# Seed the Future: A Deep Dive into European Early-Stage Tech Startup Activity

Early Stage Startups in Europe

NOVEMBER 2018

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Since we started, one of the key aims of Tech.eu has been to track all of the funding rounds and exits in Europe, to provide the most comprehensive and accurate record and analysis of the European technology scene. We do this by meticulously monitoring hundreds of sources, across multiple languages and regions.

This report, developed in partnership with Stripe and Techstars, focuses on the conditions and outcomes for early stage companies in Europe from 2015 to Q2 2018. In many ways, conditions for the development of early stage technology companies in Europe have never been better. Across the continent we find larger early stage investments, greater attention from international investors, as well as companies successfully bootstrapping themselves, earning revenue and becoming viable businesses. Companies are also raising funding through additional means such as  micro-investment, crowdfunding and emerging sources such as ICOs and tokens. Government support and public policy have sought to fill in the gaps to cultivate more fertile conditions for new companies, and community activities dedicated to entrepreneurship have flourished across the continent.

As conditions for early stage technology companies become more supportive than ever before, they also are at their most competitive. While greater competition between companies has the chance to build better products and offer more choice for consumers, more founders will feel the sting of failure. Early stage companies in Europe must further navigate changing regulatory conditions, and the continued absence of a digital single market, conditions that hit the smallest and newest companies hardest of all.  On the horizon, Brexit threatens to sever Europe's strongest technology hub from the interconnected European ecosystem of technical talent, investment and expertise. No one said building a startup was easy.

Despite the challenges, startups continue to flourish. In this report, we take an in-depth look at the current state of play for European startups from a variety of angles. We examine an overview of the main deals that have taken place in the region and the companies and investors involved. We additionally highlight the geographies of deals involved, the types of companies represented, key technology trends and how the ecosystem supports startup activity beyond investment. To illustrate these points, the report shares a number of voices and success stories from those that make this ecosystem so vibrant. We wish to thank the founders, investors and community builders who so graciously shared their views and commentary for this report.

The entrepreneurial ecosystem in Europe is incredibly diverse. In an effort to make this report as comprehensive as possible, this report brings together Tech.eu's own data and interviews, as well as data made available from other sources, including that of our partners Techstars and Stripe. This multi-method approach aims to ensure that this report is able to provide a multifaceted view into a continually changing ecosystem.

This report covers funding and activity for early stage companies from 2015 to the first six months of 2018. An early stage company in Medical technologies is defined very differently than one working in SaaS. As there are multiple ways to classify what exactly is an "early stage company", this report utilizes several approaches, generally focusing on companies that are in their beginning stages and have raised less than €5 million. This is consistent with our finding that a growing number of angel rounds, seed rounds and Series A funding exceed this figure, which we examine closer in our technology trends section. Due to our reliance on multiple sources, when presenting data we clearly outline the specific source used and our scope of definition.

We have worked to make this report as comprehensive and useful as possible. Please refer to the section at the end of the report for further information on this report's methodology and disclaimers. For any questions or comments regarding this report, we invite you to email us at **reports@tech.eu**

**This report was written by Natalie Novick, Research Lead at Tech.eu**

# Contents

# Key Takeaways from the Early Stage Startup Journey in Europe (Q1 2015 to Q2 2018)

1. Early stage investment in Europe continues to grow on average quarter to quarter. In Q1 2015, early stage in investment topped out at just over 400 million (EUR), but by Q2 2018, this total expanded to over 2 billion (EUR) for the quarter.

2. The number of deals per quarter has increased across the last three years. In Q1 2015 the number of early stage deals tracked numbered 375 across the continent. By Q2 2018, the number of early stage deals reached 630 across the continent. Following this, deals per year have grown over the past three years. This year, 1,234 early stage deals have been tracked, which are slightly below expectations from last year. This could mean that the number of investments are stabilizing somewhat, however it remains yet to be seen what the final outcome for 2018 will be.

3. When examining funding deals by country, we notice that following other measures, the UK continues to receive the greatest amount of early stage funding in Europe. However, this amount only slightly outpaces that of France, which we find to attract 24.04% of all early stage funding Europe-wide, compared to the UK funding 24.59%.

4. This result might be surprising to those who are familiar with the greater technology investment trends in Europe. Why are the UK and France nearly neck and neck for funding early stage ventures when so many other reports highlight how much more vibrant overall the UK's investment landscape is? Here is the unique finding -- when you examine total financing (from early to late stage financing), the UK outstrips France by a large margin. The difference here is largely made up in growth and late stage investments operating in Europe's largest market. But when we isolate our findings to only early stage funding, France and the UK attract nearly the same amount of investment in early stage deals.

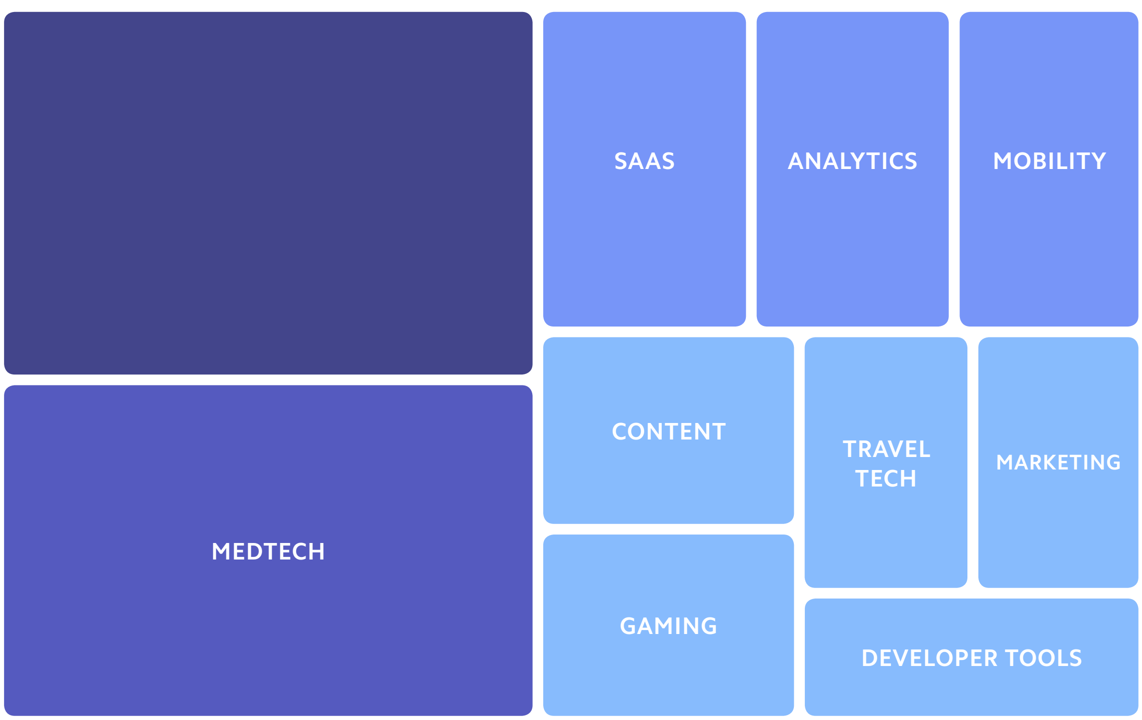
5. But what is most interesting here is the amount of investments made. France's 24% share of all total investments across the time period reflect 1,340 investments, compared to the UK's 1,147. While deal sizes in France are smaller than they are in the UK, France attracted more early stage deals overall. This could point to important identifiers about changing attitudes to entrepreneurship in France, following the country's considerable investment in becoming a "startup nation". Similarly, it speaks to the growing development of early stage VC, seed and initial investment firms in the country. While the size of these starting deals remain lower than in the UK and Germany, each of these investments represents a strong commitment in the country's growing startup ecosystem.

6. Germany, while only attracting just over 12% of the deal flow across the time period, attracted the largest average investments per early stage rounds. Germany also attracted the largest investment median, meaning that while occurred less frequently, investment rounds in Germany tended to be larger elsewhere.

7. Fintech and Medtech challenge one another for the greatest share of early stage investment. The difference in total investment is quite close, with Fintech taking 2,318,201,403 (M in Euro) to Medtech's 2,070,546,749 (M in Euro).

TOP 10 EARNING VERTICALS (MINUS MEDTECH AND FINTECH, ROUNDED TO THOUSANDS).

| | |
|---|---|
| Analytics | 738,306,000 |
| Content | 586,500,000 |
| Developer tools | 469,020,000 |
| Gaming | 534,673,000 |
| Marketing | 506,668,000 |
| Mobility | 667,626,000 |
| SaaS | 800,716,000 |
| Traveltech | 520,310,000 |

8 Companies have more funding models than ever before to build their ventures. While data remains poor on how accurate these new funding models are, we find ample success stories for founders that have sought to raise funding through them. Later in the report we hear the story or several founders that have sought to support their ventures through equity crowdfunding, ICOs/tokens, or through more sustainable revenue models than VC investment.

9 These developments in early stage funding landscape simultaneously coincide with greater offerings by European VCs and investors. Today, there is greater investment than at any other time in history. While funding has improved for founders all across Europe, European founders express dissatisfaction with the amount of funding available.

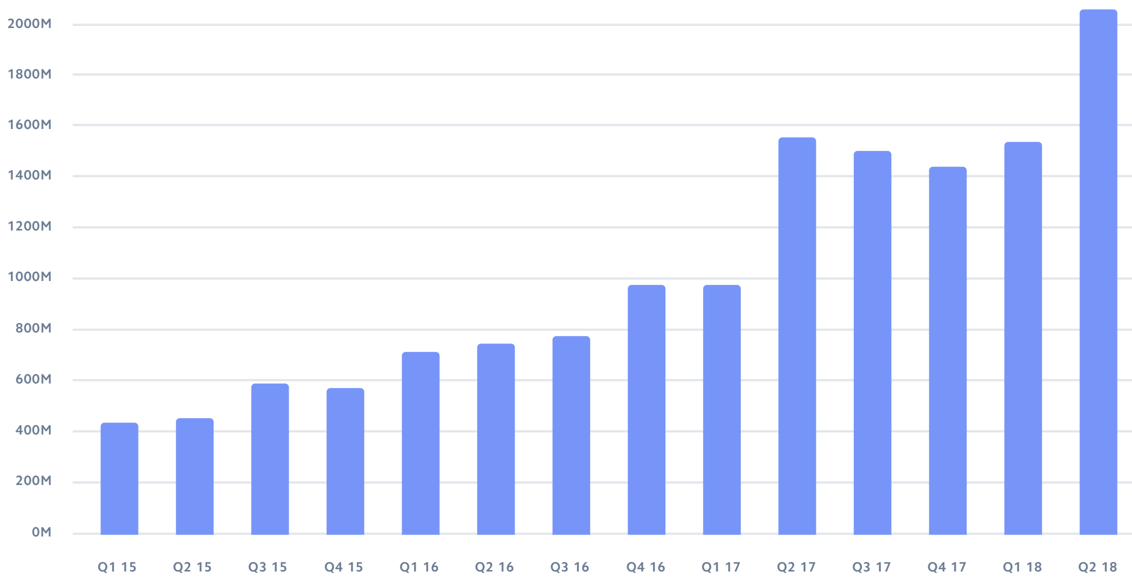
10 Early stage companies are more transnational than ever. It has never been easier for companies to extend their geographical reach and benefit from amenities elsewhere around the continent. At the same time, more and more international founders and tech talents are coming to Europe. Despite the more diverse and open landscape for founders, entrenched cultural barriers, language issues, and the continuing lack of a single market continues to frustrate European entrepreneurs that wish to scale their ventures regionally within Europe.

11 Europe has rich resources in both technical talent and the support for them through ecosystem activities. When government policies create friction for founders, founders are able to take advantage of political solutions and support that allows them to startup where they will be most successful.

12 The Brexit vote casts a long shadow on European tech. While the outcome is ultimately unclear, many founders remain optimistic that things will work out.

# A Deep Dive into Early Stage Startup investment trends

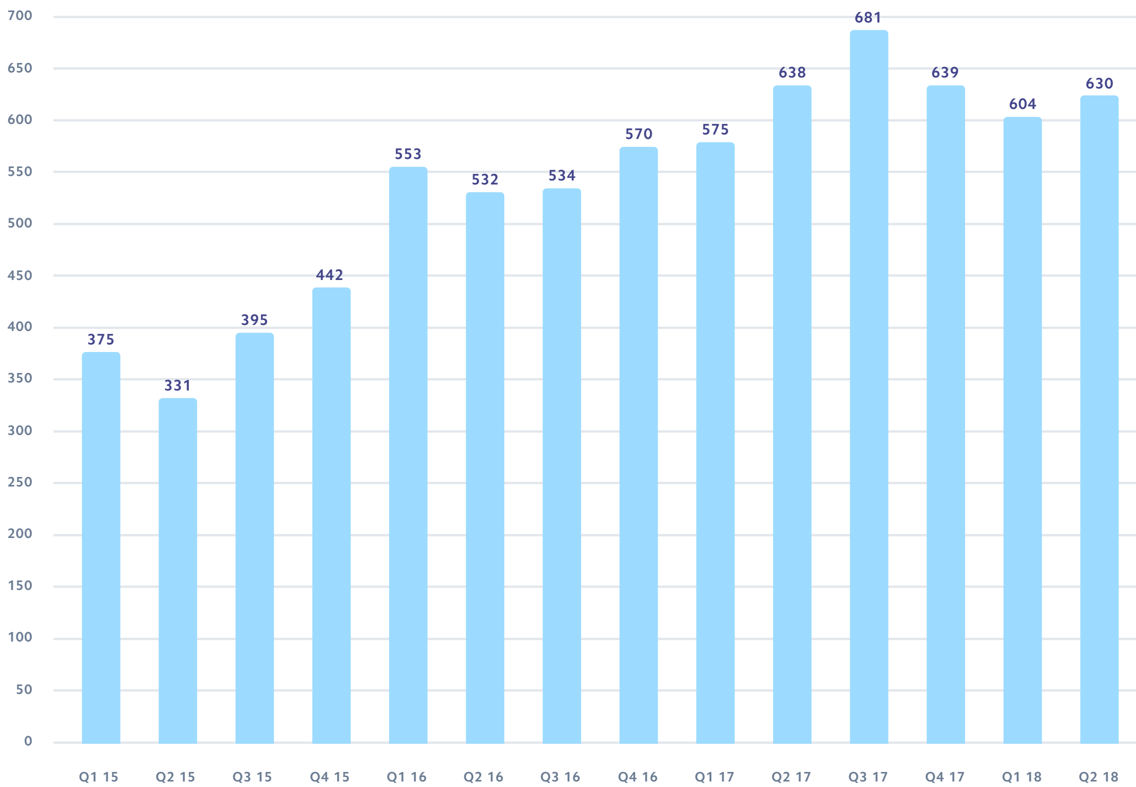
Early Stage Venture Funding in Europe, investment by quarter, 2015-2018




Sum of Amount (EUR) for each Quarter.

| Quarter | |
|---|---|
| Q1 2015 | 429.38M |
| Q2 2015 | 445.72M |
| Q3 2015 | 586.89M |
| Q4 2015 | 572.51M |
| Q1 2016 | 710.65M |
| Q2 2016 | 746.47M |
| Q3 2016 | 783.91M |
| Q4 2016 | 956.21M |
| Q1 2017 | 960.45M |
| Q2 2017 | 1,556.48M |
| Q3 2017 | 1,497.73M |
| Q4 2017 | 1,428.39M |
| Q1 2018 | 1,546.22M |
| Q2 2018 | 2,036.58M |

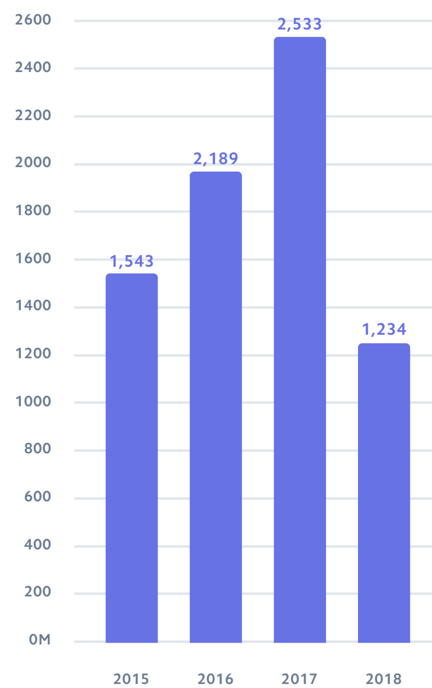
## Early Stage Venture Funding in Europe, number of deals, 2015-2018 (Q2)




| Quarter | |
|---|---|
| Q1 2015 | 375 |
| Q2 2015 | 331 |
| Q3 2015 | 395 |
| Q4 2015 | 442 |
| Q1 2016 | 553 |
| Q2 2016 | 532 |
| Q3 2016 | 534 |
| Q4 2016 | 570 |
| Q1 2017 | 575 |
| Q2 2017 | 638 |
| Q3 2017 | 681 |
| Q4 2017 | 639 |
| Q1 2018 | 604 |
| Q2 2018 | 630 |

Sum of Number of Records broken down by Quarter.

