough to spot task management as the expense that increases the most, understandable as the venture's team grows and requires further coordination mechanisms.

2.2. Startup fundraising: stages, agents and instruments

Once introduced the main commonalities on which startups spend their resources, let's explore when, from who and how do they raise those funds. As already noted, startup fundraising takes place in rounds, understood as periods of operation covered by the funding raised at the beginning of each cycle. In this section the *pre-seed*, *seed* and *series A* rounds, along with each stage corresponding agents and instruments, will be discussed. A general overview of the three, stages, agents and instruments, is provided in Figure 1 (next page).

2.2.1. Basic concepts (I): agents

Among the main **agents** that take part in a startup's fundraising path, several typologies can be clearly differentiated. On the **private sector** level:

The first funding agents of a startup are the venture's **founders and their *family, friends and fools*** (the so called 3F's), people whom founders convince to support them in the first steps of their business journey.

The second type of private investor to come into play are ***business angels*** (hereafter, BAs). A business angel is a "*private individual, often with a high net-worth, and usually with business experience, who directly invests part of their assets in new and growing private businesses. Business angels can invest individually or as part of a syndicate where one angel typically takes the lead role*" (*Business Angels | EC Policy Area*, n.d.). Business angels are among the largest sources of private funding for startups, and thus contribute to economic growth and technological advancement (*Business Angels | EC Policy Area*, n.d.).

Venture capital (hereafter, VC) is funding purely designed to grow a business, and thus normally provides the highest level of funding in the startup market (Morris et al., 2009). A VC fund is usually a company composed by two legal entities: one for management and the fund itself. The latter is nurtured by investors such as high net-worth individuals, banks, pension funds, insurances, etc., which take a high risk and expect a correspondingly high return. On the other hand, the goal of the management company is to attract such investors to the fund, to screen and invest in promising opportunities, to add value to those investments and, finally, to harvest gains. Thus, the management acts as an intermediary between the fund's money and the VC's portfolio companies (*Understanding Venture Capitalists: How to Get Money for Your Start Up | EdX*, n.d.).

Other private funding agents include private equity firms (like VCs but focused on mature companies), banks, hedge funds, etc. Because their usual stage of investment starts after series A, they will not be addressed in this report.

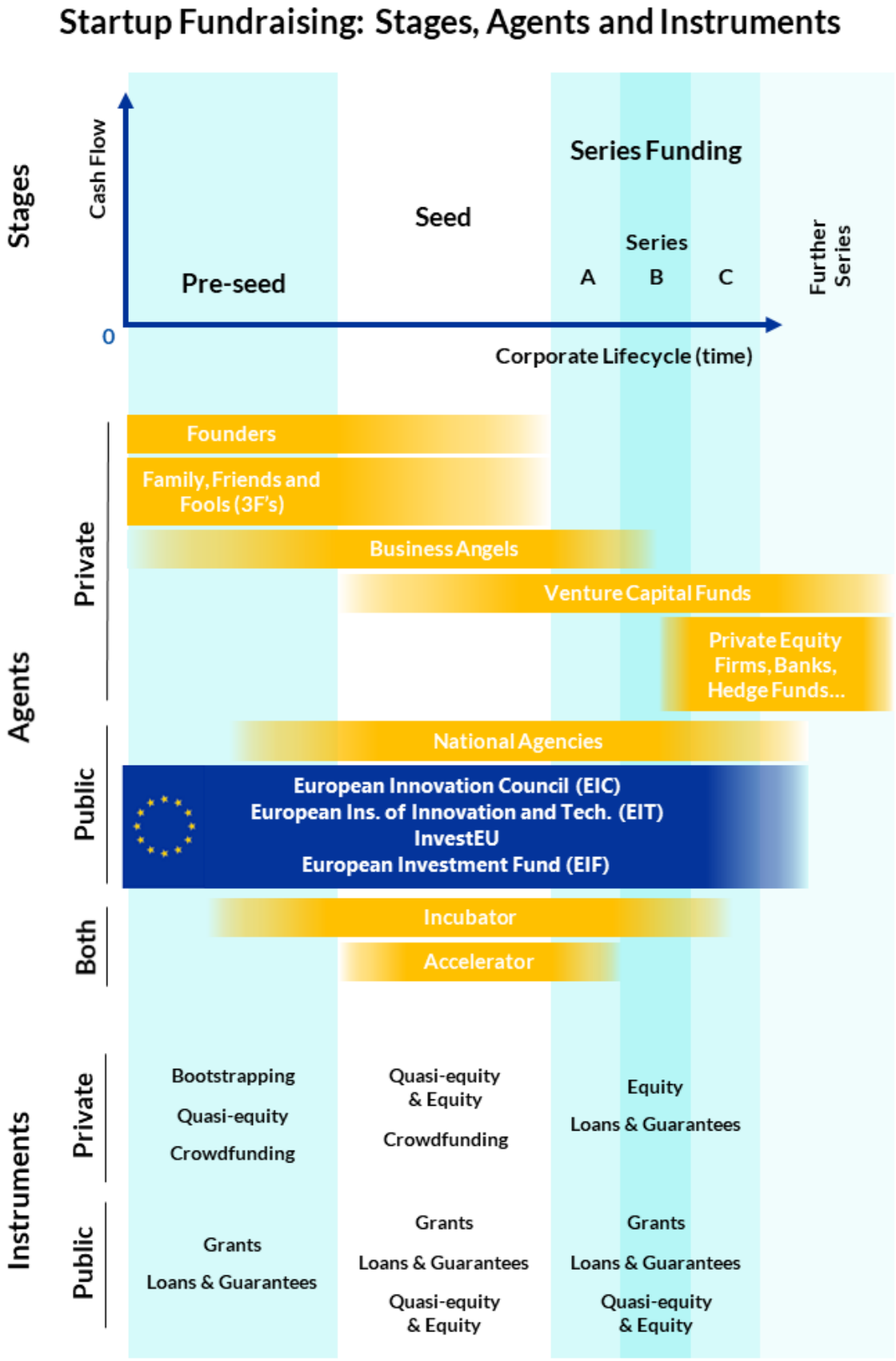

Figure 1. Startup main fundraising stages and corresponding agents and instruments, particularized to the European technology market.

Among **public funding agents**, those more relevant for HBP startups at the **European level** are:

The **European Innovation Council (EIC)**. The EIC is one of the initiatives under Horizon Europe's Pillar III, *Innovative Europe* (*Horizon Europe | European Commission*, n.d.). With a budget of €10.1 billion, its goal is to support innovation throughout the lifecycle of technology, "*from early stage research, to proof of concept, technology transfer, and the financing and scale up of start-ups and SMEs*" (EIC, n.d.). Depending on the technology's stage, the EIC offers different funding instruments, from grants to equity passing through blended finance (European Commission, 2022a). We will further explore each option available (*EIC Pathfinder*, *EIC Transition* and *EIC Accelerator* calls) framed in the corresponding fundraising stage of the startup.

The **European Innovation and Technology Institute (EIT)**. The EIT, even though also an integral part of Horizon Europe's Pillar III, is an independent EU body which mission is to strengthen Europe's ability to innovate. The core of the EIT are its *Knowledge and Innovation Communities* or *KICs*: "*long-term European partnerships among leading companies, research labs and higher education* [institutions], (…) *each dedicated to finding solutions to a specific global challenge*". With this aim, each thematic KIC offers education opportunities such as master and PhD programs, business creation and acceleration services and support to innovation driven research projects (*EIT at a Glance | EIT*, n.d.). From the already existing KICs, the two most related to HBP are the EIT Health and EIT Digital communities, which business creation programmes will be further explored framed in the corresponding fundraising stage of the startup.

At this point, it should be mentioned that the EIC and the EIT are "*progressively increasing their collaboration and synergies*", such as implementing a *FastTrack* process for EIC beneficiaries in EIT KICs (European Commission, 2022a).

InvestEU. InvestEU is the Union's programme which has brought together, under a single vehicle, the various financial instruments previously available to support investment in the EU. Grounded on a budgetary guarantee of €38 billion funded by the Union[5], the InvestEU Fund will be implemented through financial partners. These, on top of the funding provided by the EU, are also expected to contribute an additionally €9.5 billion in risk-bearing capacity, raising the total guarantee to €47.5 billion. All in, InvestEU is predicted to mobilize at least €650 billion in total investment across Member States (30% of which will contribute to climate objectives) (*Qs & As | InvestEU*, n.d.).

[5] In particular, from NextGenerationEU resources and the MFF 2021-2027.

For HBP spin-offs[6] the relevant InvestEU financial partners are the startups' "*local commercial or public banks whose financial products are covered by the EU guarantee in their country or region*", through which they can be informed if a particular funding programme is covered by the InvestEU Fund (*How to Get Financing | InvestEU*, n.d.). **All local financial intermediaries under EU programmes, including those of InvestEU**, **can be found on:**

https://europa.eu/youreurope/business/finance-funding/getting-funding/access-finance/index_en.htm

But from what parts of InvestEU could an HBP startup benefit? InvestEU targets four policy areas: *sustainable infrastructure* (€11.5 billion EU guarantee); *research, innovation and digitization* (€11.25 billion EU guarantee); *SMEs* (€11.25 billion EU guarantee) and *social investment and skills* (€4 billion EU guarantee) (*Qs & As | InvestEU*, n.d.). From these four areas, several realms may be of interest to incoming HBP spin-offs, as their activity could be framed in some of them: from the sustainable infrastructure one, the digital connectivity dimension; from the research, innovation and digitization area, the research and innovation domain, projects taking research results to the market and those related to artificial intelligence, for example; from the social investment and skills area, projects related to education, universities, hospitals, healthcare, long-term care or accessibility. Finally, the SMEs area of InvestEU is meant to facilitate access to finance for SMEs, reason why it could also be of interest for HBP startups (EC, 2018).