## Early Stage Venture Funding in Europe, number of deals per year, 2015-2018 (Q2)

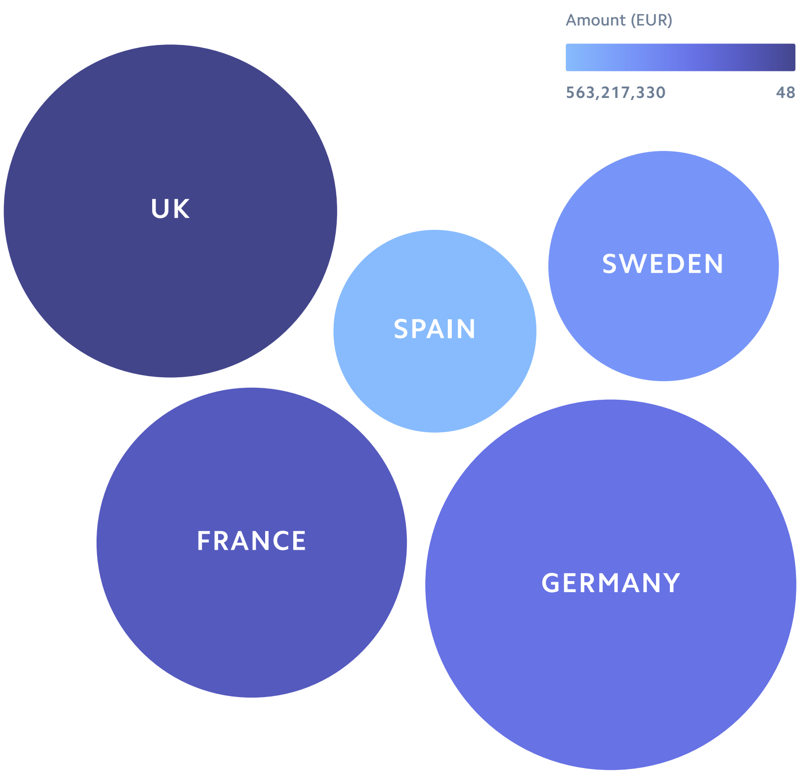



Note: 2018 includes Q1 and Q2 only.

Sum of Number of Records for each Quarter (copy) Year.

# Geography of funding of early stage companies

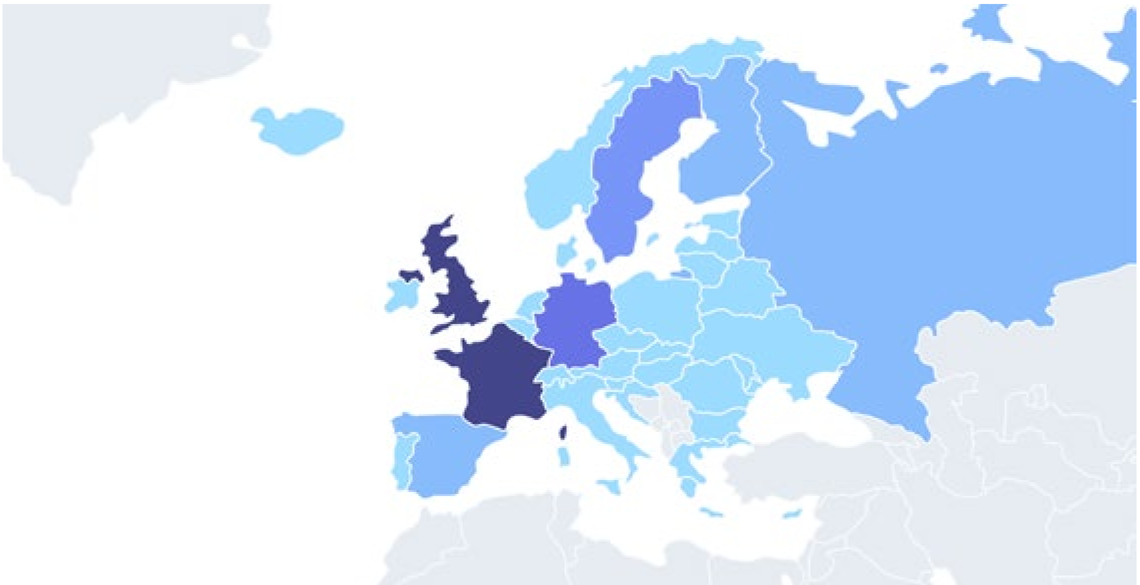
Investment share, Top 5 countries




Country. Color shows sum of Amount (EUR). Size shows average of Amount (EUR). The marks are labeled by Country. The view is filtered on Country, which keeps France, Germany, Spain, Sweden and UK.

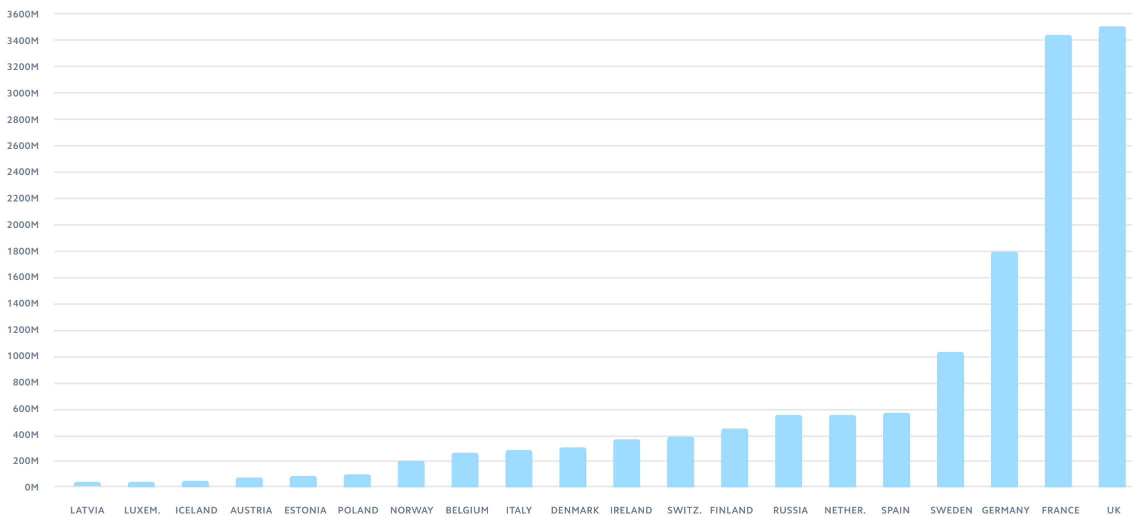
This bubble graph depicts both investment size and quantity. The above five circles include the top five countries earning early stage investment from 2015-2018. By looking at the colors, you will notice both the UK and France are depicted in dark blue, referring to their total investment level.  When including angel, seed and series A funding, we find the UK and France received the greatest share of early stage investment according to our calculation, earning 24.59 and 24.04% respectively. However, the bubble for Germany is much larger than both the bubbles for either the UK or France, despite earning only 12.65% of all early investment funding. This is because the average amount of investment per deal is much higher than in either the UK or France. France, received the greatest amount of seed and series A deals during this time period, however, these deals are much smaller on average than they are in the UK or Germany.

## Amount of Early Stage Venture Financing

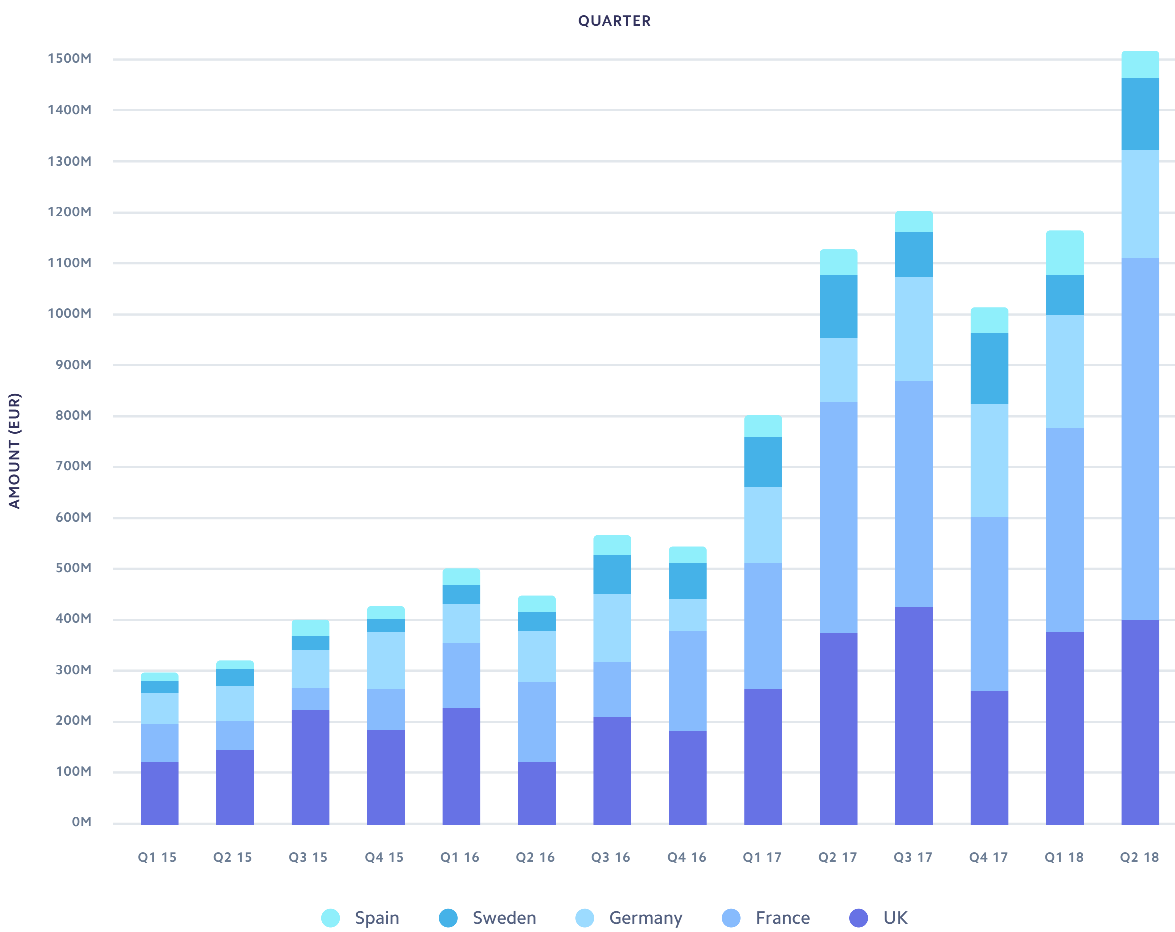


| Country | |
|---|---|
| UK | 24.59% |
| France | 24.04% |
| Germany | 12.65% |
| Sweden | 7.20% |
| Spain | 3.95% |
| Netherlands | 3.83% |
| Russia | 3.80% |
| Finland | 3.22% |
| Switzerland | 2.75% |
| Ireland | 2.57% |
| Denmark | 2.09% |
| Italy | 1.92% |
| Belgium | 1.82% |
| Norway | 1.33% |
| Poland | 0.67% |
| Estonia | 0.58% |
| Austria | 0.55% |
| Iceland | 0.33% |
| Luxembourg | 0.32% |
| Latvia | 0.28% |
| Portugal | 0.26% |
| Lithuania | 0.26% |
| Greece | 0.22% |
| Cyprus | 0.17% |
| Hungary | 0.15% |
| Czech Republic | 0.11% |
| Belarus | 0.08% |
| Malta | 0.08% |
| Slovenia | 0.08% |
| Romania | 0.07% |
| Slovakia | 0.03% |
| Croatia | 0.02% |
| Bulgaria | 0.01% |

## Investment per country, 2015-2018(Q2), top 20 countries

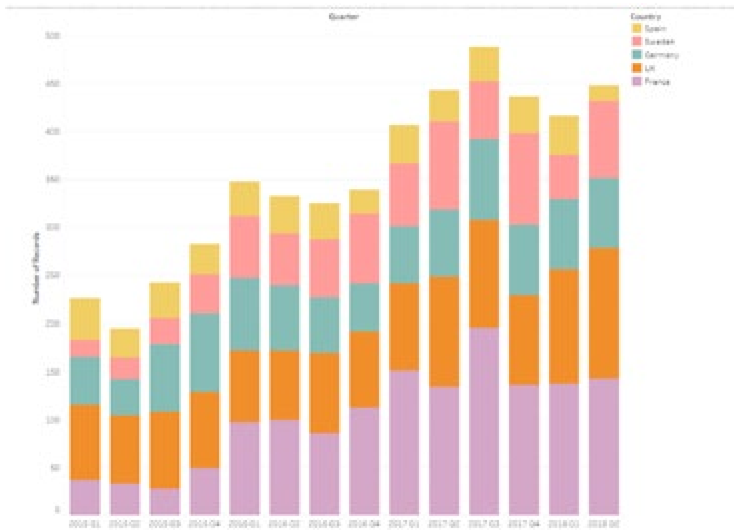



Sum of Amount (EUR) for each country. Details are shown for Country. The view is filtered on Country, which keeps 20 of 33 members.



While these funding trends are compelling, the story they tell is limited. Many of these companies consider themselves from the earliest days to be truly European, or global ventures, refusing to define themselves as headquartered in a certain place.

Many of these companies operate in multiple geographies, often with distributed teams. It can be very difficult to define a company based on the location, when it is staffed by and comprised of team members from across the globe[1]. These graphs and tables aim to show a snapshot to show some broad trends, that can later be investigated.