The **European Investment Fund (EIF)**. Among the financial partners of InvestEU, which include international financial institutions active in Europe and National Promotional Banks, the main strategic partner is the European Investment Bank (EIB) Group, which successfully implemented and managed EFSI (the European Fund for Strategic Investments, seed of InvestEU) (*Qs & As | InvestEU*, n.d.). In particular, the main investment vehicle devoted by the EIB to InvestEU is the European Investment Fund (EIF).

In short, the EIF is a specialist provider of risk finance which goal is to benefit SMEs across Europe. With this aim, it offers targeted financial products (equity, debt products) to intermediaries such as banks, guarantee and leasing companies, micro-credit providers and private equity funds, who then invest in SMEs. The funds mobilized range from those provided by the EIB, the European Commission, EU Member States and other third parties to the EIF's own resources (*Who We Are | EIF*, n.d.).

[6] As for any small mid-cap, SME and social or micro-enterprise.

Alongside European public funding agents, EU Member States national and regional funding agencies also play an important role in ensuring startups financing. However, such immense landscape of national and regional agents falls out of the scope of this report and will therefore not be addressed.

Transversal to both private and public funding agents are **accelerators and incubators**. According to (Cohen, 2013), even though both accelerators and incubators are programs that "*aim to help nascent ventures during the formation stage*", they differ in five key aspects: duration, cohorts, business model, selection and education and network development – not regarding location, *on site* in both cases. See Table 2 for a summarized comparison.

	Accelerators	**Incubators**
Duration	3 months	1 to 5 years
Cohorts	YES	NO
Business Model (of the program)	Investment, can also be non-profit	Rent; non-profit
Selection	Competitive, cyclical	Non-competitive
Venture Stage	Early	Early or late
Education	Seminars	Human resources, legal
Mentorship	Intense, by self and others	Minimal, tactical

Table 2. Key differences between accelerators and incubators.
Taken from (Cohen, 2013).

- From the five differences indicated above, the fundamental one seems to be the **limited duration of accelerator programs**, which:
    - reduces codependency between ventures and accelerators;
    - forces startups to face the selection mechanisms of the market, leading to quicker growth or quicker failure[7]; and
    - focuses founders' attention.

  On the other hand, sustained support provided by incubators may help ventures to develop more easily within the incubator's frame, but with the

[7] Quicker failure should not be regarded as a negative result: if a venture is to fail because its proposal does not work, earliest failure is the best possible outcome. It will save resources from all stakeholders, such as founders' time and talent or investors' money.

associated risk of not being able to survive outside such shell if it does not resemble the market well enough (Cohen, 2013).

- Regarding cohorts (also called *batches*), this accelerators' selection scheme, competitive[8] and cyclical, fosters the creation of strong bonds between funders of the same cohort, "*helping and motivating each other during the program*" (Cohen, 2013).

- On the business model side, accelerator programs are normally privately owned and take an equity stake in the ventures participating in the programs (some of its managers even provide additional funding as business angels). On the other hand, most incubators are publicly owned, make their business out of ventures' rent and fees (which they receive in exchange for office space and administrative support services) and rarely have their own investment funds. It is noteworthy that incubators refer to their housed ventures as "*tenants*", while accelerators do so as "*portfolio companies*"; a semantical difference revealing of the underneath mindset of each type of program (Cohen, 2013).

- In relation to education, mentorship and network development, these are "*cornerstones of accelerator programs and often a primary reason that ventures participate*" (Cohen, 2013).

Examples of medtech accelerators are MedTech Innovator (*MedTech Innovator*, 2022), the largest accelerator of medical devices in the world; Nex Cubed (*Nex Cubed*, 2022), for digital healthcare solutions in the fields of data, analytics and AI, among others; the Cedars-Sinai program (*Cedars-Sinai Accelerator*, 2022), which offers access to all aspects of the healthcare system; or the Medical Innovations Incubator (*MII GmbH*, 2022), which offers both an accelerator program and incubation services for medtech startups.

2.2.2. Basic concepts (II): instruments

To define and describe the **funding instruments** available to startups, this report will mainly follow the glossary elaborated by the European Commission on financial instruments (European Commission, 2015). Accordingly, the three main types of funding instruments are: **debt, equity and quasi-equity.**

[8] Acceptance rates for some of the world's top accelerator programs may be as low as one percent of applicants (Cohen, 2013).

Debt instruments can be either loans or guarantees:

- A **loan** should be understood as an "*agreement which obliges the lender to make available to the borrower an agreed sum of money for an agreed period of time and under which the borrower is obliged to repay that amount within the agreed time*" (European Commission, 2015). In relation to startups, tailored loans may be useful when banks' lending terms are unaffordable to the borrower. Such loans specifically designed for startups may offer lower interest rates, longer repayment periods or reduce the collateral burden associated to the loan itself, for example (European Investment Bank, 2015).

- A **guarantee** is a "*written commitment to assume responsibility for all or part of a third's party debt or obligation or for the successful performance by that third party of its obligations if an event occurs which triggers such guarantee, such as a loan default*" (European Commission, 2015). Guarantees normally cover other instruments, such as loans.

  Guarantees can be either **capped or uncapped**, where the existence of such cap would limit the indemnity received by the lender to a pre-defined percentage or amount of the debt covered. It is also worth noting the existence of **counter guarantees**, which allow a guarantor to seek reimbursement from the guaranteed borrower in case the former has to pay a claim made by the lender as a result of a borrower default (European Investment Bank, 2015).

Equity refers to the "*provision of capital to a firm, invested directly or indirectly in return for total or partial ownership of that firm* [(shares)] *and where the equity investor may assume some management control of the firm and may share some of the firm's profits*" (European Commission, 2015).

The return on investment, which depends on the growth and profitability reached by the startup, is earned through the distribution of dividends or the sale of the acquired shares to another investor, in a process called *exit*[9] (European Investment Bank, 2015). In relation to exits, it is noteworthy that equity is often referred to as *private equity,* not because investors are limited to private entities, but because the startup's shares dealing is restricted; doesn't happen on a stock exchange market (such as NASDAQ or NYSE, for example).

[9] When an exit involves selling an investor's holdings with no restrictions on who can buy them, such exit is called *public offering*. In fact, one of the most important milestones of a company (at this stage, not anymore a startup) is its initial public offering (IPO): the moment it is first listed on a stock exchange.

Once equity and debt have been explained, the reader is now ready to understand quasi-equity. **Quasi-equity** (also known as ***mezzanine capital***) refers to financial products "*usually structured as investments where financial return is a percentage of future revenue streams*" (European Investment Bank, 2016). There are three main types of quasi-equity instruments: subordinated loans, convertible bonds and preferred stocks.

- **Subordinated loans** are those with a lower repayment priority than normal (also called *senior*) loans. In other words, holders of subordinated loans are the last to be repaid in case of a borrower default. In that event, subordinated loans also entail a higher risk of loss than senior loans, increased by the fact that no collateral security mechanism is required for this kind of instrument. In return, however, interest rates are higher, so to cover the higher risks. Examples of subordinated loans include interest payments and capital repayments (European Investment Bank, 2015).

- **Convertible bonds** (also called ***convertible notes***) are **one of the most common funding instruments used by startups nowadays**. **Basically a loan designed to be payed with equity**, convertible notes contain the amount lent, the interest rate to be paid and a maturity date (when the loan, including the accrued interest, should be repaid). Usually, they also include a **negotiable discount and/or cap**, an exclusive benefit for early investors. These compensations entail paying a lower price per share, let it be in relative terms, through a percentage discount, or in absolute terms, with the cap establishing the maximum price per share that the owner of the note will pay. It is important to stress that, if not exchanged for equity, convertible debt may be called at maturity to be repaid with earned interest (Ralston, n.d.). These bonds, however, usually entail lower interest rates than normal loans, in order to reduce to number of shares for which they can be traded (European Investment Bank, 2015).

  A particular form of convertible note, widely used nowadays in Silicon Valley, is the *Simple Agreement for Future Equity* or *SAFE*. A SAFE is a convertible note that lacks the interest rate, maturity and repayment requirements; simply involving the investment amount, the cap and the discount, if any (Ralston, n.d.).

- **Preferred stocks** are "*stocks that entitle the holder to a fixed-rate dividend, paid before any dividend is distributed to holders of ordinary shares*". If a company is terminated, proceeds resulting from the liquidation of assets will be first received also by preferred stock shareholders (over ordinary ones) (European Investment Bank, 2015).

Other important funding instruments to be considered include bootstrapping, crowdfunding and, of course, grants. For the latter is widely known by the scientific community, we will only describe the two former ones.