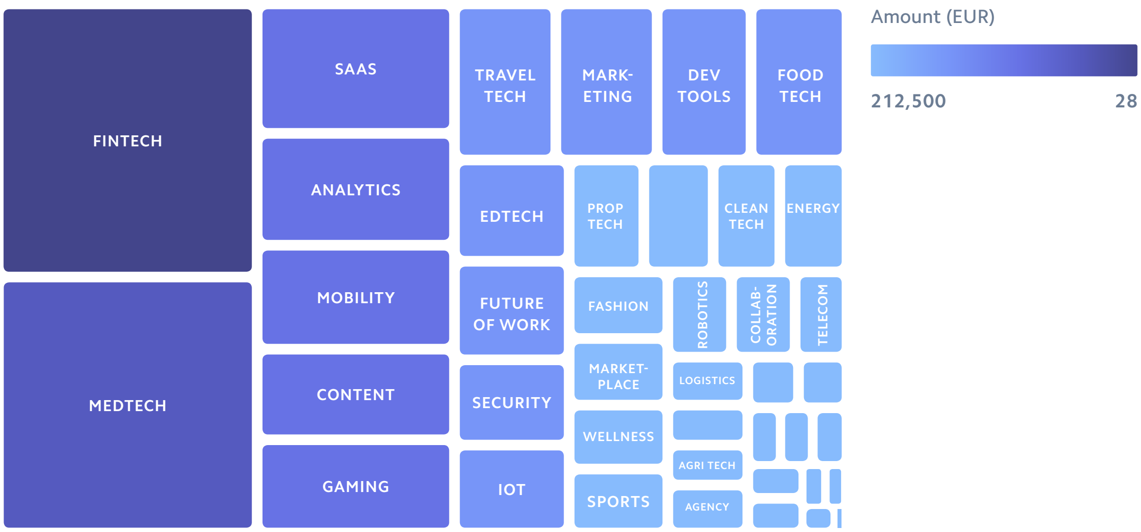

| Quarter | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Country | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 Q1 | 2017 Q2 | 2017 Q3 | 2017 Q4 | 2018 Q1 | 2018 Q2 |
| Spain | 44 | 30 | 37 | 31 | 36 | 29 | 28 | 25 | 40 | 33 | 36 | 38 | 41 | 17 |
| Sweden | 17 | 22 | 27 | 41 | 64 | 54 | 60 | 73 | 65 | 92 | 60 | 96 | 46 | 80 |
| Germany | 50 | 38 | 70 | 82 | 76 | 67 | 58 | 60 | 60 | 70 | 85 | 73 | 73 | 73 |
| UK | 78 | 71 | 80 | 79 | 75 | 73 | 84 | 79 | 90 | 114 | 112 | 93 | 119 | 135 |
| France | 37 | 33 | 28 | 49 | 97 | 99 | 86 | 112 | 151 | 134 | 135 | 136 | 137 | 143 |

While these depictions of funding by geography offer some interesting trends, it is important not to box startups into one single geography. As we show later in this report, early stage companies in Europe often transcend multiple geographies. Founders with global outlooks tend to exhibit multiple transnational ties, and their companies, seeking a global market can, and are often headquartered in countries where the entire team might not reside permanently.

[1] When it comes to determining attributing a country of origin for these companies, there often lacks a consensus. But for the purpose of quantitative analysis however, one has to make a distinction. Tech.eu's data makes a justification on a startup location by looking at a company's founding team and where the majority of the team is based. We use a multiple of sources to help make these distinctions, however, that doesn't necessarily make it easy. Take the case of Revolut, a company largely based in London, with a Russian-born founder, that is currently angling for a Lithuanian banking licence. Is the company British, Russian, or soon to be Lithuanian, based on the outcome of the licence? In this case, Tech.eu would attribute the company to the UK, as it where the company claims it's headquarters and where the founder seemingly resides.

# Investment in early stage companies by sector

Investment by industry



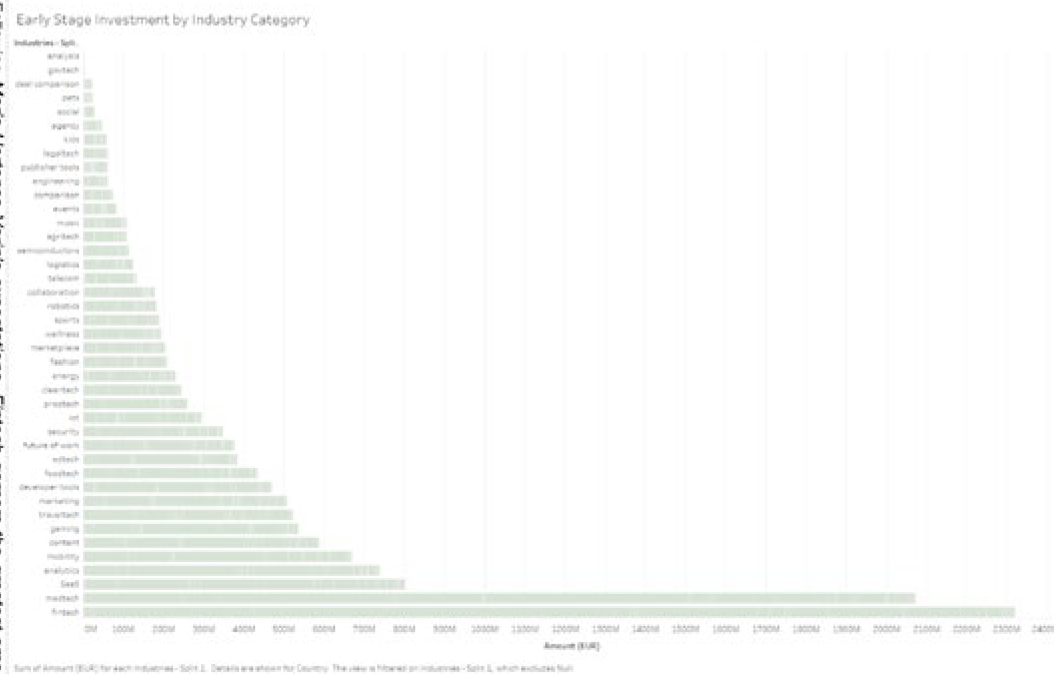

Industries - Split 1. Color shows sum of Amount (EUR) Size shows sum of Amount (EUR). The marks are labeled by indsutries - Split 1.

> "I believe Fintech is one of the most promising verticals in Europe today, as a unique combination of factors is pushing for unprecedented growth in the sector. First, recent regulatory push towards open banking creates new opportunities for disruptors; second, broad adoption of advanced AI techniques in this data-rich sector allows FinTech's to personalize their products and dramatically improve customer experience; finally, changing customer mentalities gives opportunities for Fintech to create and distribute complex financial products in innovative ways, while banks continue to experience lower customer trust and satisfaction.

**MARIE-HORTENSE VARIN, PRINCIPAL AT PARTECH**

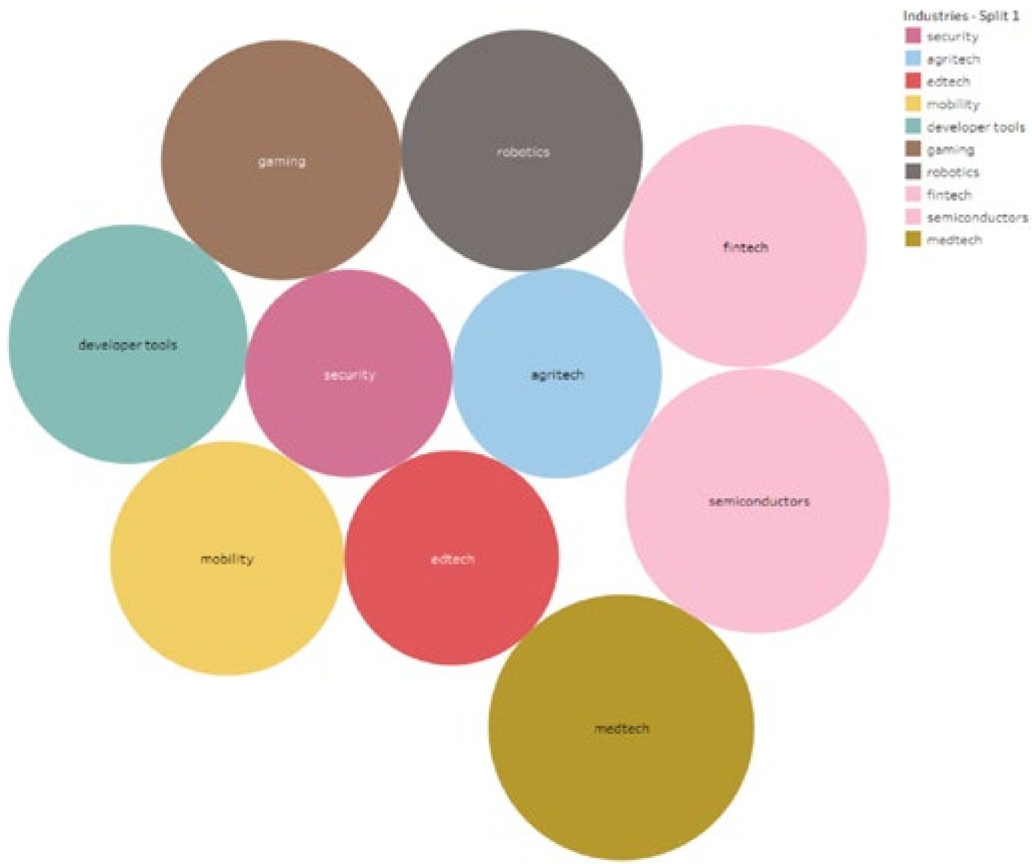
Partech is a global investment firm that was founded in Silicon Valley in 1982. Today they have over $1.2 billion under asset and finance a wide range of technologies and businesses for enterprises and consumers, from software, digital brands and services, to hardware and deep tech across all major industries. They enjoy a wide presence in Europe, operating out of offices in Paris and Berlin.

Following Marie-Hortense Varin's expectations, Fintech garners the greatest amount of overall early stage investment during 2015-2018 (q2).




| Industries - Spl.. | |
|---|---|
| fintech | 2,318.20M |
| medtech | 2,070.55M |
| SaaS | 800.72M |
| analytics | 738.31M |
| mobility | 667.63M |
| content | 586.50M |
| gaming | 534.67M |
| traveltech | 520.31M |
| marketing | 506.67M |
| developer tools | 469.02M |
| foodtech | 431.34M |
| edtech | 384.10M |
| future of work | 375.51M |
| security | 345.04M |
| iot | 293.03M |
| proptech | 257.47M |
| cleantech | 241.96M |
| energy | 229.64M |
| fashion | 207.47M |
| marketplace | 203.06M |

Average Investment by Industry Category, top 10 fields (Early Stage Ventures in Europe, 2015-2018 Q2)



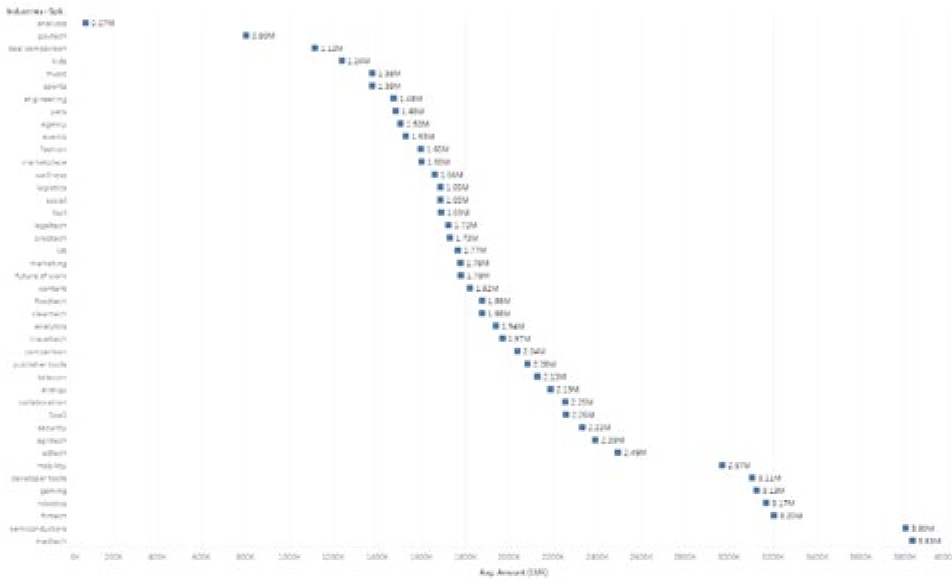

Split 1. Size shows average of Amount (EUR). The marks are labeled by
t 1, which keeps 10 of 42 members.

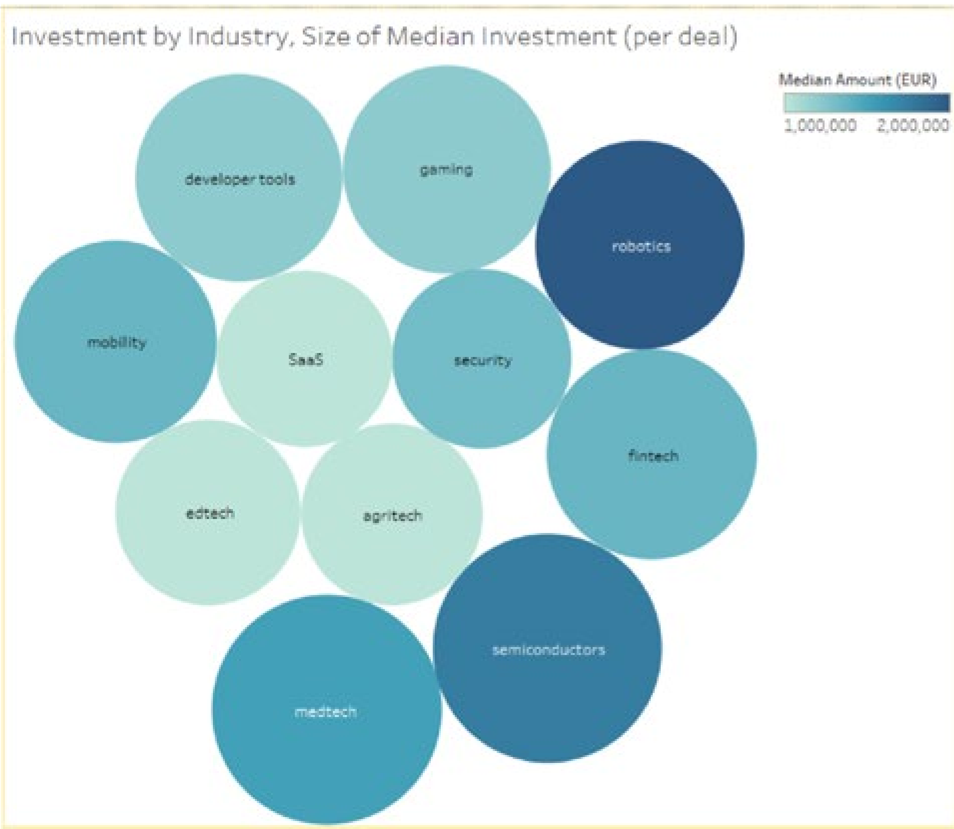
Average Investment by Industry Category, top 10 fields, per deal (Early Stage Ventures in Europe, 2015-2018q2)

| | |
|---|---|
| security | €2.33M |
| agritech | €2.39M |
| edtech | €2.49M |
| mobility | €2.97M |
| developer tools | €3.11M |
| gaming | €3.13M |
| robotics | €3.17M |
| fintech | €3.20M |
| semiconductors | €3.80M |
| medtech | €3.83M |

The above bubble graph displays the top 10 highest average investments per deal across all European early stage venture funding. When looking at the average values, we find that the category with the largest average investment across the continent is in Medtech, with an average investment of just under 4 million euros. The second highest average investment category is semiconductors, followed by fintech and then robotics.