Bootstrapping, as per the US Chamber of Commerce, refers to "*the process of starting a company with only personal savings, including borrowed or invested funds from family or friends, as well as income from initial sales. Self-funded businesses do not rely on traditional financing methods, such as the support of investors, crowdfunding or bank loans*" (Fallon, 2021). Apart from the owners' savings, funds borrowed from their family and friends and initial sales, bootstrapping funding may also include debt acquired through credit card; issuing *sweat* equity (that given to employees in exchange for their effort, instead of or as a complement to a reduced salary); minimizing operating costs and the available inventory; and securing public subsidies, such as cash payments or tax reductions (Harvey, 2021).

The main advantage of bootstrapping, founders' retaining almost complete ownership and control of their business, is inherently related to its main disadvantages: high risk of failure, many times due to cash flow issues; reduced visibility and growth opportunities compared to being sponsored by business angels or VC funds; and founders' high personal stress (Cremades, 2019).

Crowdfunding, following the definition given in the *Guide on crowdfunding* provided by the European Commission (European Commission, n.d.-c), enables to "*collect money from a large number of people via online platforms*", and subsequently provides valuable market insights as well as access to new customers.

With investments that can range from as little as $10 to millions of dollars, fundraisers are usually charged a fee by the crowdfunding platform only if the campaign is successful, which is measured on an all-or-nothing basis: if the targeted amount is finally reached, fundraisers will be able to collect those funds and the crowdfunding platform will receive its compensation; otherwise, all investors will get their money back. There are several crowdfunding modalities, being peer-to-peer lending, equity crowdfunding and rewards-based crowdfunding the three most used by startups (European Commission, n.d.-b):

- **Peer-to-peer lending** is analogous to borrowing money from banks, except that in this case there can be hundreds of lenders who, of course, expect their money to be repaid with interest.
- **Equity crowdfunding** is similar to how shares are traded in the stock exchange. If a little more restricted, it may then resemble venture capital.

- **Rewards-based crowdfunding** consists on individual donations in exchange for a non-financial reward, such as goods or services, which will be delivered at the time convened with – normally, set by – the startup.

Other crowdfunding models include donation-based crowdfunding, profit- / revenue-sharing, debt-securities crowdfunding and combinations thereof. For a description of them, we refer the reader to (European Commission, n.d.-c).

At this point, and once explained the basics of startups' funding agents and instruments, let's describe a venture's three first fundraising stages: the pre-seed, seed and series A rounds.

2.2.3. Pre-seed stage

The pre-seed stage of a venture comprises the research, assessment and, if appropriate, the development of its business concept (Morris et al., 2009). The funding involved at this stage is therefore targeted to lay the groundwork that will eventually enable the startup to build a (first version of a) product.

At the private level, the main funders of a venture in its pre-seed stage are its **founders and their friends, family and engaged fools** (the already mentioned 3F's). If the idea to be developed is promising enough, some business angels may also find it interesting to invest on the venture, even though most of them generally prefer to enter at a later (seed) life stage of startups. In either case, the main funding instrument used at this stage are convertible bonds, usually capped to provide an exclusive benefit for early investors (Ralston, n.d.). Funding raised at this point is of the order of thousands of euros[10], and may not allow founders to work full-time on the project (Graham, 2005). Additionally, if marketed well enough, a crowdfunding campaign may help founders raise a similar amount to that gathered from their 3F's, even if the idea is still in its infancy. In any case, such funding will probably not be enough for a research-intensive startup such as the ones potentially spinning-off HBP, which funding volume needed and high associated risk will normally be assumed only by the public sector.

At the public level, the main funding instrument used by both European and national agents are grants. Even though some – almost all, national – agents may also offer loans, technological startups at this stage very rarely choose to borrow money, for the risk of failure and subsequent default, to be covered by the founders, is extremely high. Let's now review the main calls and programs offered at the European level for technological startups in their pre-seed stage.

[10] Considering founders' 3F's are not rich, in which case differentiating them from business angels could be difficult.

The main EIC instrument of interest for a startup in its pre-seed stage is the **EIC Pathfinder** call which, as happens with the other EIC calls, is structured into two modalities: the *Open* and the *Challenges* one (European Commission, 2022a). The **EIC Pathfinder Open** modality is aimed at "*consortia of at least three different independent legal entities*" (such as startups, universities and other research organizations and industry) established in at least three different eligible countries[11]. Support to selected proposals will then be channeled through grants of up to €3 million, being the expected result a proof of principle / validation of the scientific basis of a breakthrough technology (TRL[12] 1 – 4). In 2022, this call's deadline was May 3rd, and has a total indicative budget of €183 million.

The **EIC Pathfinder Challenges**, on the other side, admits the same applicants as the EIC Pathfinder Open as well as single applicants or small consortia (two partners). Among the challenges to be tackled covered by this call are:

- carbon dioxide and nitrogen management and valorization
- mid-long term, systems-integrated energy storage
- cardiogenomics
- healthcare continuum technologies
- DNA-based digital data storage
- alternative quantum information processing, communication and sensing

Thus, some HBP spin-offs could find it interesting to apply to the grants offered by this call, of €4 million (or more, if properly justified). In 2022, this call's application deadline is set for October 19th and has a budget of €167 million.

It is noteworthy that spin-offs which developments reach a TRL of 4, almost 5, could also be interested in the EIC Transition call, described in section *2.2.4. Seed stage* of this report.

Regarding the **EIT**, and more specifically the **EIT Health** community, two programs may be of great interest to HBP's research groups and their eventual spin-offs (European Institute of Innovation & Technology, 2022):

- The ***Wild Card* program**, an annual, challenge-driven startup competition. It includes a first, one-month stage where accepted teams sharpen their proposals; a second, 9-week, part-time acceleration program for the eight teams who make the first cut and a final investment of up to €1.5 million for the two most promising ventures of each batch (EIT Health Wild Card,

[11] EU Member States, countries associated to Horizon Europe and low- and middle- income countries according to the Horizon Europe Programme Guide (European Commission, 2022b).
[12] Technology Readiness Level, a measurement of a scientific or technological development's maturity. See the HBP TRL Assessment guide (Velasco, 2020) for further information.

2022a). Incubator services may also be provided (EIT Health Wild Card, 2022c).

Each year, Wild Card selects two challenges in which their participants should focus, being Early Detection of Cancer and Mental Health the ones chosen for 2022. Other past topics include AI in Diagnostics (2018), Mental and Brain Health (2019), Digital Biomarkers (2019), Digital Therapeutics (2020) and Pain Management (2021) (EIT Health Wild Card, 2022b); of clear interest for HBP spin-offs.

- Several **bootcamps** (EIT Health, 2022a), including:
    - The *Healthy & Active Ageing bootcamp*, which provides "*custom business training and product validation with end users*";
    - The *MedTech bootcamp*, which "*provides focused support and matchmaking for European early-phase start-up teams with ideas in the field of medical technology*";
    - The *Interseed bootcamp*, focused on "*digital solutions* [that] *can help improve healthcare industries processes*" and aimed at bridging the gap between pharma and life science industries, patients and digital solution providers.

    Applications for these three must be submitted before June 27th, 2022.

    - The *Patient Innovation bootcamp*, to support patients and caregivers develop and scale-up solutions to the needs imposed by the condition suffered / assisted.
    - The *Reactor bootcamp*, focused on launching and accelerating the adoption across Europe of medical imaging and big data analysis solutions.
    - The *Women Entrepreneurship bootcamp*, which "*connects women-led and co-led start-ups with access to a network of mentors across Europe*".

    Applications for these last three are already closed, but they are included for the reader to be aware of their existence.

On its part, the **EIT Digital** community offers two initiatives of potential interest to HBP's pre-seed spin-offs (European Institute of Innovation & Technology, 2022):

- The ***Innovation Factory***. With the aim of delivering digital innovations to the market through product launch and venture creation, Innovation

Factory's partners support selected entrepreneurial teams with their expertise, technology and investments (EIT Digital, 2022b). Digital wellbeing is considered to be a strategic focus area of this program, reason why it may be of interest to HBP spin-offs.

- The ***EIT Digital Venture Program***, which supports European entrepreneurs[13] to develop a Minimum Viable Product (the first, simplest version of the product to be commercialized). The program includes up to €25,000 of financial aid, mentoring and support to find a first investor (EIT Digital, 2022c).

For the skeptical reader wondering of the EIT Digital does indeed value neuro-related ventures, note that several neurotechnology startups were among those that reached the final round of the EIT Digital Challenge (described in section *2.2.5. Series A stage* of this report) (EIT Digital, 2022a).

Following with public sector funding for pre-seed startups, and as already indicated, we refer the reader to the website:

https://europa.eu/youreurope/business/finance-funding/getting-funding/access-finance/index_en.htm

in order to explore **InvestEU's opportunities** available in the venture's country. Note that such opportunities can be filtered by region, company category, amount and type of finance, investment focus and sources of finance. Also by keyword search.

2.2.4. Seed stage

Seed startups are those that "*have been in business for a short time but have not sold their product or service commercially*". The funding needed by these startups is therefore aimed at product development and initial marketing (Morris et al., 2009). In other words, to lay the groundwork that will eventually enable the startup to reach profitability.

At the private level, the predominant investors at this stage are **business angels** (BAs), who normally prefer to operate within their industries of expertise and at a local or regional scope. Among the advantages of using BAs' funding are their know-how, contacts and skills – BAs normally have an entrepreneurial background, which they are eager to share with their funded entrepreneurs. This advantage, however, can sometimes become a drawback; some entrepreneurs

[13] Residents of any of the following 19 countries: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, North Macedonia, Greece, Malta, Montenegro, Latvia, Lithuania, Poland, Portugal, Serbia, Slovakia, Slovenia, Romania, Ukraine, Turkey

may find certain business angels intrusive, even invasive. All in, BAs' experience normally provides them with a better understanding of the times required to reach profitability, "*and thus provide a more 'patient' capital than other available funding options*" (Morris et al., 2009).

But **how much money do BAs invest**? According to (EBAN, 2021), around 30% of investments made by business angels in 2020 were in rounds equal to or lower than €100,000, 45% in rounds between €0.1-0.5 million, 14% in rounds worth between €0.5-1 million, and 11% of all visible deals were closed in rounds above €1 million. Note that these statistics do not only consider those rounds covered entirely by a single BA, but all rounds that involved at least one business angel. In fact, the average investment in 2020 per business angel in Europe was around €24,000, while invested companies received an average of €214,150 in BA funds.

Regarding potential HBP spin-offs, it is noteworthy that 10% of the total amount invested in 2020 by European BAs was dedicated to the health sector (health platforms, medical devices, biotechnology and pharmaceutical companies; around €767 million).

Prominent among BA funding are **business angel networks** (hereafter, BANs), one of the new seed investment players stemming from the basic distinction between business angels and venture capital. As per the European Commission BAs' website (European Commission, n.d.-a), two of the main European BANs are:

- *The European Trade Association for Business Angels, Seed Funds and Early Stage Market Players (EBAN)* (*About Us | EBAN*, n.d.), aimed at representing the early stage investor in Europe. Among its areas of activity, EBAN's Health Community "*brings together EBAN members interested in investing in health startups and/or learning about the market and investing trends in this sector*" (*Health | EBAN*, n.d.), a network of interest for potential HBP spin-offs.
- *Business Angels Europe* (*About Us | Business Angels Europe*, n.d.), which represents European business angel federations and trade associations.

BANs usually become syndicates, groups that bring BAs together to introduce them to potential deals. Some even operate as funds which let BAs pool their resources and follow a single lead investor, as is the case of AngelList Venture syndicates (*Home | AngelList Venture*, n.d.). The average investment per BAN in Europe was around €1.9 million in 2020 (EBAN, 2021).

It is worth mentioning that business angels may as well look for public funding to complement their investments. Such is the case of the European Angels Fund (EAF), an initiative advised by the European Investment Fund which "*provides*

equity to business angels and other non-institutional investors for the financing of innovative companies in the form of co-investments" (European Investment Fund, 2022). With a funding volume exceeding €800 million, €330 million are already committed to over 120 BAs, investors listed in the following link:

https://www.eif.org/what_we_do/equity/eaf/selected-angels.pdf

Furthermore, note that some featured BAs / BANs are also included in Section 3 of this report, *Relevant Seed & Early-Stage Private Neurotech Investors*.

At the public level, the main funding instruments used by both European and national agents are grants and equity / quasi-equity products. More discreetly, also loans and guarantees, even though most seed startups still seldomly choose to borrow money (other than convertible notes). Let's now review the main calls and programs offered at the European level for technological startups in their seed stage.

The main EIC instrument of interest for a startup in its seed stage is the **EIC Transition** call, which is also structured into two modalities: the *Open* and the *Challenges* one (European Commission, 2022a). The **EIC Transition Open** modality is aimed, similarly to the EIC Pathfinder Open, at consortia of three to five different independent legal entities established in at least three different eligible countries. The main difference between both EIC calls is that single applicants (spin-offs, startups, SMEs, research organizations and universities) and small consortia (two partners) are also accepted in the EIC Transition Open. Furthermore, the EIC Transition Open imposes a new, **key restriction:** that all proposals submitted to the EIC Pathfinder Open must build on outcomes from eligible EIC Pathfinder, FET or ERC Proof of Concept projects.

In case eligible and successful, chosen projects will receive grants of up to €2.5 million (or more if properly justified) to validate and demonstrate the proposed technology in an application-relevant environment (TRL 4 – 5/6) and develop market readiness. In 2022, this call's deadlines are May 4th and September 28th, and has a total indicative budget of €70.9 million.

The **EIC Transition Challenges** admits the same applicants as the Open version. Among the challenges to be tackled covered by this call are:

- Green digital devices for the future
- Process and system integration of clean energy technologies
- RNA-based therapies and diagnostics for complex or rare genetic diseases

With these options, some HBP spin-offs might find it interesting to apply to the grants offered in the realm of RNA-based therapies and diagnostics, of the same amount and target as those offered in the Open modality. In 2022, the EIC

Transition Challenges' deadlines are May 4th and September 28th, and the call has a total indicative budget of €60.5 million.

It is noteworthy that spin-offs with technologies with a TRL of 5, almost 6, could also be interested in the EIC Accelerator call, described in section *2.2.5. Series A stage* of this report.

Regarding the **EIT**, and more specifically the **EIT Health** community, two programs may be of great interest to HBP's research groups and their potential spin-offs (European Institute of Innovation & Technology, 2022):

- The ***Catapult* program** (EIT Health, 2022c) provides intensive business training and mentoring to 42 selected biotech, medtech and digital health startups established in Europe, which then compete between each other to win a monetary prize.

  Once trained, ventures chosen participate in the program's competition semifinals, from which only 21 startups get to the final round: a battle to deliver the best pitch to over 500 industry experts and investors at the EIT Health Summit. The top three startups in each category win €40,000 for the first place, €20,000 for the second place and €10,000 for the third place. For the Audience Award Winner, a further prize is to have their start-up displayed on the New York Nasdaq Tower.

  Conditions to apply to the Catapult program include being a micro/small enterprise with less than 50 employees; involved in biotech, medtech or digital health; with innovative and highly promising business concepts; already incorporated and operating in an EU country; looking for seed or series A funding of at least €500k; self-valued at €1M+; received at least €500K in public or private funding or generated €500k in revenue last year.

  Applications for 2022 are now (July 2022) closed, and will reopen in January 2023.

- The ***Mentoring & Coaching Network*** (EIT Health, 2022e), specifically created for businesses developing a healthcare product or looking to scale-up and expand into new markets (note that ventures in their series A stage can also benefit from this opportunity).

  Applicants, who must be registered in a Horizon Europe country, will receive a voucher of at least €500 to use with their chosen mentors, with a mentoring connection from the network typically costing between €1000-€2000. Applications are open on a monthly rolling basis.

Following with public sector funding for seed startups, and as already indicated, we refer the reader to the website:

https://europa.eu/youreurope/business/finance-funding/getting-funding/access-finance/index_en.htm

in order to explore **InvestEU's opportunities** available in the venture's country. Note that such opportunities can be filtered by region, company category, amount and type of finance, investment focus and sources of finance. Also by keyword search.

2.2.5. Series A stage

Startups in their series A fundraising stage "*have successfully completed the development stage, but require further funds to begin commercial production or sale*" (Morris et al., 2009).

At the private level, the predominant investors at this stage are **venture capital (VC) funds**, which use equity products as their main funding instrument. In short, recall that a VC fund is an investment company; an intermediary between a group of investors (high net-worth individuals, banks, pension funds, etc) and the fund's portfolio companies. These companies are the startups selected by the VC to be funded, and their aim is to create value out of the VC's funds – an added value that the VC will then try to harvest by selling its participation in the venture (in the jargon, through an "*exit*" or "*by exiting*").

In broad terms, the **VC investment process** involves four different phases (*Understanding Venture Capitalists: How to Get Money for Your Start Up | EdX*, n.d.): the contact phase (1 month), the rough analysis phase (2 weeks – 2 months), the detailed analysis phase (1 – 3 months) and the negotiation phase (1 – 3 months).

To begin, a "*warm*" introduction through a common contact is recommended, so that this third person can attest the entrepreneur's worth and convince the VC to read a short paper describing the venture. If interested, the VC will then offer the startup to conduct a rough analysis of the venture, in order to make a preliminary decision on whether to follow up the contact or not. Prior to such analysis, most startups would prefer to sign a non-disclosure agreement, a condition normally refused nowadays by VCs. If satisfactory, this first analysis will be followed by a letter of intent of the VC, expressing their interest in funding the venture if finally convinced after a further exhaustive analysis. In this third stage, the business plan of the venture will be checked in detail, and a due diligence of the startup's technical, financial, taxation, economic, legal – and even environmental – sides will be conducted. If satisfied, the VC and the entrepreneur will then enter negotiations to agree on an investment proposal (formally, a "*term sheet*"), a

process that can last several months and that will finally end – if successful – with a signed investment contract.

But **how much money do VC funds invest**? According to (Invest Europe, 2022), venture capital invested €8.3 billion in early-stage European ventures in 2021, almost 41% of all VC investment to happen in Europe the past year. As might be expected, such financing was not evenly distributed. The top ten countries whose ventures cumulatively received the highest VC funding in 2021, as % of such countries' GDP, were Finland, Denmark, the Netherlands, Sweden, Austria, the United Kingdom, the Baltic Countries, France, Germany and Spain. On the other hand, the top ten housing countries of VC funds, sorted attending to the cumulative investment made by those funds as % of the country's GDP, were Luxembourg, the United Kingdom, Denmark, the Netherlands, Sweden, France, Belgium, Finland, Switzerland and Germany. Note the asymmetry between both groups, which reveals the existence of a strong European VC market.