# Average Investment By Industry



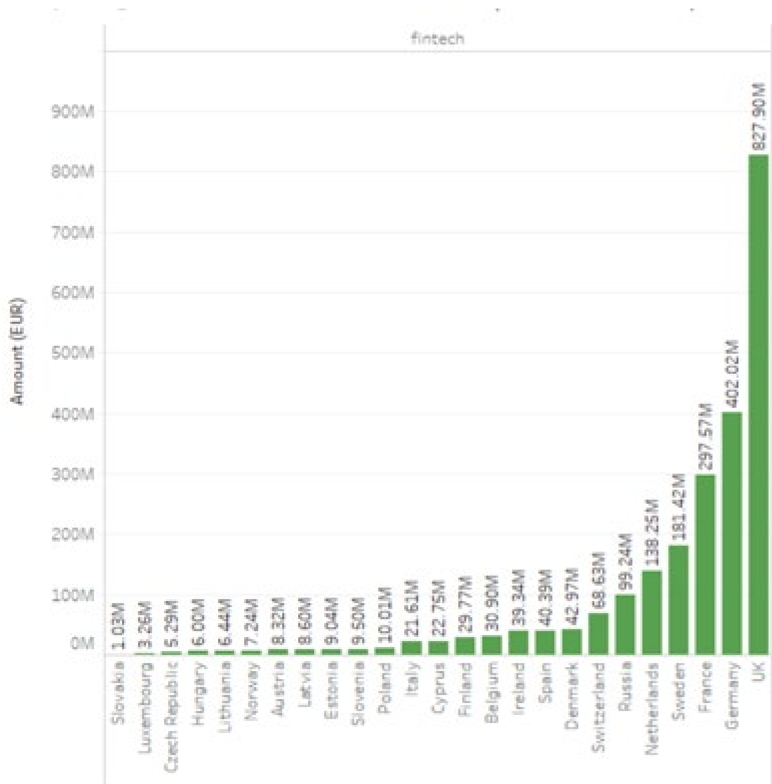


| Industries | Avg. Amount (EUR) | Median Amount (EUR) |
|---|---|---|
| SaaS | 2,225,000 | 1,000,000 |
| Security | 2,331,000 | 1,309,200 |
| Agritech | 2,391,000 | 1,000,000 |
| Edtech | 2,494,000 | 1,000,000 |
| Mobility | 2,967,000 | 1,363,000 |
| Developer tools | 3,106,000 | 1,200,000 |
| Gaming | 3,126,000 | 1,200,000 |
| Robotics | 3,168,000 | 2,000,000 |
| Fintech | 3,202,000 | 1,365,000 |
| Semiconductors | 3,801,000 | 1,752,000 |
| Medtech | 3,834,000 | 1,518,000 |

However, when we instead compare the median investment values per industry, a few significant results jump out. When evaluating all categories, average values, can be influenced by outlying variables. Investment trends are particularly sensitive to outlying figures. This can result when you have a number of particularly high deal rounds (or particularly low ones), which can push the average values upwards (or downwards). For example, a very large round, such as UK challenger bank, Starling Bank's £48 million Series A round, received in January 2016 effectively inflates all UK early stage fintech rounds, by it's very inclusion in the frequency. When we rely on the mean value, or look only at the absolute value when it comes to funding levels during a certain quarter, particularly valuable deals like Starling Bank's can impact how we interpret the overall quality of the ecosystem.

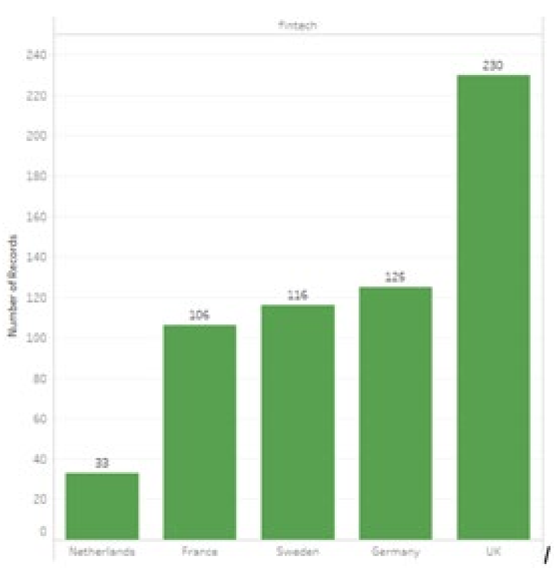
Another way to evaluate the overall quality of the ecosystem that can reduce the distortions created by outlying figures is by comparing the average value to the median value. Earlier, we described how median values can remove some of the distortions that occur when particularly large deals are signed. When looking at the above table, we can see that the average value is much higher than the deal median. Median values are calculated by identifying the middle value of a string of numbers. An equal number of values will come before and behind the median value, putting it somewhere at the midpoint. Making country- or sector- generalizations about investments has only a limited value, given the considerable variance between companies. However, the median value can help point to certain patterns in the data, such as indicating what type of companies tend to receive higher deals compared to others. Here, we find that robotics startups have the highest median value when compared across the entire spectrum of industries. This indicates that the midpoint of the distribution of investments to robotics startups in our dataset is higher than that in other industries we analyze.

Early Stage Investment, Fintech totals (2015-2018 Q2)

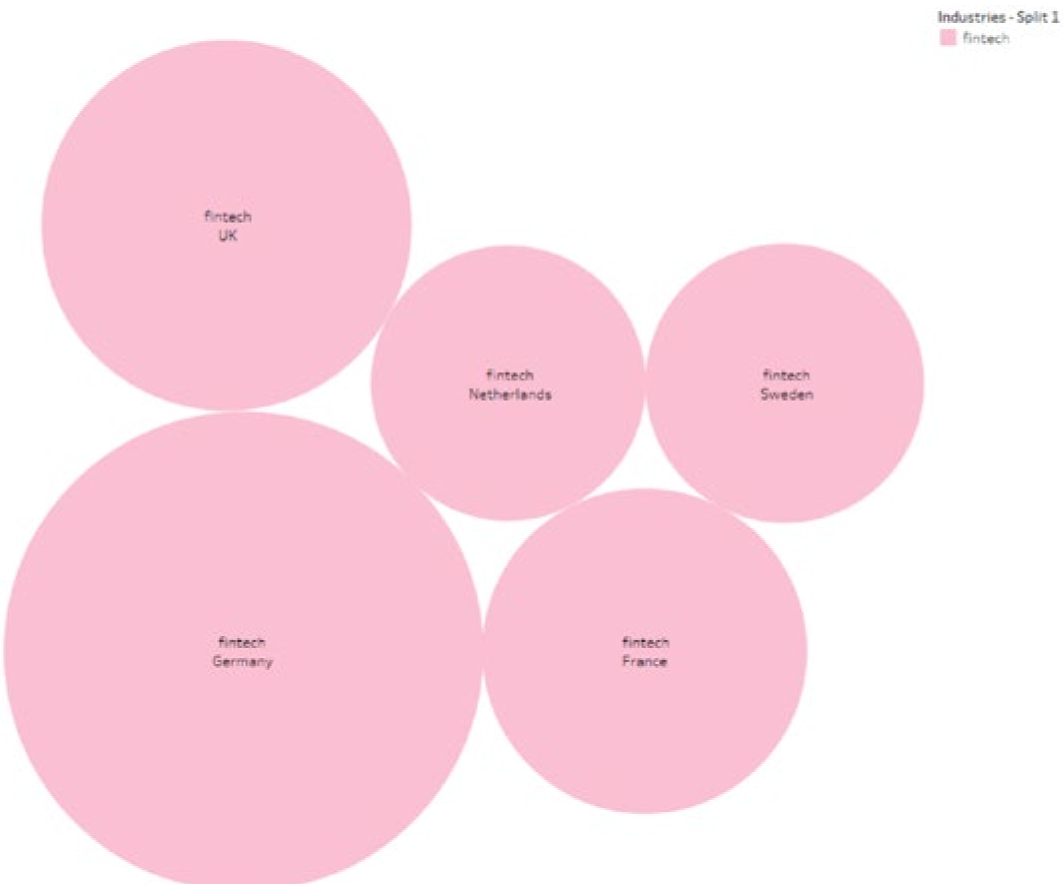



Looking at the average and median values of funding rounds can help give a more nuanced picture when compared to depictions of absolute values, as we see in the Fintech graph above. The graph clearly shows that the UK attracts the greatest amount of investment and the most deals across the continent in this category.

Early Stage Investment, Number of Fintech deals (2015-2018 Q2)



Median Investments in Fintech, top 5 countries




| | Country | | | | |
|---|---|---|---|---|---|
| Industries - .. | Netherlands | Sweden | France | Germany | UK |
| fintech | 1,000,000 | 1,030,000 | 1,400,000 | 3,050,000 | 1,818,181 |

There might be a few interesting reasons for this. First, we have to keep in mind that the overall investment level into the UK is much higher than that of Germany's. The UK median is lower because the UK's total deal flow also includes a higher frequency of smaller deals as compared to Germany, moving the median downwards. Does this mean that the fewer investments funded in Germany tend to be of higher quality and higher value than those in the UK? While this might be a simple conclusion to draw from these depictions, it is often inappropriate to compare deal flow numbers like this. Germany and the UK (and indeed, all other countries in Europe) have different practices when it comes to reporting deal flow. Countries with a greater number of international investors (such as the UK) tend to be more visible and open with their funding rounds and the deals that they make. Many private deals are only disclosed-- and thus the totals invested are not known. So it is important to use these figures as suggestive depictions, rather than an exhaustive account of an incredibly diverse and varied landscape.

## Early Stage Investment, Number of Fintech Deals

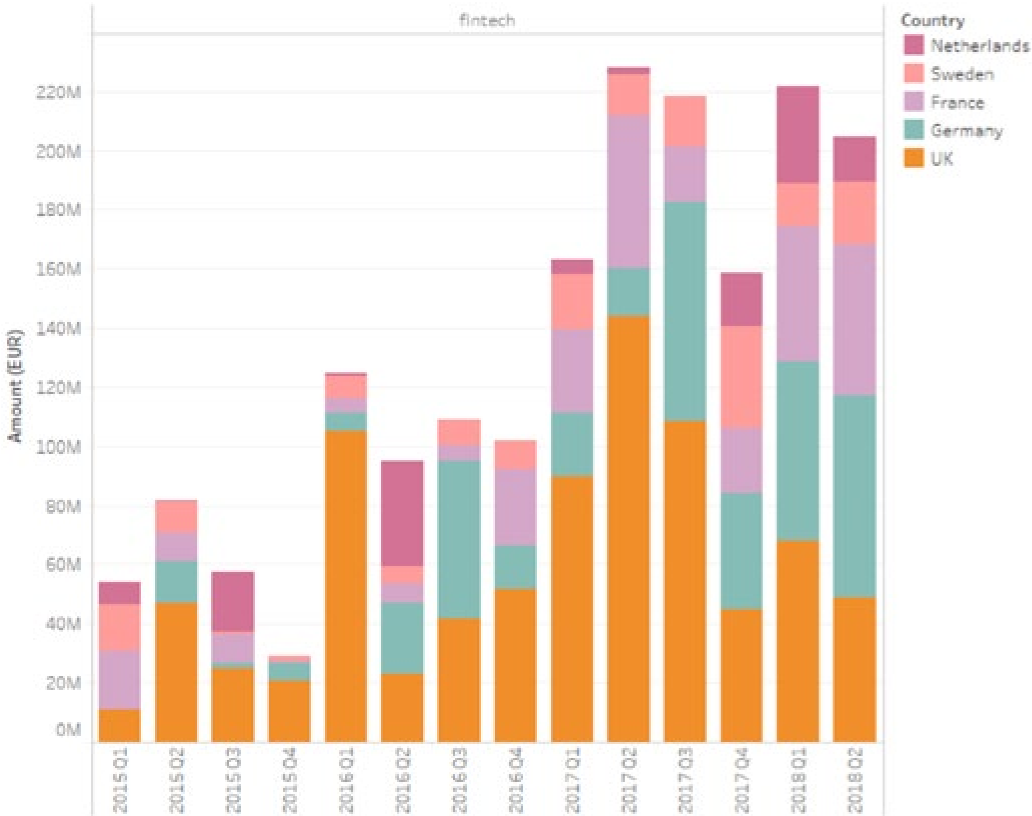

Rather than comparing countries against one another, which is inexact and has limited leverage-- a more valuable assessment is to compare country performance over time. By looking a one country's performance over time, you can begin to build a relative picture of that country's performance. Here, when we look at fintech deals from 2015 to 2018, we see the distribution of deals for top five countries in fintech.

Industries - Split 1 / Quarter

fintech

| Country | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 Q1 | 2017 Q2 | 2017 Q3 | 2017 Q4 | 2018 Q1 | 2018 Q2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Netherlands | 6 | 1 | 5 | | 2 | 7 | 1 | | 2 | 1 | 1 | 3 | 3 | 1 |
| France | 6 | 3 | 1 | 1 | 7 | 7 | 4 | 14 | 13 | 15 | 5 | 8 | 13 | 9 |
| Sweden | 2 | 4 | 2 | 5 | 11 | 7 | 10 | 9 | 9 | 12 | 12 | 14 | 5 | 14 |
| Germany | | 5 | 6 | 13 | 5 | 12 | 13 | 10 | 15 | 11 | 10 | 8 | 9 | 8 |
| UK | 9 | 13 | 11 | 8 | 17 | 12 | 17 | 15 | 21 | 18 | 28 | 19 | 26 | 16 |

## Fintech Total Investment




What we see from the above graph is that when it comes to investment in European fintech, the landscape has diversified across the past three years in question. While the UK has tended to capture a significant amount of deals in fintech-- we find that in the last six quarters, overall investments are higher and that the distribution of spending is much more varied than it has been in previous years.

## Beyond VC: How companies raise investment outside VC

While European founders are raising more investment than ever before, at the same time founders are looking beyond venture capital. Increasingly, founders are turning to alternative models of investment to advance their companies. Some of these strategies include equity crowdfunding, ICOs/ token sales, or bootstrapping to revenue models. Systematic data on these various funding models remains limited. The European Business Angels Network estimated that equity crowdfunding captured 5.5% of the early stage investment market in 2017, for a total investment of €63 million.[2] However, a European Union Factsheet announcing the EU's new #crowdfundingEU initiative citing data from the Cambridge Centre for Alternative Finance puts the value of crowdfunding across Europe much lower, at only €7.7 billion. Despite the uncertain figures, today, more crowdfunding platforms are available to European companies than ever before, including Seedrs (UK), Mymicroinvest (Belgium), Crowdcube (UK), FundedByMe (Sweden), Invesdor (Finland), Companisto (Germany), SPREDS (Belgium), Funding Circle (UK), Seedmatch (Germany), Funderbeam (Estonia), WiSEED (France) and Startupxplore (Spain).