Regarding potential HBP spin-offs, it is noteworthy that around 20% of all venture capital investment made in Europe in 2021 (including that received by late-stage ventures) was devoted to biotech and healthcare companies; equivalent to almost €5 billion, an ever-growing amount since 2017.

These figures can make VC financing look really attractive. However, entrepreneurs should also be aware of some **important implications of relying on VCs** (*Understanding Venture Capitalists: How to Get Money for Your Start Up | EdX*, n.d.). Because the lifetime of a VC is normally limited (investors set expiration dates at which they recover their investment), a startup partnership with a VC is also limited in time. This implies that VCs will try to inject as much funding as they can in the least time possible, also because time plays a crucial role for return. This operational scheme may entail risks for those startups not prepared to grow rapidly, either due to their life stage or business model. Such risks, however, still compensate the VCs: for them it's just a portfolio game; they know that only 10%-20% of their portfolio will survive and the larger the survivors are when the VC exists them, the higher the gains. Also, bear in mind that any VC exit implies selling its equity – and, thus, its decision power – to a new investor. Such investor isn't normally the founders, as they do not usually have enough financial muscle to repurchase the VC's stock. This could finally lead to a loss of control over the company.

These considerations strongly suggest that, when considering potential financing sources, entrepreneurs shall ponder and decide whether VC (and private equity, broadly) is the right choice for their venture and the way they would like to manage it. Once decided upon, it is of the utmost importance that the chosen VC

fits the startup and its founders. Among the relevant selection criteria are the reputation of the VC (insights can be provided by startups previously exited by the VC, for example), the development phase of the venture, if the VC is specialized in a certain industry, the required financing volume and the location of the VC (the farther, the less probable the investment). Considering these variables, entrepreneurs should filter their lists of potential VCs, sort them and finally select the most relevant ones: those that will be approached and presented with an executive summary of the business idea. An extensive list of venture capital funds with obvious interest in biotech and healthcare companies, and in most cases specifically in neurotechnology, is provided Section 3 of this report, *Relevant Seed & Early-Stage Private Neurotech Investors*.

At the public level, the main funding instruments used by both European and national agents are still grants and equity / quasi-equity products, with loans and guarantees starting to play a more prominent role. The main calls and programs offered at the European level for technological startups in their series A stage are described below.

The central EIC instrument of interest for a startup in its series A stage is the **EIC Accelerator** call. Structured into two modalities, the *Open* and the *Challenges* one (European Commission, 2022a), both are aimed to single startups and SMEs, individuals intending to launch one of the two and, in exceptional cases, also to small mid-caps (with less than 499 employees). Successful applicants will receive up to €2.5 million grant for technology development (from TRL 5/6 to TRL 9), as well as an investment component for scaling up and other activities, ranging from €0.5 – 15 million. Under certain conditions, the grant component may be the only one granted or be first released. On the other hand, the investment part is only aimed at small mid-caps or as follow up financing to *grant only* beneficiaries.

The *Challenges* modality involves two domains: *Technologies for Open Strategic Autonomy* and *Technologies for 'Fit for 55'*. The former is aimed at highly innovative start-ups and SMEs that propose new technologies to address several key strategic areas (the following are only those somehow related to HBP):

- Components, technologies and systems for the pharmaceutical industry to ensure security of supply
- Strategic healthcare (mainly genetic) technologies
- Edge computing applications

On the other hand, Technologies for 'Fit for 55' is based on the package of proposals adopted by the Commission in July 2021 to make the EU's climate, energy, land use and transport fit for reducing net greenhouse gas emissions by at least 55% by 2030 (European Commission, 2021). As the scope and specific

objectives of this EIC Accelerator challenge are not related to the activities of HBP, it will not be discussed any further.

In 2022, the EIC Accelerator call's deadlines are March 23rd, June 15th and October 5th for full applications. These can only be submitted after the corresponding small application is approved; a synthesized proposal which submission deadlines are open on a rolling basis. For the Open modality, the total indicative budget is €630.9 million, while the EIC Accelerator Challenges one is €536.9 million.

Regarding the **EIT**, and more specifically the **EIT Health** community, several initiatives may be of interest to HBP's research groups and their eventual spin-offs (European Institute of Innovation & Technology, 2022):

- The **Venture Centre of Excellence** (VCoE) (EIT Health, 2022f), which brings together notable life science investors and highly qualified European health SMEs. Companies accepted to the program receive support to fundraise their series A, B and up to pre-IPO rounds.

  To qualify for the VCoE initiative, SMEs must be based in any Horizon Europe country; work in healthcare; seek more than 6 million euros in their next fundraising round; be developing a transformational technology, currently at TRL6+; and intend to continue growing in Europe. Upon application acceptance, chosen candidates will be entitled to pay a €2,000 fee to complete the assessment process, and a later service and mentorship fee of €8,000 to confirm their participation in the VCoE. Furthermore, upon successful fundraising within the program, the SME will pay a percentage-calculated fee of the capital that has been raised thanks to new investors in the company.

  Applications for the VCoE are open throughout the year.

- The **Gold Track** program (EIT Health, 2022d) pairs successful healthcare entrepreneurs with companies that show high scalability potential, to provide the latter with individualized mentorship, growth planning and help with their financial strategy.

  Based around three four-month phases, each phase of the Gold Track program begins and ends with a highly interactive workshop. At each workshop, current and new Gold Track companies compete for their place in the next phase. Each workshop involves 1:1 and group sessions with Expert Council members and the opportunity to present to additional hand-picked investors and industry partners.

  Companies eligible to the Gold Track program shall have the potential to address unmet medical needs, backed by strong science and technology;

operate in healthcare / life sciences, such as therapeutics, diagnostics, platform technologies, medtech, or digital health; have a committed leadership team and a financial runway of at least nine months; and be privately-owned with less than 50 employees and based in Europe, the UK, or Israel. As already pointed out, aspiring candidates will need to convince at least one Expert Council member to back them in order to achieve acceptance to the program.

Applications are accepted on a rolling basis. Gold Track is free to enter and to participate. The program does not take equity in the participating companies nor charge any consulting fees. However, as happens with the Venture Centre of Excellence program, a nominal fee will be charged upon successful fundraising derived from the program.

- The **Bridgehead programs** (EIT Health, 2022b), aimed at expanding successful startups beyond their home market through EIT Health's approved network of incubators or accelerators. Because these programs target scaleups, rather than startups, they will not be discussed any further.

On its part, the main opportunity offered by the **EIT Digital** community to early stage ventures is the **EIT Digital Challenge** (EIT Digital, 2022a). Designed for deep tech scaleups – including startups facing their series A round, the EIT Digital Challenge is a competition in which 20 selected companies have the opportunity to pitch "*in front of a panel of experts and investors, as well as participate in matchmaking sessions with invited corporates and investors*". The five best ones win a full year of "*tailored international growth support*" by the EIT Digital Accelerator. Worth €50,000, the prize covers preparation of the venture's next series A or B round, coaching on market readiness and go-to-market strategy, and access to EIT Digital's pan-European network. Among the **five thematic areas** available, those maybe related to **HBP** include **Digital Tech**, **Digital Industry** and **Digital Wellbeing**.

Conditions to be eligible for the EIT Digital Challenge include being max. ten years old, established in an EU27 Member State or Horizon Europe Associated Country and be generating at least €300,000 in revenue in 2021 or have raised €2 million in funding.

In 2022, applications for the EIT Digital Challenge opened June 30th and will close on September 19th. The 20 selected finalists will be announced in October, with the pitching event happening on October 27th.

When scaleups are big enough, they may directly look for support from the EIT Digital Accelerator. Because those ventures remain out of the scope of this report, services offered by the EIT Digital Accelerator will not be explained any further.

Following with public sector funding for seed startups, and as already indicated, we refer the reader to the website:

https://europa.eu/youreurope/business/finance-funding/getting-funding/access-finance/index_en.htm

in order to explore **InvestEU's opportunities** available in the venture's country. Note that such opportunities can be filtered by region, company category, amount and type of finance, investment focus and sources of finance. Also by keyword search.

3. Relevant Seed & Early-Stage Private Neurotech Investors

To facilitate HBP's spin-offs path to fundraising, we now provide a list of VCs/BAs of potential interest to the Project's startups. In order to have a sample of the most relevant seed and early growth stage neurotech investors, we screened the online investment database *Dealroom.co*. With this aim, we first filtered its investors information according to the keywords "*neuro*" and "*brain*" and the "*SEED*" option of the *Preferred round* field. We then sorted the resulting investors list following five different variables[14] and intersected the five rakings yielded. The following BAs and VCs belong to the top 25 investors of at least two of those rankings and were identified as relevant for potential HBP startups:

High-Tech Gründerfonds

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
Bonn (Germany)	656	95	446,64	445,64

https://www.htgf.de/en/

Among the neurotech startups funded by High-Tech Gründerfonds, *Medineering Surgical Robotics*, which "*develops, manufactures and markets an application-specific medical robotic portfolio*", and was acquired in 2019 by Brainlab (*Medineering Surgical Robotics | Dealroom.Co*, n.d.); and *Mindance*, a "*digital mental coach for more focus, strengthened relationships and increased well-being*" (*Mindance | Dealroom.Co*, n.d.).