Another growing investment model, Initial Coin Offerings, or ICOs have also become a popular way for founders to grow their ventures. Here as well, the data on the magnitude of this investment remains mixed. According to the European Business Angels network, ICOs were estimated to attract €1.75 billion in Europe in 2017.[3] Alternatively, data shared by Funderbeam found a much smaller share of investment, finding ICOs raised just $637 million for European companies in 2017, accounting for 3.83% of the $16 billion raised overall through traditional investment.[4]

[2] European Business Angels Network 2017 Compendium, released 2018. Available at: http://www.eban.org/wp-content/uploads/2018/07/EBAN-Statistics-Compendium-2017.pdf

[3] Ibid.

[4] Initial Coin Offerings Funding Report, Funderbeam. Available from https://3tscapital.com/wp-content/uploads/2017/12/ICO-Funding-Report-2017.pdf Reported in Tech.eu as "European ICOs have raised $637 million this year but lag behind the US" Tech.eu by Jonathan Keane, 22 November 2017. Available at: http://tech.eu/brief/european-icos-funderbeam/

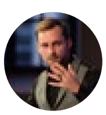
# Technology Trends

## Artificial Intelligence

> “The industry is unanimous: AI will change the world and be ubiquitous in tomorrow’s economy. AI major gains are likely to focus on productivity, efficiency, automation and costs, enabling consumers and businesses to capitalise on the digital economy. However, companies that fail to recognise the advent of AI and respond to them by disrupting themselves, innovating and re-engineering their business models will, at best, lose their competitive advantage, and at worst, disappear.”[5]

When examining technology trends in Europe, Artificial Intelligence (AI) is often cited as one of the most exciting developments, becoming an integral component across all industry verticals. The European Commission has identified AI as an area of strategic importance for the digital economy, citing it’s cross cutting applications to robotics, cognitive systems and big data analytics.

> “Artificial Intelligence is the most important technology of the 21st century. Those who build the strongest AIs, will control the world.”



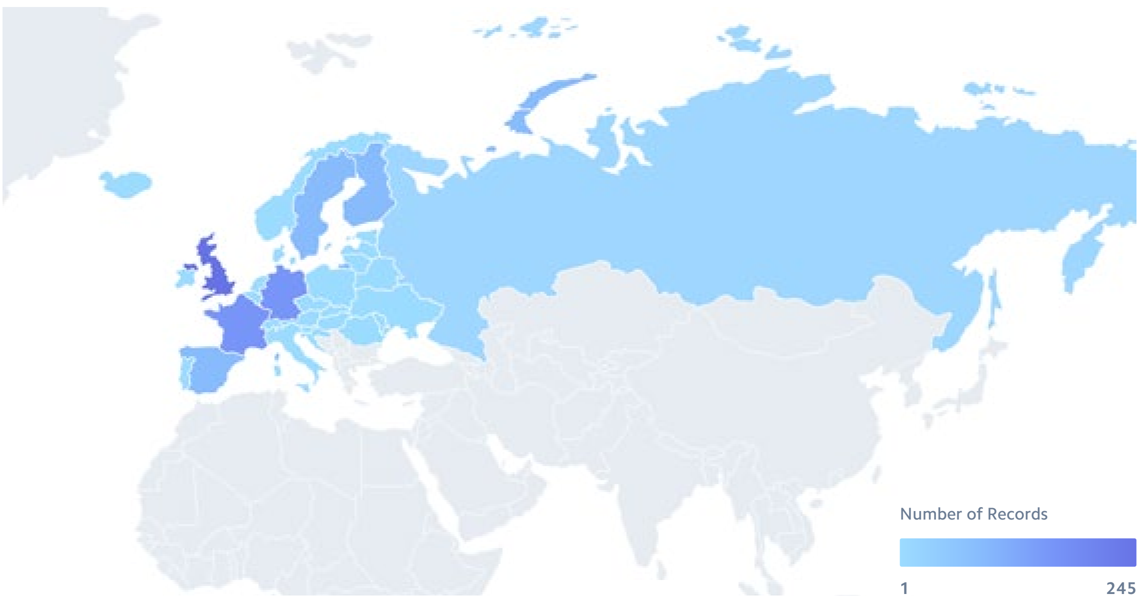
**FABIAN J. G. WESTERHEIDE, MANAGING PARTNER, ASGARD**
CEO OF THE RISE OF AI CONFERENCE
AI COORDINATOR BUNDESVERBAND DEUTSCHE STARTUPS

European companies are among some of the world leaders in AI technology. DeepMind technologies, a British AI firm bought by Alphabet in 2014 applies their research to solving some of the world’s most complex questions. DeepMind has put their technology to work in many capacities, from treating eye diseases, to teaching computers to build visual representations of interior landscapes. Bloomsbury AI, another UK artificial intelligence company purchased by

[5] “Harnessing the economic benefits of Artificial Intelligence” European Commission Digital Transformation Monitor, November 2017. Available at: https://ec.europa.eu/growth/tools-databases/dem/monitor/sites/default/files/DTM_Harnessing%20the%20economic%20benefits%20v3.pdf

Facebook in 2018 works to fight fake news using natural language processing. BenevolentAI, another UK-based AI company is worth an estimated $2 billion. The company applies its AI algorithms to drug discovery in an effort to design new molecules to treat disease. Across Europe, innovation in AI remains an area of growth. Asgard, a Berlin-based VC firm specializing in AI technologies, alongside German consulting firm Roland Berger identified 789 AI companies in Europe, reflecting nearly 23% of the global total.[6] The UK, with 245 AI startups ranks fourth globally, after the United States, China and Israel. France and Germany appear at places 7th and 8th in the global rankings.

European Share of AI Companies, from Asgard VC and Roland Berger's global list of AI companies, 2018



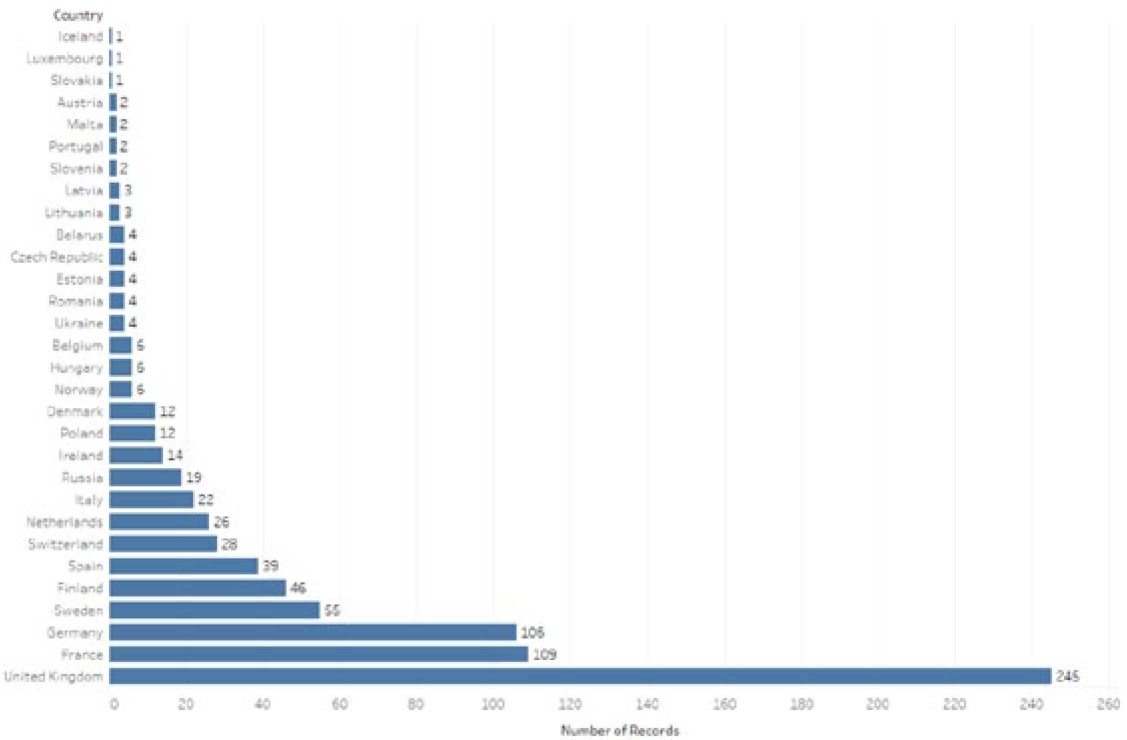

Despite accounting for almost a quarter of all AI startups globally, and some of the world's most promising companies, Europe falls behind—both in patenting and investment—when compared to global AI leaders, the United States and China.[7] In an effort to support this, the Commission's Horizon 2020 funding includes considerable funding AI, allocating €700M EU funding specifically

[6] "Artificial Intelligence activities" in DG CONNECT. By Anne Bajart, Head of Sector Robotics Industrial Development and Impact Robotics and Artificial Intelligence, Directorate-General for Communication Networks, Content and Technology, European Commission. Available at: https://ec.europa.eu/growth/tools-databases/dem/monitor/sites/default/files/6%20Overview%20of%20current%20action%20Connect.pdf

[7] "Artificial Intelligence –A strategy for European startups Recommendations for policymakers". Asgard VC and Roland Berger. Released 14 May 2018. Available from https://asgard.vc/wp-content/uploads/2018/05/Artificial-Intelligence-Strategy-for-Europe-2018.pdf Page15.

for robotics and AI components (out of an overall investment of €2.8 billion), €120M for the AI-enabled “Human Brain” project, €250M for a program on AI and big data analytics, €20M for IoT pilot on autonomous vehicle and a further €20M for their AI-on-Demand platform.[8] These public investments are integral for the development of early stage companies utilizing AI, especially as these exciting technologies begin to find more and more marketable use cases.

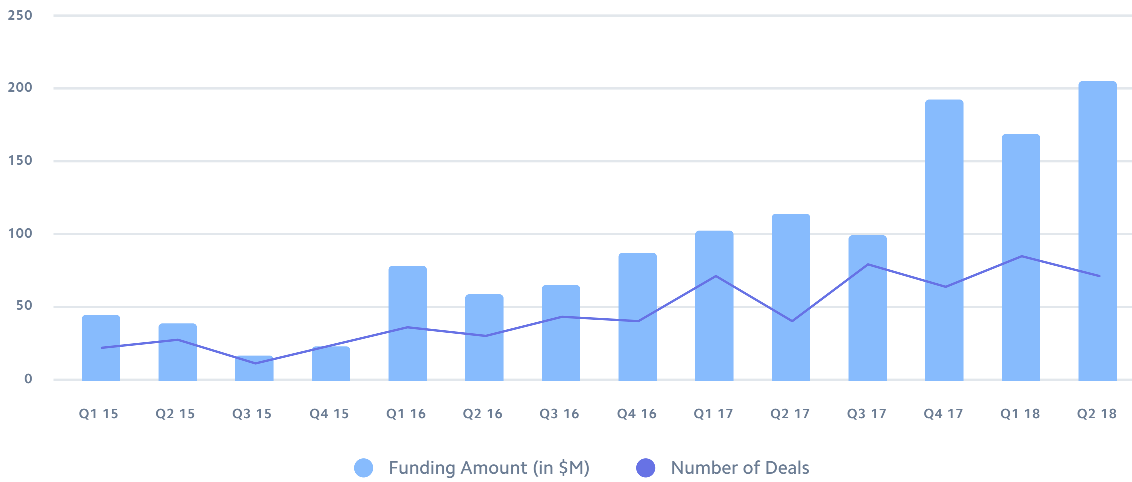
European Share of AI Companies, from Asgard VC and Roland Berger’s global list of AI companies, 2018




https://ec.europa.eu/growth/tools-databases/dem/monitor/sites/default/files/6%20Overview%20of%20current%20action%20Connect.pdf

[8] “Artificial Intelligence activities” in DG CONNECT. By Anne Bajart, Head of Sector Robotics Industrial Development and Impact Robotics and Artificial Intelligence, Directorate-General for Communication Networks, Content and Technology, European Commission. Available at:

Seed and Series A Investment in Europe, Artificial Intelligence




| | Funding Amount (in $M) | Number of Deals |
|---|---|---|
| Q1 2015 | 43.9 | 21 |
| Q2 2015 | 36.7 | 28 |
| Q3 2015 | 17 | 16 |
| Q4 2015 | 24.6 | 30 |
| Q1 2016 | 79.1 | 37 |
| Q2 2016 | 60.3 | 30 |
| Q3 2016 | 65.3 | 40 |
| Q4 2016 | 88.2 | 38 |
| Q1 2017 | 105.1 | 68 |
| Q2 2017 | 114.8 | 39 |
| Q3 2017 | 99.6 | 78 |
| Q4 2017 | 195.2 | 64 |
| Q1 2018 | 176.1 | 82 |
| Q2 2018 | 204.6 | 69 |

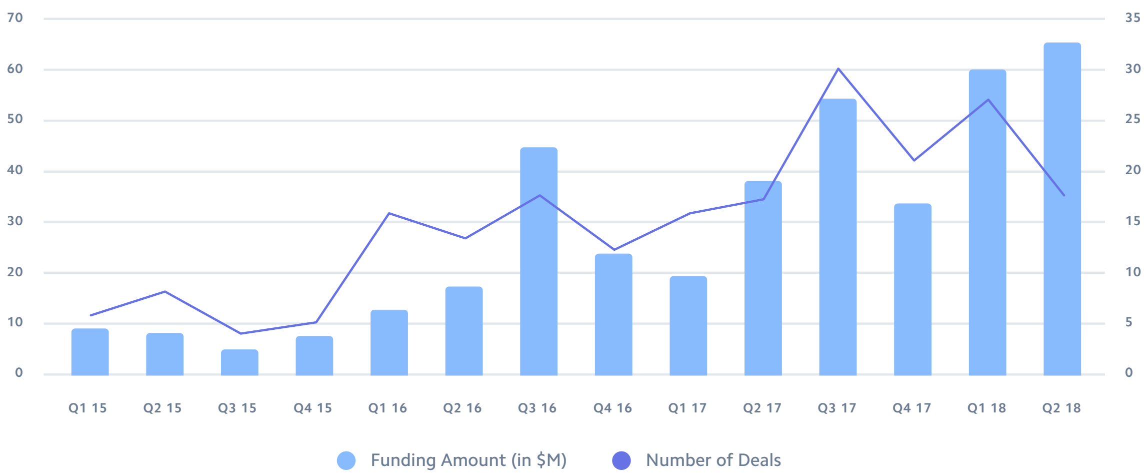
As AI innovation continues to develop, investors have increasingly begun to support early stage European companies working with these technologies. The graph above, generated from data collected by CB Insights shows a strong upwards trajectory in seed, and Series A funding for European companies utilizing AI technologies in Europe. This follows a general increase in the number of deals made across the continent at this early stage, beginning with 21 deals in Q1 2015 and rising to 69 in Q2 2018. The largest Series A investment to a company working with AI technology in the last three years was made to Ada Health, a Berlin based firm utilizing AI to become the "Alexa for health". Launched only in 2016, the company has become one of the world's fastest growing medical apps. The Series A round was valued at $47M (€40M).[9]

[9] "Berlin's Ada Health raises $47M to become the Alexa of healthcare". Mike Butcher, TechCrunch 31 October 2017. Available at https://techcrunch.com/2017/10/31/berlins-ada-health-raises-47m-to-become-the-alexa-of-healthcare/

## Machine Learning

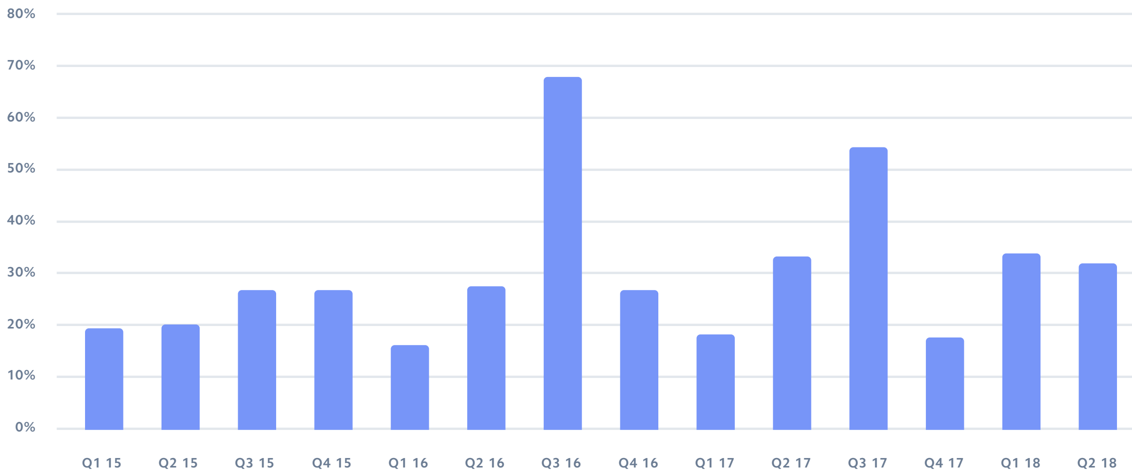
Machine learning is a unique branch of artificial intelligence that automates analytical model building. The science behind machine learning is not new, but today's big data capabilities allow algorithms to adapt and react to previous results. Machine learning has significant implications for many applications, from the ability to achieve higher levels of efficiency, automate repeated applications, identify insight in data and make future predictions using existing data points.