High-Tech Gründerfonds is focused on seed funding; conducted its last round of investment in March 2022; and participates with an average of €2.47 million per round, mainly through convertible debt and minority equity (<50% of the venture's holdings). The total value of its current portfolio is around €6 billion, and it was ranked 74th best seed fund in the European Seed Ranking 2020.

[14] By *European Seed Ranking 2020*, by *number of rounds financed*, by *total participation in deals*, by *portfolio size* and by *total value of current portfolio*.

TechStart Ventures

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
Edinburgh (Scotland)	100	92	47,27	41,27

https://www.techstart.vc/

Among the neurotech startups funded by TechStart Ventures, *Neurovalens*, which "*creates non-invasive neurostimulation products used in transdermal activation of the homeostatic nuclei of the brainstem and hypothalamus, allowing for alterations in autonomic function, circadian regulation and Neuro-metabolic influence*" (*Home | Neurovalens*, n.d.). Also, *Cumulus neuroscience*, which has created an "*integrated physiological and digital biomarker platform*" that facilitates neuroscience clinical trials by providing "*critical data and insights needed to accelerate the delivery of more effective CNS drugs to patients*" (*Home | Cumulus Neuroscience*, n.d.). Finally, TechStart Ventures portfolio also contains NeuroCONCISE, "*wearable neurotechnology for brainwave measurement and analysis*" (*Home | NeuroCONCISE*, n.d.).

TechStart Ventures is focused on seed and early growth funding; conducted its last round of investment in March 2022; and participates with an average of €2.08 million per round. The total value of its current portfolio is around €650 million, and it was ranked 249th best seed fund in the European Seed Ranking 2020.

Entrepreneur First

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
London (England)	396	60	132.95	110.27

http://www.joinef.com/

Among the neurotech startups funded by Entrepreneur First, *NeuroBit Technologies*, which uses "*physiological signals collected during sleep to uncover heart failure, stroke and dementia patterns*" (*Home | Neurobit*, n.d.). Also, *Neurofenix*, which makes rehabilitation affordable for stroke patients (*Clinicians | Neurofenix*, n.d.).

Entrepreneur First is focused on seed funding; conducted its last round of investment in March 2022; and participates with an average of €1.64 million per round. The total value of its current portfolio is almost €4 billion, and it was ranked 161st best seed fund in the European Seed Ranking 2020.

Techstars

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
USA (Several hubs in the world)	3723	19	345.17	61.15

https://www.techstars.com/

Among the startups funded by Techstars, *NeuralSpace*, a no-code NLP platform (*Home | NeuralSpace*, n.d.); *Branching Minds*, dedicated to better learning through cognitive science (*Home | Branching Minds*, n.d.); and *BrainSpec*, a health-tech company that enables "*accurate, efficient, and non-invasive diagnosis of brain disorders*" (*BrainSpec | Techstars Companies*, n.d.).

Techstars is focused on seed and early growth funding; conducted its last round of investment in March 2022; and participates with an average of €1.07 million per round. The total value of its current portfolio is almost €58 billion, and it was ranked 158th best seed fund in the European Seed Ranking 2020.

Entrepreneurs Roundtable Accelerator

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
New York City (NY, USA)	215	5	35.09	-

http://eranyc.com

Among the startups funded by Entrepreneurs Roundtable Accelerator, *Soundmind*, a conversational A.I. care assistant for senior living (*Home | Soundmind*, n.d.).

Entrepreneurs Roundtable Accelerator is focused on seed funding; conducted its last round of investment in March 2022; and participates with an average of €1.04 million per round. The total value of its current portfolio is around €1.8 billion, and it was ranked 309th best seed fund in the European Seed Ranking 2020.

Pegasus Tech Ventures

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
San Jose (CA, USA)	189	3	575.64	-

https://www.pegasustechventures.com/

Among the neurotech startups funded by Pegasus Tech Ventures, *Darminyan*, a which has developed "*a software platform that detects Alzheimer's disease up to fifteen years before symptoms*" (*Darmiyan | Dealroom.Co*, n.d.). Also *Sano*, a "*wearable sensor to transfer blood chemistry data to any device*" (*Sano | Dealroom.Co*, n.d.).

Pegasus Tech Ventures covers the whole lifecycle of a startup's fund needs, from seed and early growth to its late growth and mature stage. It conducted its last round of investment in March 2022; and participates with an average of €14.13 million per round. The total value of its current portfolio is around €143.5 billion.

Western Technology Investment

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
Portolla Valley (CA, USA)	232	1.7	650.45	-

http://www.westerntech.com

Among the neurotech startups funded by Western Technology Investment, *Elvian*, which develops "*new medicines that promote recovery and regeneration,* [in particular] *a recombinant protein for the treatment of stroke in the days following the event*" (*Home | Elevian*, n.d.). Also *Mantra Health*, a "*digital mental healthcare clinic designed for young adults*" (*Mantra Health | Dealroom.Co*, n.d.).

Western Technology Investment covers the seed, early and late growth stages funding needs. It conducted its last round of investment in March 2022; and participates with an average of €14.63 million per round. The total value of its current portfolio is around €22.3 billion.

Tech Coast Angels

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
Los Angeles (CA, USA)	476	1	19.91	-

http://techcoastangels.com

Among the neurotech startups funded by Tech Coast Angels, *Neural Analytics*, which combines robotics and artificial intelligence with ultrasounds to obtain real-time information about cerebral blood flow, aimed at facilitating diagnosis of traumatic brain injury (*Home | NovaSignal*, n.d.). Also, *N Spine*, which develops "*devices for stabilization and motion preservation of the lumbar spine via minimally invasive surgery*" (*N Spine | Dealroom.Co*, n.d.); and *Reveal DX*, a software company which delivers radiomics and AI-enabled lung cancer decision support software (*Home | Reveal DX*, n.d.). Even though the latter may seem unrelated to HBP, it seems feasible that the digital tools generated by the project could be incorporated into an analogous software, thus our interest to mention this venture.

Tech Coast Angels is focused on seed and early growth funding; conducted its last round of investment in March 2022; and participates with an average of €1.08 million per round. Its total value of current portfolio is around €7.6 billion.

Ben Franklin Technology Partners of Southeastern Pennsylvania

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
Philadelphia (PA, USA)	409	1	8.91	-

http://www.sep.benfranklin.org

Among the neurotech startups funded by the Ben Franklin Technology Partners of Southeastern Pennsylvania, *Neuro Diagnostic Devices*, which provides a "*closed loop seizure control device to detect and prevent seizures*" (*Neuro Diagnostic Devices | Ben Franklin Technology Partners*, n.d.). Also, *InfraScan*, a "*medical device company [focused] on handheld diagnostic imaging devices for head injuries and stroke using near infrared (NIR) technologies*" (*Infrascan | Ben Franklin Technology Partners*, n.d.); and *Neuroflow*, which platform enables behavioral health support and AI-driven clinical decision (*Home | NeuroFlow*, n.d.).

The Ben Franklin Technology Partners of Southeastern Pennsylvania is focused on seed and early growth stage funding; conducted its last round of investment in February 2022; and participates with an average of €1.07 million per round. Its total value of current portfolio is almost €12 billion.

Techammer

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
New York City (NY, USA)	66	4	9.09	-

http://techammer.co/

Among the neurotech startups funded by Techammer, *OccamzRazor*, which "*uses machine learning to find and develop curative treatments for Parkinson's disease*" (*OccamzRazor | Dealroom.Co*, n.d.); and *Viz*, an artificial intelligence, medical imaging company that helps optimize emergency treatment, including that of brain conditions (*Home | Viz.Ai*, n.d.). Also noticeable is *Ligandal Technology*, a machine learning-based biotech which develops peptide therapeutics for regenerative medicine (*Home | Ligandal*, n.d.).

Techammer is focused on seed funding; conducted its last round of investment in October 2021; and participates with an average of €2.81 million per round. The total value of its current portfolio is around €17.8 billion.

Plug and Play Insurtech

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
Munich (Germany)	3847	24	-	-

https://www.plugandplaytechcenter.com/insurtech/

Among the neurotech startups funded by Plug and Play Insurtech, Plug and Play's Berlin hub, the following ventures stand out: *Savonix*, which provides a "*mobile neurocognitive assessment and brain health platform, clinically validated and used by patients, clinicians, and insurers*" (*About Us | Savonix*, n.d.). Also, *Emotiv*, which develops "*products and research related to understanding the human brain using electroencephalography*", including a brain computer interface headset, a real-time 3D visualization software and an analysis software toolkit (*Get Started |*

EMOTIV, n.d.). Besides, *NeuraMetrix* and its software to detect and monitor brain diseases through typing cadence is also remarkable (*Home* | *NeuraMetrix*, n.d.).

Plug and Play Insurtech is focused on seed funding; conducted its last round of investment in October 2021; and participates with an average of €2.81 million per round. The total value of its current portfolio is around €17.8 billion.