Seed and Series A Investment in Europe, Machine Learning




Machine learning technologies represent a significant part of all investment into European AI startups. When looking specifically at investments in seed and Series-A rounds for European startups developing these technologies, we find a clear upwards trajectory, according to data collected by CB Insights. Deals made for companies working with machine learning started slowly in 2015, but has since gained significant traction. In Q2 2018, a high of $65 million was invested into early stage companies developing  machine learning technologies. This figure represents nearly 32% of all early stage funding invested into AI startups across Europe.

Percentage of investment made into Machine Learning out of total AI investment (Seed and Series-A rounds in Europe 2015-2018 Q2) CB Insights




| | Funding Amount (in $M) | Number of Deals |
|---|---|---|
| Q1 2015 | 8.42 | 6 |
| Q2 2015 | 7.27 | 8 |
| Q3 2015 | 4.49 | 4 |
| Q4 2015 | 6.48 | 5 |
| Q1 2016 | 12.4 | 16 |
| Q2 2016 | 16.1 | 13 |
| Q3 2016 | 44.4 | 17 |
| Q4 2016 | 23.3 | 12 |
| Q1 2017 | 19 | 16 |
| Q2 2017 | 38 | 17 |
| Q3 2017 | 53.6 | 30 |
| Q4 2017 | 33.3 | 21 |
| Q1 2018 | 60.1 | 27 |
| Q2 2018 | 65 | 17 |

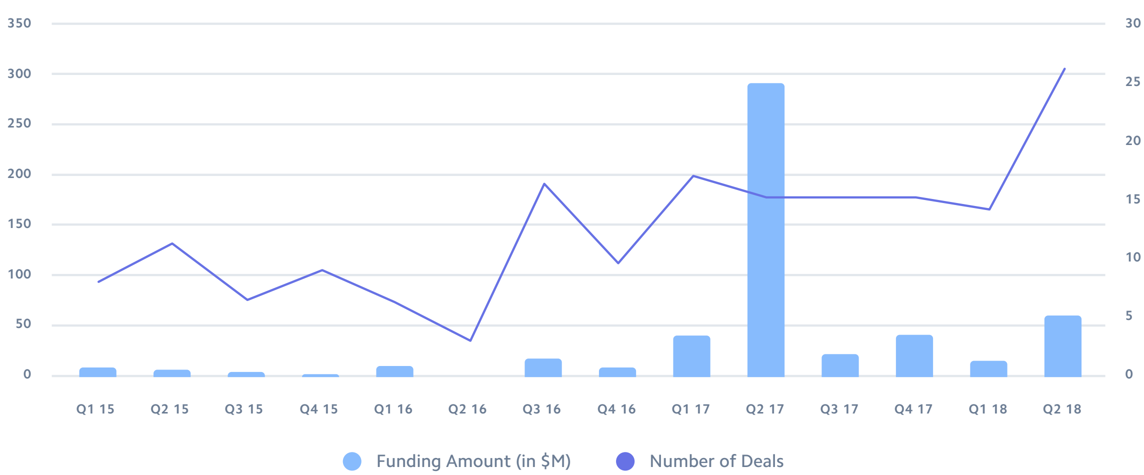
## Blockchain

Blockchain, the "technological heart" and infrastructure behind the Bitcoin cryptocurrency, provides a secure way to share information, reducing the need for intermediaries and regulatory authorities. The technology has multiple applications for secure information storage, with probable use cases across many verticals, for example, enterprise software, SaaS, and most importantly, fintech. Blockchain technologies have paved the way for the flourishing investment markets for ICOs, as we detail elsewhere in this report.

> "Although some Blockchain applications are fully deployed and can be considered mature, the technology still has substantial limitations."[10]

Blockchain remains new, and the growth and utilization of blockchain technologies outside of Bitcoin has been associated with considerable hype and speculation. This hype is often fueled by ICOs and public involvement in token sales, and due to this fragmented landscape, it often remains difficult to capture robust data on the investments in this sector. The graph below, generated from data collected by CB Insights on European companies utilizing Blockchain technologies in Europe, gives some insight into the investment in this space. We see that the amount of seed- and Series-A deals into these companies has ranged between 2, and 26 deals per quarter from 2015 to 2018.

Seed and Series A Investment in Europe, Blockchain




[10] "Digital Transformation Monitor: Blockchain". European Commission, January, 2018. Available at: https://ec.europa.eu/growth/tools-databases/dem/monitor/sites/default/files/DTM_Blockchain%20v2_0.pdf

Most notably, we see a considerable spike in investment in Q2 2017, this figure captures a few notable ICOs. First, in May 2017, Spanish-Swiss Aragon raised nearly $25 million in 26 minutes[11]. According to Aragon, at the time, this investment represented the fourth largest crowdfunding event in history, and the second largest in blockchain. The next month, they were shortly outdone by the Swiss-based Bancor Protocol, which raised an estimated $153 million in three hours[12]. The crowdfunding round was led by Tim Draper and Blockchain Capital. A week later, Russia's SONM, a decentralized fog computing platform raised $42 million in four days[13].

| Blockchain | Funding Amount (in $M) | Number of Deals |
|---|---|---|
| Q1 2015 | 6.32 | 8 |
| Q2 2015 | 5.82 | 11 |
| Q3 2015 | 3.26 | 6 |
| Q4 2015 | 2.98 | 9 |
| Q1 2016 | 7.02 | 6 |
| Q2 2016 | 1.66 | 2 |
| Q3 2016 | 13.5 | 16 |
| Q4 2016 | 6.85 | 10 |
| Q1 2017 | 36.6 | 17 |
| Q2 2017 | 290.1 | 15 |
| Q3 2017 | 19.1 | 15 |
| Q4 2017 | 39.1 | 15 |
| Q1 2018 | 15.2 | 14 |
| Q2 2018 | 56.1 | 26 |

[11] "The Aragon Token Sale: The Numbers". Argon Blog. Available at: https://blog.aragon.org/the-aragon-token-sale-the-numbers-12d03c8b97d3/

[12] "Bancor Protocol: Token Launch Report" Smith and Crown analytics. Available at: https://www.smithandcrown.com/sale/bancor-protocol/

[13] "SONM "Spectacularly Successful" ICO Nets $42 Mln in Four Days". Coin Telegraph. Available at: https://cointelegraph.com/news/sonm-spectacularly-successful-ico-nets-42-mln-in-four-days

# The experience of early stage companies in Europe: Acceleration Programs

## Case Study: ObjectBox

> “Right from the start when we first had the idea in summer 2015, we knew ObjectBox would need VC funding. Because ObjectBox is a database and thus a highly technical product, it just requires a lot of upfront work. And as a team of two from Germany with a rather technical local network, we decided on that very day, we needed to be part of one of the top accelerators first..”
>
> **— DR. VIVIEN DOLLINGER, CO-FOUNDER AND CEO OF OBJECTBOX**

ObjectBox, based in Munich and London is an easy & fast object-oriented mobile database for Android and Linux. ObjectBox enables app and IoT developers to devote their valuable time to what makes their apps stand out instead of bothering with storing and retrieving data.

The story of ObjectBox began when cofounders Markus Junginger and Dr. Vivien Dollinger met at university in Augsburg where they were studying multimedia. After university, they re-connected and founded their first company together, greenrobot in 2009. Six years later, they changed focus and started ObjectBox.

From early on in ObjectBox’s creation, Vivien and Markus knew they wanted to join an accelerator program. With their previous company, the founders had already tried to build their own products on the side of their client’s work. They found that the process often became frustrating, as client’s projects rarely left time to work on their side projects. The team decided that rather than split their attention, they needed to go all in on a new venture. Vivien explains, “It was a very tough decision and the time before Techstars was really hard. As ObjectBox requires a lot of upfront development work, fully self-financing until revenue was out of range for us. So, the time was running….That put a lot of pressure on us. In retrospect, it was the right decision.”

When Vivien and Markus decided to take the plunge with ObjectBox, they quickly developed a prototype and applied to Y Combinator. They were surprised when they were called for an interview shortly afterwards and when they interviewed Vivien admits they weren’t ready. Without adequate preparation, their application to YC was not accepted. The team did not give up and next focused their attention on applying to an accelerator in Berlin. By then, they had released a very early alpha version, and were invited for a telephone interview, which Vivien recounts “we - again - failed very much”. But they remained motivated. Vivien and Markus applied to the same accelerator for a second time, and were finally offered an onsite interview. But despite their chances to succeed increasing nearly to 50% at this stage, Vivien and Markus learned that they had failed again. Despite the bad news, the team refused to give up.

Not long after their third unsuccessful accelerator interview, the accelerator staff invited Vivien and Markus to interview with their programs in London and New York. After 20 rounds of interviews and multiple re-written applications, the team’s perseverance paid off when Vivien and Markus were finally accepted to Techstars in 2017.

## What advice do you have for others looking to apply to an accelerator program?

“We didn’t know anyone [at Techstars], so in retrospect I think we were incredibly lucky that we somehow got picked out of the many Berlin applications…once you are at the interview stage other Techstars MDs will look at your company too…Do get someone who is in the network to recommend you!”

**— DR. VIVIEN DOLLINGER, CEO AND CO-FOUNDER OF OBJECTBOX**


Markus Junginger and Dr. Vivien Dollinger, Co-Founders of ObjectBox

# Case Study: FindMeCure

> “Once we joined the program we’ve met the rest of the family- these people continue to support us long after schools out.”
>
> **— MIROSLAV VALCHEV, CO-FOUNDER AND COO OF FINDMECURE**

London- and Sofia- based FindMeCure is the “Google for Clinical Trials”. The company helps anyone easily find future treatments and apply for participation in studies within a few clicks. In 2017, the company went through a London Accelerator program and has gone on to raise follow on investment from Techstars and LAUNCHub Ventures.

FindMeCure’s founding team met in 2007 while the three eventual co-founders were working for a company providing software solutions for the clinical research industry. After the company was sold, Maya Zlatanova started a company Astra Nova Ltd., and Miroslav Valchev and Ivaylo Yosifov started a software consultancy, providing complete solutions to companies working on healthcare projects. In 2015, Co-Founder Maya approached Miro and Ivo with the idea that would later become known as FindMeCure. The trio joined forces with the mission of democratizing the access to clinical trials.

Miro and Ivo provided the initial funding and incubated FindMeCure within their software consultancy. In 2017, the team decided to take the company to the next level. They choose to participate in an accelerator and take advantage of the programs vast network spanning multiple countries and industries. They also appreciated the way the program was structured to give founders good understanding of all aspects needed to run a successful company.

## What advice do you have for others looking to apply to an accelerator program?

“My advice for early-stage founders, considering to participate in any kind of accelerators/incubators is to choose wisely. Everyone should be able to pinpoint their short-comings and where they need help. Even the best program can’t help you if you don’t know what you should improve and most of all if you are not proactively going after it. It is #givefirst, but you can’t give anything to a person who does not want to accept it.”

**— MIROSLAV VALCHEV, CO-FOUNDER & COO OF FINDMECURE**

Team FindMeCure

# Crowdfunding allows the community to share in the journey

## Case Study: Plum

> "Our users are a huge part of Plum and it is important to us that they be able to share in our journey. We get a large number of requests from users to be able to invest in Plum, not just with Plum, and this [equity crowdfunding] was our way of allowing everyone to get involved in this exciting next step. We had a very successful round with Seedrs back in 2017 and worked well with the team there. They understand Plum and the value we bring to the market so it felt right to stay with them."
>
> — **PLUM CO-FOUNDERS ALEX MICHAEL, CEO (PICTURED TOP) AND VICTOR TROKOUDES, CTO (PICTURED BOTTOM)**

London-based Plum is the world's first AI-powered personal savings chatbot. The company lets users to make investments from as little as £1, allowing investing to become accessible to everyone. When it came to raising investment, crowdfunding was a natural choice for co-founders, Victor Trokoudes and Alex Michael. Plum has raised two successful equity crowdfunding campaigns on Seedrs, and is also supported by Athens-based venture capital fund, VentureFriends. Their first campaign attracted just under 1,000 investors and raised nearly £1,000,000 in July 2017. Their second campaign, launched in summer 2018, raised just over £850,000 in follow on funding.

The company began as a challenge between co-founders Victor and Alex. Both were living in London with similar salaries, and struggled to save money. At the end of every month, Victor put aside the money that was left over in his current account. Meanwhile, Alex, wrote a programme which regularly calculated how much he needed until the end of the month and downloaded his transactions. Whatever he didn't need was automatically transferred into his savings.

After a few months, Alex's programme enabled him to save almost double what Victor saved.

What's more, Alex hadn't had to change his spending habits or even remember to put the money aside. The result, became the early concept for Plum. Today, the company maintains offices in London and Athens and aims to use their most recent funding to grow the company further.

Team Plum

### What should other founders know about choosing equity crowdfunding?

"Be prepared to engage with the investment community and aware of the time this will take. There will be lots of questions and discussions which you need to have a voice in."