UTEC - The University of Tokyo Edge Capital Partners

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
Chiyoda (Japan)	93	4	-	-

http://ut-ec.co.jp

Among the startups funded by UTEC, *Charco Neurotech*, which offers a "*vibrotactile stimulation medical device for the treatment of Parkinson's disease*" (*Charco Neurotech* | *UTEC*, n.d.); or *Capex*, developers of chatbots for mental health (*Capex* | *UTEC*, n.d.). Other ventures supported that could also be related to HBP include *GNI*, focused on drug discovery based on gene network analysis (*GNI* | *UTEC*, n.d.), a realm that recalls EBRAINS' JuGEx; and *NanoCarrier*, which conducts R&D for pharmaceutical products (*NanoCarrier* | *UTEC*, n.d.), a domain where EBRAINS' simulation tools could be greatly appreciated by the investors' community.

UTEC is focused on working with academia in Japan and abroad along the lifecycle of startups (and thus may fund a venture at any stage) and conducted its last round of investment in June 2021. The total value of its current portfolio is around €3.7 billion.

Seagate Technology

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
Cupertino (CA, USA)	7	15	-	-

http://www.seagate.com

Among the startups funded by Seagate Technology, *Weka.io*, a "*shared file system for AI, machine learning and technical computing workloads*" (*Weka.Io* | *Dealroom.Co*, n.d.); Dot Hill Systems, which provides software and hardware

solutions for storing, sharing, protecting and managing data (*Dot Hill Systems | Dealroom.Co*, n.d.); and Xyratex, provider of "*data storage technology, including modular solutions for the enterprise data storage industry, and hardware*" (*Xyratex | Dealroom.Co*, n.d.). All examples related to the EBRAINS Knowledge Graph.

Seagate Technology is focused on early growth and late growth stages funding; conducted its last round of investment in December 2019; and participates with an average of €25.86 million per round. The total value of its current portfolio is around €9.8 billion.

EQT Life Sciences

HQ	Portfolio size	Portfolio % in Europe	Investment last 12 months (EUR M)	Investment last 12 months Europe (EUR M)
Amsterdam (The Netherlands)	99	72.7	-	-

https://www.lspvc.com/

Among the startups funded by EQT Life Sciences, *Perfuze*, an "*Irish medical device company developing and commercializing new products for the treatment of ischemic stroke*"; *AviadoBio*, focused on "*developing and delivering gene therapies for diseases including frontotemporal dementia (FTD) and amyotrophic lateral sclerosis (ALS)*"; or *Muna Therapeutics*, a drug developer aimed at "*preserving brain function and enhance resilience to neurodegenerative diseases*" such as Alzheimer's, FTD and Parkinson's disease (*Portfolio | EQT Life Sciences*, n.d.).

EQT Life Sciences covers the early, late growth and mature stages funding needs.

The already mentioned investors, altogether with many others found in different reports and interested in neurotech and in seed and early growth financing, are summarized in *Annex 1. List of potential investors in HBP's spin-offs*; a list of more than 100 investors. A graphical outline of such funders' collection for the regions of Europe and California, USA, is included in the following page.

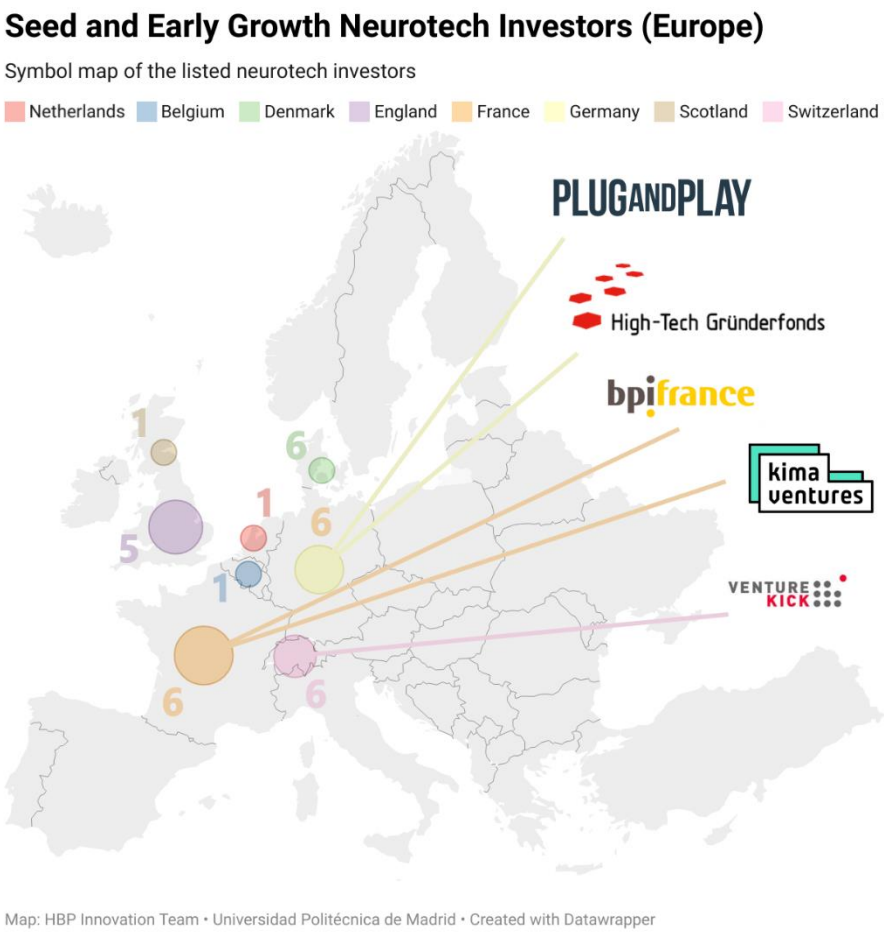

Figure 2. Symbol maps of Europe (a) and California, USA (b) of the seed and early growth neurotech investors listed in Annex 1. The logos included correspond to the investors with the five largest portfolio sizes of each region.

4. Conclusions

This report provides a broad overview of the first fundraising steps of a startup, the pre-seed, seed and series A rounds, particularized whenever possible to neurotech ventures and, in particular, to those spinning-off the Human Brain Project and its digital research infrastructure, EBRAINS.

To begin with, we clarify the difference between startup and established company, to then set the definition of startup used throughout the document. Once these basics are laid, we briefly note how does a startup usually spend its resources, to then enter the startup's fundraising process and its main stages, agents and instruments.

Agents identified include founders (and their family, friends and fools), business angels and venture capital funds, on the private side; and the European Innovation Council (EIC), the European Innovation and Technology Institute (EIT), InvestEU and the European Investment Fund (EIF); on the public domain. Transversal to both private and public are accelerators and incubators.

Regarding funding instruments, we follow the Commission's glossary and differentiate three main types: debt (loans and guarantees), equity and quasi-equity (subordinated loans, convertible bonds and preferred stocks). Bootstrapping and crowdfunding are also outlined.

Following, the pre-seed, seed and series A fundraising rounds are described, emphasizing the opportunities, advantages and disadvantages offered by the corresponding preponderant agents. For all three stages, the main European public calls and programs of interest to neurotech ventures are detailed.

In order to enable any entrepreneur to make the most out of the information provided, we then present several relevant seed & early-stage private neurotech investors on both sides of the Atlantic. This first catalog is finally completed in Annex 1, with a list of +100 potential investors in the HBP's and EBRAINS' spin-offs.

As the Human Brain Project's Innovation and Technology Transfer Node, is our highest aspiration that this report will ease the way to success to all neurotech entrepreneurs eager to make a change, specially those spinning-off the Human Brain Project and EBRAINS.

Annexes

Annex 1. List of potential investors in HBP's spin-offs

Most investors included in this annex have healthcare or medtech ventures in their portfolios and several have funded neurotech startups, reason why they were considered as potential investors in HBP's and EBRAINS' spin-offs. The few generalist funds included were chosen due to their reputation and strong financial muscle.

In the following list, the data items HQ (headquarters location), portfolio size and portfolio % in Europe were extracted from Dealroom.co data mainly during April 4th and April 5th, 2022; some also during July 13th, 2022.