**— PLUM CO-FOUNDERS ALEX MICHAEL AND VICTOR TROKOUDES**

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## Case Study: Dr. Focused

> "We raised equity crowdfunding on CrowdCube. [As we developed our product] we had many people that were doctors that were interested [in the platform] and wanted to get involved. For us, it made sense to bring them along. With crowdfunding, by offering equity in exchange for investment, it allows our supporters to do well if we are able to succeed."
>
> **— DR. KIT LATHAM, CO-FOUNDER AND CEO OF DR. FOCUSED**

Dr. Focused is a back office solution for the healthcare industry, allowing medical professionals to spend more time treating patients, rather than filling out paperwork. Prior to founding Dr. Focused, co-founder and CEO Dr. Kit Latham was working as an accident and emergency doctor and noticed how administration and staffing costs wasted both time and money for doctors and hospitals. During a part time master's in technology entrepreneurship course at University College London, Dr. Latham connected with fellow student Artem Stalpousk, who had worked previously in medical software design. Artem shared many of Kit's frustrations with the poor user experience of existing healthcare software, and the two began to work together. Joining together with another student, Dr. Focused went on to win UCL's Bright Ideas Award, one of the world's leading examples of support for university entrepreneurs. The award's £10,000 in prize money and office space allowed the founders to spend the summer fully committed to the project. A mentor during their university studies encouraged the team to put together an application for Techstars London, which they successfully joined in 2016. The following year, Dr. Focused raised over £308,000 on CrowdCube for 13.38% equity, exceeding their initial goals.

Dr. Focused is headquartered in London and maintains a strong technical team in Belarus. The company's software has been chosen by some of the most advanced health providers in the UK, such as GPDQ, Qured, ZoomDoc and Medic Spot. Currently, the firm has plans to expand outside of the UK, looking toward markets in Asia, Oceania and North America.

## What should other founders know about choosing equity crowdfunding?

"Most startups fail at crowdfunding because they try to raise too much. Ask for a certain amount, and then overfund if you have the opportunity. When crowdfunding, most investment will come at the start, and then at the end, with a lull in the middle. Be sure to have some early investors to allow you to maintain that momentum... Platforms enable you to reach people that wouldn't have the confidence to invest directly. While you will get some investors from the platform, you still have to put in the work. You will need to prepare your presentation and have a good video. And you also still have to meet the investors and answer their questions. One example of this is by doing "open offices". We got our largest investor that way, right on the spot, through an Open Office visit. Sometimes investors like to look you in the eye, before they make a deal."

**DR. KIT LATHAM, CO-FOUNDER AND CEO OF DR. FOCUSED**

# Initial Coin Offerings (ICOs) / Token Sales

## Case Study: ARYZE

> "Taking the ICO route was not necessarily an easy decision, but it became apparent that this method was the best way to have global outreach. ARYZE will launch with a global product, and ICOs have a unique opportunity to create ambassadors that follow the project closely. We realized that rather than having a few major shareholders, we would want to have thousands of supporters in our community, that eventually will become our first beta testers."
>
> **— MORTEN NIELSEN, CO-FOUNDER AND CFO OF ARYZE**

Based in Copenhagen, ARYZE creates a bridge between conventional fiat money and digital cryptocurrencies by issuing fully redeemable stable coins backed by and pegged to traditional assets. ARYZE's multi-asset wallet application allows users send, receive, and store currencies with no transaction fees.

The concept of ARYZE originated on a rooftop in Tel Aviv, where co-founders Carl Jenster and Jack Nikogosian were visiting on a study trip. While there, the eventual founders had a thoughtful discussion on how to make "dumb money smart", by bringing together the amazing programmability that cryptocurrencies have into real life scenarios; a cryptocurrency for the "real world". Originally, the idea was to create an "eKroner" for the Danish market, but quickly it evolved into a concept that could be replicated to virtually any national currency.

Banker and financier Morten Nielsen joined the project after meeting Jack and Carl at several blockchain related events in Copenhagen in 2017. At the time, he was working on another project, but soon found many of his thoughts synergized with their early stage venture. In early 2018, Morten joined ARYZE as a co-founder, when it became clear to him "that ARYZE was exactly what the world needs".

Today, ARYZE includes eight core members and an extensive extended team. In the first months of the company, the company was bootstrapped and none of the members took salaries for the work they did. Co-Founder Morten Nielsen recalls, "Amazingly, our first employees and colleagues were very passionate about what we were building. Eventually, of course, people had to be able to support themselves. We began raising funds through a private token sale, which we have worked very hard to ensure compliance and absolute due diligence on. So far, we have been able to pay salaries through a combination of grants and a few individual contributors that have agreed to allow us to release funds early to support development."

### What are some of the biggest challenges for early stage founders in Europe when it comes to raising funding through an ICO or token sale?

"The investor scene is not very proactive and not particularly adventurous as far as exploring new financing strategies are concerned. In order for an ICO to be credible, you have to show that you have done your homework - it's no longer the Wild West. Corporate governance and proof of due diligence is necessary to overcome the skepticism that last years ICO craze brought about. Stay focused on your narrow deliverables to create traction and be able to prove a history of accomplishments."

**MORTEN NIELSEN, CO-FOUNDER AND CFO OF ARYZE.** PRIOR TO JOINING ARYZE, MORTEN SPENT A LONG CAREER IN FINANCE, WITH ROLES AT JP MORGAN, UBS, CREDIT LYONNAIS SECURITIES AND PARIBAS CAPITAL MARKETS.

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## Case Study: MADANA

MADANA is a platform for data analysis that uses blockchain technology to allow participants to participate in the data market using their own data. Today, the data market is a huge business. Data is collected with every user keystroke online, and millions of sensors collect data to be put to use for various functions, from targeted advertising to product optimization. MADANA lets users take control of their own collect their own data and contribute it to this market in a private, safe and transparent way. MADANA has a key difference from much of the user data that is bought and sold on the data market today: everytime a MADANA user's data is used for analysis, that user is compensated for the use of it.

MADANA's founder team met at the RWTH Aachen University in Germany. Co-Founders Dieter Schule, Christian Junger, and J.-Fabian Wenisch initially became connected thanks to their mutual interest in establishing an entrepreneurial scene in Aachen. The RWTH University is known for its technical excellence and is one of the best international technical universities in the world. While at university, MADANA co-founder Christian Junger co-founded the second Bitcoin Meetup in Germany in Aachen in 2014. From the beginning, MADANA's founding team recognized the potential of blockchain technology and has sought to share it as widely as possible. As the team recognized the potential of blockchain at an early stage, they were able to bootstrap the early days of the company with the proceeds of previous Bitcoin investments. Not long after, they attracted support from their first angel investors.

The MADANA platform is a large long-term business project aiming to revolutionize the data market and make it fairer. To ensure this, the team knew that active engagement with the community would be an integral part to ensure MADANA's success. The platform's community was involved from the beginning. By conducting an ICO, MADANA integrates and incentivizes the community to become an important pillar of MADANA. Furthermore, the PAX token enables trust through transparent actions and payments within the ecosystem.

Today, MADANA is headquartered in Berlin. The city has become one of Europe's most promising ecosystems for blockchain technologies. The city attracts a wealth of international blockchain/DLT entrepreneurs, and the ecosystem sustains a vibrant meetup and event scene around these growing technologies. MADANA's founders find Berlin to be an ideal location, thanks to the city's strong tech ecosystem and growing number of local VCs. The team appreciates that both the old e-commerce elite of Berlin and Berlin based VCs are increasingly recognizing the potential of blockchain and ICOs as funding tools. As a long term pioneer in the blockchain space, MADANA finds it can benefit from the support of both the established VCs and more newer funds.

## MADANA is an established player in Berlin's blockchain space. What should other founders know about doing an ICO?

"Plan ahead well in advance, especially the legal aspects and how you want to incorporate your Token-Structure in your Business Models. But also act fast and dynamic, because the blockchain sphere is a highly-dynamic one indeed. Conducting an ICO requires a long preparation period what founders often underestimate. We have seen many naïve founders on the market in recent years. Since an ICO is a very new development, its profile and procedure change still constantly. One has always to observe and analyse the ICO trends and adjust your own strategy and ICO timetable. Above all, many founders underestimate the importance of the legal aspects of an ICO. You have to choose the jurisdiction in which you want to set up your company and ICO with the corresponding advantages and disadvantages. Plan the legal budget well! ICO-Lawyers are very expensive due to the novelty of ICOs."

**— DIETER SCHULE, CHRISTIAN JUNGER AND J.-FABIAN WENISCH, CO-FOUNDERS MADANA**

Team MADANA

# Bootstrapping to investment

## Case Study: Causaly

> “The first time we saw the causal system of relationships we created from a few thousand biomedical papers, we realized that given more time and effort, it would have the potential to grow into something truly meaningful.”
>
> **— YIANNIS KIACHOPOULOS, CO-FOUNDER & CEO**

Causaly is an AI-enabled discovery engine for identifying cause and effect relationships in biomedicine. The London-based company uses Natural Language Processing to analyse scientific corpora and create knowledge graphs documenting millions of cause and effect relationships. These knowledge graphs are then used by researchers and medical professionals to quickly decide a course of treatment or variable for further study. Causaly was created out of an effort to better harness the world’s information. Co-Founder Yiannis Kiachopoulos explains:
“My Co-Founder Artur had recommended a great book to me; “Guns, Germs and Steel” by Jared Diamond. This book is full with reasons for how civilizations develop based on a variety of resources and conditions present in their environments. As I was reading the book and taking notes on how this system of relationships works, 450 pages later I was left frustrated that I had only captured a fraction of the system knowledge of the book. Interestingly Artur had faced exactly the same issue and so we decided to see whether we can develop algorithms which transform text into causal system diagrams - and Causaly was born. It was only later that we chose the biomedical domain as the first area to start applying our technology because we felt we could contribute most in this research-intensive domain with significant impact on human health.”

Co-founders Yiannis and Artur met in 2015 when they were selected to participate in the Global Solutions Program at Singularity University in Mountain View, CA. The highly selective program brings together talented people from different geographies to learn about exponential technologies, including Space, Robotics and AI. From these beginnings, the two founders bootstrapped their project for a year before accepting their first angel investment. The product then went through several prototype generations, as the founders continued experimenting with different approaches how to best deconstruct language and causality. The company has since gone on to partner with a number of pharmaceutical companies. In July of 2018, the team raised a seed round and opened an off-site engineering office.

"We loved bootstrapping—it was such a productive and fast-paced period of our startup, filled with ideas and a lot of rewarding moments. [But] after we completed a pilot project with Novartis and received more feedback on what matters to our users, we decided that raising investment would help to accelerate delivering a valuable product."

**YIANNIS KIACHOPOULOS, CO-FOUNDER & CEO**

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## Case Study: GoodHood.eu

> "My advice to founders would be to start talking to investors early on. You have to build trust, a relationship. The investor needs to get to know you and vice versa."
>
> **— YIANNIS KIACHOPOULOS, CO-FOUNDER & CEO**

GoodHood.eu is the leading European provider of neighbourhood social networks. The company's sites include Nebenan.de in Germany and mesvoisins.fr in France. The platforms help connect people living nearby one another to help them obtain local recommendations, connect offline and stay informed about local events. The platforms have sought to create a space to help neighbors look out for one another and build stronger communities.

Co-Founder Christian Vollmann had the idea of creating a different type of social neighbourhood network in 2013. His vision was to focus not on oversight mechanisms like "neighbourhood watch", but instead on sharing and helping each other. Two years later, he shared his idea with social entrepreneur Till Behnke, founder of betterplace.org. Till immediately shared Christian's conviction and convinced Ina Remmers and Matthes Scheinhard to join the team. Christian's brother Michael came on board as well and Sven Tantau completed the team as CTO Co-Founder. Together they set out to build the "operating system for neighbourhoods".

Christian was so committed to Nebenan that he invested a 6-digit amount of his own money to ensure the project got off the ground. For the company's first year, he worked without a salary until the firm raised their first investment. It was a group effort. The other co-founders contributed what they could, working for no or little salary as long as they could sustain it.

When it came to funding the venture, Christian's contacts in the ecosystem paid off. It was after he connected with Klaus Hommels from Lakestar, who decided 15 minutes into the conversation that he wanted to pre-empt the first external fundraising round (before it was even planned).

### What is one key lesson that you have learned on this journey thus far that you would like to share with prospective founders?

"The main ingredients to building world leading businesses are resilience and long-term thinking. I don't know about your idea, but what I do know is this: it will take you double the amount of time than you think, it will cost you triple the money and you will experience numerous setbacks on the way. The only way to be successful is to be almost inhumanly resilient. And the key to resilience is intrinsic motivation. If you are only in it for the money you won't last long…"

**— CHRISTIAN VOLLMANN, CO-FOUNDER GOODHOOD.EU**

Christian Vollmann, Founder of GoodHood.eu at the company's Berlin offices. Photo credit: JFR Creatives

## Case Study: Lookiero

> “Make sure to explain your vision clearly, that you understand the levers that drive the growth of the company and to have global plans. BAs and VCs are looking for extremely ambitious founders and projects, don´t be shy about your growth goals.”
>
> — OIER URRUTIA, FOUNDER AND CEO, LOOKIERO

Lookiero is a personal shopping service for women operating in Spain, France and the United Kingdom. Users complete a style profile that is used to curate a personalised selection of products which are shipped directly to their doorstep. The company has over 250,000 registered users and is the product of sole founder Oier Urrutia. Oier devised the concept for Lookiero after his wife shared the difficulty her friends had having finding time to go shopping once they became moms. After recalling a similar product available in the United States, Oier decided to bring the concept to Europe.

To get the company started, Oier knew he would need to take investment from the beginning. From the start, he was successful in raising enough funding to validate the product-market fit. With that validation, the next funding rounds were focused on growth. He made sure to partner with investors that would bring smart capital rather than maximizing valuation. As the company grew, partnering with the right investment team was integral. As Oier describes, “It was important to make sure not to raise too much nor too little. The valuation was not important as long as it was reasonable, the type of investor I was bringing was the key for me.”

### OIER’S ADVICE FOR FOUNDERS

There is no secret to success. It´s all about hard work and having the right team. Apart from that, a few learnings are:

- Make sure you understand the levers that drive the business
- Make sure you and your team are always focused on what’s more important
- Work on culture early on
- Think big, act fast

# Case Study: Piwik PRO

> "I think the biggest mistake these days is that too many European startups think about their growth in terms of Europe first or Europe only, which is a strange since we can usually geographically target the need for digital products. Sometimes an idea is only applicable to Europe, but too often I see fantastic ideas that could solve global problems but are tagged and oriented as exclusively "European". That just slows down growth. We need to think globally with digital products and services."
>
> **— MACIEJ ZAWADZIŃSKI, CO-FOUNDER AND CEO OF PIWIK PRO**

Co-Founders Maciej Zawadziński, CEO and Piotr Korzeniowski, CFO met over ten years ago at a software house called Clearcode. Piwik PRO began as an open-source project called Piwik where Maciej was a core contributor. Not long afterwards, he began receiving many inquiries from enterprise Piwik adopters asking for further help and assistance. It was then that Maciej and Piotr decided to establish an entity to monetize the software and solve the pain points of these users. Their collaboration led to the development of a next generation enterprise analytics and marketing platform (Piwik PRO Marketing Suite), geared towards enterprise customers.

Technical founders Piotr and Maciej were able to independently support their company in the early days thanks to their business model. CFO Piotr explains, "We were monetizing open-source that was already in demand. By offering maintenance and support services we are able to explore the deeper needs of our clients and set the right direction for further product development. Thanks to a strong and talented team of developers we had gathered earlier under Clearcode, we managed to quickly get a clear vision of the product that seemed already desired by the market but was at the same time fairly innovative."