Potential seed & early-stage investors in HBP's spin-offs

BASED IN EUROPE

Investor name	HQ	Portfolio size	Portfolio % in Europe
High-Tech Gründerfonds	Bonn (Germany)	656	95
	https://www.htgf.de/en/		
TechStart Ventures	Edinburgh (Scotland)	100	92
	https://www.techstart.vc/		
Entrepreneur First	London (England)	396	60
	http://www.joinef.com/		
Plug and Play Insurtech	Munich (Germany)	3847	24
	https://www.plugandplaytechcenter.com/insurtech/		
EQT Life Sciences	Amsterdam (The Netherlands)	99	72.7
	https://www.lspvc.com/		
Earlybird Venture Capital	Berlin (Germany)	200	67.5
	https://earlybird.com		

bpifrance	Paris (France)	861	95.3
https://www.bpifrance.com			
Novo Holdings	Copenhagen (Denmark)	180	42.2
https://www.novoholdings.dk			
Alpana Ventures	Geneva (Switzerland)	44	54.5
https://alpana-ventures.ch			
Kima Ventures	Paris (France)	859	57.4
https://www.kimaventures.com			
Venture Kick	Zurich (Switzerland)	719	90.3
https://www.venturekick.ch			
Wellington Partners	Munich (Germany)	142	74.6
https://www.wellington-partners.com			
Index Ventures	London (England)	599	39.2
https://www.indexventures.com			
Novartis Venture Fund	Basel (Switzerland)	117	28.2
https://www.nvfund.com			
Seventure Partners	Paris (France)	184	82.6
http://www.seventure.fr			
Omnes Capital	Paris (France)	326	83.4
https://www.omnescapital.com			

Woodford Investment Management	Oxford (England)	42	73.8
https://woodfordfunds.com			
Kurma Partners	Paris (France)	65	93.8
https://www.kurmapartners.com/en			
Sofinnova Partners	Paris (France)	193	67.4
https://www.sofinnovapartners.com			
Capricorn Venture Partners	Leuven (Belgium)	60	85.0
https://capricorn.be			
ACF Investors	Sheffield (England)	106	90.6
https://www.acfinvestors.com			
Ascension Ventures	London (England)	141	87.9
https://www.ascensionventures.com			
Ysios Capital	San Sebastián (Spain)	39	69.2
https://www.ascensionventures.com			
Heartcore Capital	Copenhagen (Denmark)	128	82.0
https://www.heartcore.com/			
Jeito Capital	Paris (France)	10	100
https://www.jeito.life/			
Andera Partners	Paris (France)	165	86.7
http://www.anderapartners.com/en/			

Forbion Capital Partners	Naarden (Netherlands)	72	62.5
	http://www.forbion.com/		
Octopus Ventures	London (England)	248	86.7
	https://www.octopusventures.com/		
Syncona	London (England)	16	75.0
	http://www.synconaltd.com/		

BASED OUTSIDE EUROPE

Investor name	HQ	Portfolio size	Portfolio % in Europe
Techstars	USA (Several hubs in the world)	3723	19
	https://www.techstars.com/		
Entrepreneurs Roundtable Accelerator	New York City (NY, USA)	215	5
	http://eranyc.com		
Pegasus Tech Ventures	San Jose (CA, USA)	189	3
	https://www.pegasustechventures.com/		
Western Technology Investment	Portola Valley (CA, USA)	232	1.7
	https://westerntech.com		
Tech Coast Angels	Los Angeles (CA, USA)	476	1
	http://techcoastangels.com		

Ben Franklin Technology Partners of Southeastern Pennsylvania	Philadelphia (PA, USA)	409	1
	http://www.sep.benfranklin.org		
Techammer	New York City (NY, USA)	66	4
	http://techammer.co/		
UTEC - The University of Tokyo Edge Capital Partners	Chiyoda (Japan)	93	4
	http://ut-ec.co.jp		
Seagate Technology	Cupertino (CA, USA)	7	15
	http://www.seagate.com		
500 Global	Mountain View (CA, USA)	2998	7.4
	https://500.co		
Indie Bio	San Francisco (CA, USA)	112	7.1
	https://indiebio.co		
Andreessen Horowitz	Menlo Park (CA, USA)	698	3.6
	https://a16z.com		
Venrock	Palo Alto (CA, USA)	340	3.5
	https://www.venrock.com		
Hercules Capital	Palo Alto (CA, USA)	101	8.9
	https://www.htgc.com		

Bolt	San Francisco (CA, USA)	42	7.1
https://bolt.io			
Salesforce Ventures	San Francisco (CA, USA)	440	10.5
https://www.salesforce.com/company/ventures			
Felicis Ventures	Menlo Park (CA, USA)	357	3.1
https://www.felicis.com			
Founders Fund	San Francisco (CA, USA)	462	7.1
https://foundersfund.com			
StartUp Health	New York City (NY, USA)	151	9.3
https://www.startuphealth.com			
ARCH Venture Partners	Chicago (IL, USA)	225	2.2
https://www.archventure.com			
Lux Capital	New York City (NY, USA)	217	2.8
https://luxcapital.com			
Connecticut Innovations	New Haven (CT, USA)	278	2.5
https://ctinnovations.com			
Khosla Ventures	Menlo Park (CA, USA)	716	3.8
https://www.khoslaventures.com			
Versant Ventures	San Francisco (CA, USA)	145	9.0
https://www.versantventures.com			

Vivo Capital	Palo Alto (CA, USA)	167	7.8
	http://vivocapital.com		
OrbiMed	New York City (NY, USA)	322	9.9
	http://www.orbimed.com		
SV Health Investors	Boston (MA, USA)	130	17.7
	https://svhealthinvestors.com		
AME Cloud Ventures	Palo Alto (CA, USA)	173	3.5
	https://www.amecloudventures.com		
Refactor Capital	Burlingame (CA, USA)	74	2.7
	https://www.refactor.com		
True Wealth Ventures	Austin (TX, USA)	17	5.9
	https://truewealthvc.com		
Endure Capital	Palo Alto (CA, USA)	52	11.5
	https://www.endurecap.com		
Frazier Healthcare Partners	Seattle (WA, USA)	105	3.8
	https://www.frazierhealthcare.com		
OMERS Ventures	Toronto (Canada)	8	37.5
	https://www.omersventures.com		
Two Sigma Ventures	New York City (NY, USA)	107	3.7
	https://twosigmaventures.com		

Great Oaks Venture Capital	New York City (NY, USA)	368	1.9
	http://www.greatoaksvc.com		
Asset Management Ventures (AMV)	Palo Alto (CA, USA)	90	3.3
	https://assetman.com		
Vulcan Capital	Seattle (WA, USA)	148	4.7
	https://capital.vulcan.com		
Optum Ventures	Menlo Park (CA, USA)	48	14.6
	https://www.optumventures.com/		
Lightstone Ventures	Palo Alto (CA, USA)	58	6.9
	https://www.lightstonevc.com		
RA Capital Management	Boston (MA, USA)	233	8.6
	https://www.racap.com		
MPM Capital	Boston (MA, USA)	119	5.0
	https://www.mpmcapital.com		
Foresite Capital	San Francisco (CA, USA)	122	8.2
	https://www.foresitecapital.com		
Basis Set Ventures	San Francisco (CA, USA)	37	2.7
	https://www.basisset.ventures		
Perceptive Advisors	New York City (NY, USA)	182	8.2
	https://www.perceptivelife.com		

Boost VC	San Mateo (CA, USA)	226	15.0
	https://www.boost.vc		
Morningside Group	Boston (MA, USA)	170	9.4
	https://morningside.com		
Rev1 Ventures	Columbus (OH, USA)	132	3.0
	https://www.rev1ventures.com		
Sand Hill Angels	Sunnyvale (CA, USA)	191	2.1
	https://www.sandhillangels.com		
Longitude Capital	Menlo Park (CA, USA)	80	10.0
	https://www.longitudecapital.com		
iSelect Fund	Saint Louis (IL, USA)	66	1.5
	https://www.iselectfund.com		
Oxford Finance	Alexandria (VA, USA)	102	4.9
	https://oxfordfinance.com/healthcare-services		
Pontifax	Tel Aviv (Israel)	50	32.0
	https://www.pontifax.com		
Bay City Capital	San Francisco (CA, USA)	78	6.4
	http://baycitycapital.com		
Domain Associates	Princeton (NJ, USA)	152	1.3
	https://www.domainvc.com		

General Catalyst Partners	Cambridge (MA, USA)	608	6.9
	http://www.generalcatalyst.com/		
Deerfield	New York City (NY, USA)	120	3.3
	https://www.deerfield.com/		
8VC	Austin (TX, USA)	252	3.2
	http://www.8vc.com/		
5AM Ventures	Menlo Park (CA, USA)	100	8.0
	http://5amventures.com/		
Canaan Partners	Menlo Park (CA, USA)	395	4.1
	http://www.canaan.com/		
Teralys Capital	Montreal (Canada)	26	3.8
	http://www.teralyscapital.com/		
Social Capital	Palo Alto (CA, USA)	274	3.6
	http://www.socialcapital.com/		
Takeda Ventures	Palo Alto (CA, USA)	46	17.4
	http://www.takedaventures.com/		
Samsara BioCapital	Palo Alto (CA, USA)	64	10.9
	http://www.samsaracap.com/		
New Enterprise Associates (NEA)	Chevy Chase (MD, USA)	1195	4.5
	http://www.nea.com/		

Dolby Family Ventures	San Francisco (CA, USA)	96	7.3
	http://dolbyventures.com/		
Bessemer Venture Partners	San Francisco (CA, USA)	744	5.6
	http://www.bvp.com/		
Battery Ventures	Boston (MA, USA)	468	7.5
	http://www.battery.com/		
Kleiner Perkins	Menlo Park (CA, USA)	747	5.5
	https://www.kleinerperkins.com/		
Decheng Capital	Shanghai (China)	45	4.4
	http://www.decheng.com/		
Lightspeed Venture Partners	Menlo Park (CA, USA)	818	4.6
	http://www.lsvp.com/		

Finally, recall that a list of over 120 business angels whose investments have been already complemented with €330 million provided by the European Angels Fund (EAF), an initiative advised by the European Investment Fund which "*provides equity to business angels and other non-institutional investors for the financing of innovative companies in the form of co-investments*" (European Investment Fund, 2022), is available through the link:

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