The company decided to raise investment when they sought to expand their core product and outreach. The founders knew they wanted to find the right partners to help them continue their journey. According to Maciej, "When it came to investors, apart from a satisfying financial proposition, we were looking for a good cultural and value fit. I think it is very important to work with people who have similar vision but still can be an inspiration and a trigger for your business. I'm very grateful we were able to find this type of match with our investment team!"

Piwik PRO Co-Founders Maciej Zawadziński, CEO and Piotr Korzeniowski, CFO

# Case Study: Parclick

> "Do not be afraid to pivot your business, embrace change. The market is constantly evolving, and it is likely that during the life of your startup you will need to change your course once or twice to adapt. Companies that learn to detect winds of change and adapt early have more chances to succeed."
>
> **— IVÁN RODRÍGUEZ, CO-FOUNDER, PARCLICK**

Parclick is a Spanish company that allows users to find and reserve parking. The service lets drivers compare the best prices and locations for parking before arrival, helping reduce emissions, save time and ensure the best use of space in the city.

The company first began as a MBA Entrepreneurship project. After missing half of U2 concert because he could not find a place to park,  Co-Founder Luis Paris realized a solution allowing drivers to reserve parking spots was sorely needed. Sensing an opportunity, after his MBA studies, Luis joined with Co-Founder Iván Rodríguez to launch Parclick.

In the first year, the founders came upon their first challenge. They found out that while car parks liked the proposal, they had difficulty facilitating reservations due to the design of their lots. Car parks with one entry became a bottleneck at peak times, preventing access to drivers with existing reservations. After speaking with many car park operators, they learned that one of their key pain points was occupancy in off-peak moments. The founders decided to pivot, focusing on long stays (1 day, 3 days, 7 days), products that car parks did not tend to offer. Here, Luis and Iván found an important gap in the market. Since focusing on long stays Parclick doubled their revenues each year.

Parclick Co-Founders Iván Rodríguez (left) and Luis Paris (right)

Sensing an opportunity, after his MBA Luis joined with Co-Founder Iván Rodríguez, to launch Parclick. In the first year, the two founders came upon their first challenge. They found out that while car parks liked the proposal, they had difficulty facilitating reservations due to the design of their lots. Car parks with one entry became a bottleneck at peak times, preventing access to drivers with existing reservations. After speaking with many car park operators, they learned that one of their key pain points was occupancy in off-peak moments. The founders decided to pivot, focusing on long stays (1 day, 3 days, 7 days), products that car parks did not tend to offer. Here, Luis and Iván found an important gap in the market. Since focusing on long stays Parclick doubled their revenues each year.

Since it's founding in late 2011, Parclick has raised several investment rounds to grow their company beyond Spain. Today, they operate in seven countries, 250 cities and offer parking solutions at over 1400 car parks. Finding the right partners at each stage of the company journey has been important for the founders strategy. Co-Founder Iván explains, "As an example, if you need funding to expand in Germany it is better to get a German VC in your capital. On top of the money they will provide invaluable insights about the market and key contacts in the industry. In our case, once we decided where we wanted to go in the next two years we scanned the VC landscape and made a short wish list based on our requirements."

Parclick's home base in Madrid has also been a key asset to the company's success. According to Iván, "Madrid is as well the leading World city regarding parking: As an example Madrid was the first city to tax On-Street parking depending on the CO2 emissions of the car. That means that Madrid is the world's test ground in terms of urban mobility: If you come to Madrid you will see we have 4 car-sharing companies, 3 bike sharing companies, 3 e-motorbike sharing companies, 2 scooter sharing companies, etc. A landscape you will find nowhere else!"

However, the development of the Spanish ecosystem goes far beyond urban mobility and transport. Assets for entrepreneurship in the country have grown enormously, with multiple hubs now offering rich ecosystems for early stage companies to develop and prosper.

> "Spain was late to the Startup race, but we are catching up really fast. From a local point of view there has been a change in the mentality: After seeing the success of companies like Cabify, Wallapop, Letgo, Glovo or Carto, young people now dream with launching a startup rather than working for someone else or being a public official. That's the reason why the number of Spanish startups has skyrocketed, attracting local and foreign capital and making this virtual circle spin. Affluence of foreign capital is the result of how fast we are catching up: VCs are recognizing via their investments in Spanish startups that Spain now offers great opportunities making it worth to establish permanently."
>
> **— IVÁN RODRÍGUEZ, CO-FOUNDER, PARCLICK**

## Case Study: Beautystack

> “In the beginning, when you are raising your pre-seed, you take whatever you can get to get started, you’re meeting everyone. But when you think about going forward and raising further investment, it pays to be a bit more discerning. I have a list of qualities I really care about when evaluating investors. I am looking for funds that have female investors, where women have decision making power. I am drawn to investors that care about social responsibility and those that have initiatives that show they are aware of their privilege and work on addressing imbalance in society. When evaluating investors, I am looking for a mix of smart people with intellectual diversity. I feel that founders should perform due diligence on potential investors. My business is a female based economy and I don’t take comfortable taking money that backs a patriarchal system. It is important to me that we have women on our cap table, and we can increase economic empowerment for everyone.”
>
> **— SHARMADEAN REID, FOUNDER AND CEO OF BEAUTYSTACK**

Beautystack is a visual booking system for beauty professionals and their customers. The platform allows professionals to post their work, take payment and manage their schedules through an attractive visual interface. Founder Sharmadean Reid, MBE developed Beautystack in response to inefficiency with existing salon software booking systems. Sharmadean opened her first nail salon when she was 24. Today, that salon is globally known and hundreds of thousands of people follow WAH Nails on social media. As WAH grew, Sharmadean found that the existing software available to beauty professionals did not accommodate her visually-driven audience.

She noticed how her customers and followers enjoyed sharing images of treatments and services on social media, but “likes” and reblogs on social media were largely disconnected from the existing salon booking platforms. Beauty is a socially networked activity that had not effectively been connected online. Sharmadean decided it was time to build the software that combined the best visual aspects of social media with a transaction and calendar scheduling solution for salons.

The costs and barriers for building this kind of platform were unthinkable when WAH got started a decade ago. In that time, the London tech ecosystem has grown, leading Sharmadean to come to the realization that, “I could build this, and I could build this myself. I love technology and I know this industry inside and out. Why not?” When it came to turning her vision into reality, her first challenge was helping to develop the right team as a sole founder. Drawing from her managerial experience running WAH, she was able to easily transfer those skills towards building the right tech team to turn Beautystack into a reality.

As a sole founder, Sharmadean encourages other founders to surround themselves with allies for support. She suggests building a strong peer group of founders that are a year or funding round ahead of you to learn from and to get advice. Use local events to reach out to the community, but rely on your allies and support system to stay grounded.  When it comes to business, she advises all founders to do your research and get as much feedback as possible from clients. If you are not user #1, you must know the problem inside and out in order to deliver the most value to your customers.

Sharmadean Reid, Founder and CEO of Beautystack

# Case Study: Situm

> "Your customers should be the only ones shaping your product. If you disconnect from the market, it is unlikely that you will achieve product-market fit."
>
> **— VICTOR ÁLVAREZ, CO-FOUNDER AND CEO OF SITUM**

Situm is a leading provider of high precision/zero infrastructure indoor location technology, which gives mobile users their most accurate position in any venue. Based in Spain, Situm's technology is present in more than 1600 buildings around the world, including hospitals, malls and corporate headquarters.

The company's founders came together as PhD candidates in Robotics at the Universidad de Santiago de Compostela. While working together at university, co-Founders Victor Álvarez, Adrian Canedo and Cristina Camallo realized they shared an entrepreneurial spirit, goals and vision. This vision was then channeled into SITUM. When they got started, the founders channeled their own money into the company's development. Early revenue from clients piloting our product helped to support the first months of the company. But they soon realized that to grow, they would need to look for investment partners.

Victor, Co-Founder and CEO of Situm explains: "We knew that we had to find a partner with a track record on creating companies from R&D results, so we knocked on the door of Unirisco VC. You should always look for the early stage fund that will help you and not only give you money." Connecting with Unrisco VC not only provided early investment, but helped the team benefit from the fund's ecosystem and previous experience with creating companies from disrupting R&D results.

Co-Founder and CEO Victor Álvarez presenting Situm in London

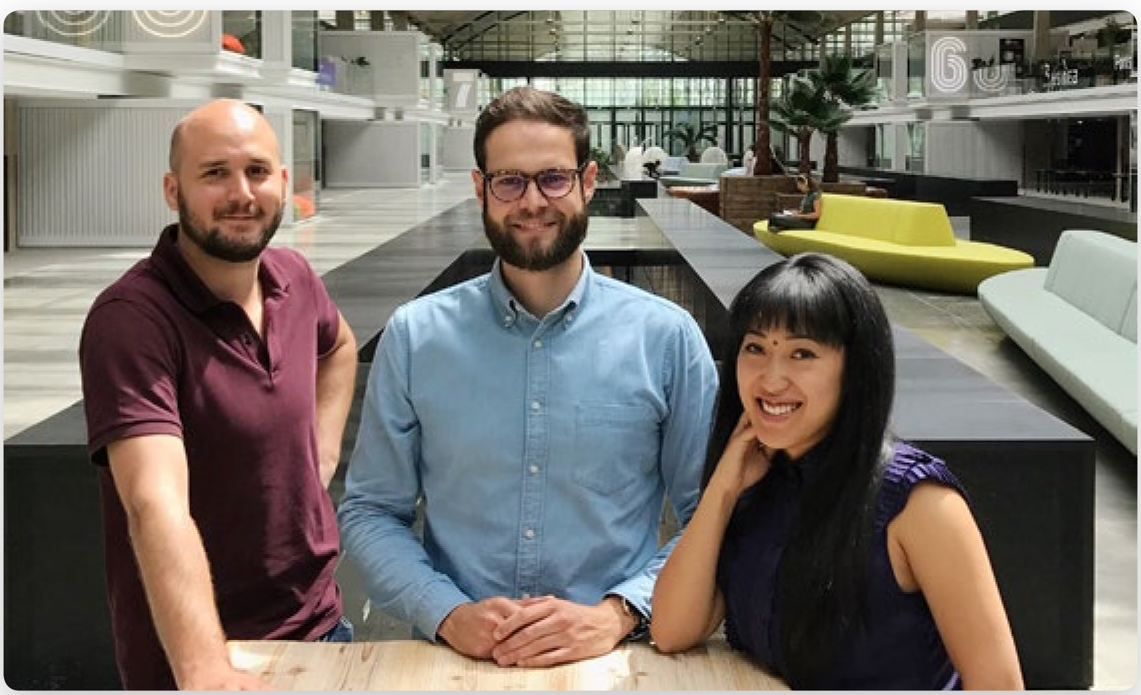
Today, Situm has continued to grow and develop. 2018 has capped off a significant year for the company, when it was listed in Gartner's Magic Quadrant of indoor location providers. In May, Situm was awarded "Travel Innovator of the Year" at Phocuswright Europe, the largest assembly of travel industry executives, investors and startups. Shortly afterwards, the company signed a strategic alliance with AIS, Thailand's largest mobile operator in a deal that will allow AIS customers to benefit from Situm's latest high precision and minimal infrastructure indoor technology.

# Bootstrapping to Revenue Model

## Case Study: Wivaldy

> "We knew from day one that the challenge we tackled would be a long road, that's why we knew that we had to bootstrap as long as possible. The energy market is not new but the main actors are not familiar with the digital transformation. Most of the investors still wonder how to combine those two elements: energy and digital tools. So we chose to generate our first revenue with partners who understood the value of our service for their own interests."
>
> **— RÉMY ROUSSET, CEO & CO-FOUNDER OF WIVALDY**

Wivaldy allows consumers to monitor their electricity consumption in real time, and receive advice on how to improve their consumption. Headquartered in France, the idea for the company came as founders Mathieu, Norida and Rémy shared a sense of helplessness over their annual electricity bills. They noticed that most of the time, it was difficult to predict the eventual amount of energy use, and providers could do little to interpret the year's totals.



Mathieu Lorber, Co-Founder and CTO, Rémy Rousset Co-Founder and CEO, and Norida Chin, Co-Founder and CMO

The limited amount of information provided was frustrating, especially when the founders considered the vast developments in sensor and IoT technologies in other areas. Co-founder Rémy wondered, "how come when we go running we can keep track of our pace, the distance we run or the speed of our sessions..[and] how come when we have to go somewhere we can predict the time and distance it would take, while we are incapable of monitoring our own electricity consumption at home?"

In response to these questions, Wivaldy was created to bring insight into energy consumption. With a strong belief that digital tools are essential to helping reduce energy waste, Wivaldy's smart meter and software helps users monitor their energy consumption in real time, and improve their habits. The product works on all existing home electricity meters and is capable of providing a diagnosis for all types of energy usage. Wivaldy collects a deposit fee for their smart meters, and their diagnostic service remains free for users while the company continues to grow and develop.

> "The most important lesson to us has been to work as an ecosystem. Mostly in our market, you cannot go alone, you need partners, you need people who believe there is something to change in the market and who are working on building a similar world, sometimes on different businesses, sometimes on the same businesses but it's a good sign."
>
> — RÉMY ROUSSET, CEO & CO-FOUNDER WIVIDLY

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## Case Study: Hole19

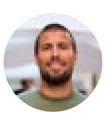
Portugal's Hole19 assists the golfer's journey from start to finish, both on and off the course. Hole19 is a comprehensive analytics platform for golfers that can book tee times, assist players with their swings and offer advice and connection with other players.

The company is the product of sole-founder, Anthony Douglas, who conceived the idea for the company after taking up golf when sidelined with a basketball injury. At the time, the company remained in the idea stage. Four years later, it became a business when he came across a competitor working on an idea similar to his initial vision. Sensing the time was right, he partnered with an agency to build his first prototype. This prototype went on to win his first startup competition, and that initial award check went to hiring the company's first engineer.

As an only founder in the early days, Anthony's enthusiasm and ambition often outpaced his means. Working with a development agency, he knew that he would soon run out of money. He needed to raise his first investment to build his team properly, and move the company from prototype to reality. But when he was starting in Lisbon in 2012, the city's startup ecosystem was nascent. At the time, the tech ecosystem was underdeveloped and local investors did not quite have the experience to work with young tech companies like Hole19. Without a strong ecosystem around him, Anthony spent a lot of time reaching out to investors, but often found himself speaking with the wrong people, who either could not understand the product or offered completely unreasonable terms. He knew that he needed to get some help, which for him would mean leaving Portugal.

A chance turning point occurred when Startup Lisboa (a new organization at the time), held an event called "Silicon Valley comes to Lisbon". The event brought a number of international investors to Lisbon for the first time. Anthony pitched Hole19 pitched at the event, and the company was noticed by Seedcamp. This meeting changed everything, bringing Anthony some early financial support and a wider network outside of Portugal. Despite connecting with Seedcamp's network, it still required considerable hard work to get the company off the ground. In his first fundraising season after connecting with Seedcamp, Anthony took over 100 meetings with investors. Several years on, Hole19 has gone on to raise over €3 million in funding, but Founder and CEO Anthony has worked hard to make the company sustainable through revenue. Today, the company has a growing office in Portugal and Hole19 averages nearly 30,000 downloads per month.[14]

"Remember R - S - A - P...Revenue solves all problems. We have had ambition and freedom to scale, but we didn't always have enough money. We had to slow down and start growing revenue. Founders should quickly find a way to monetize and monetize as soon as possible. There is nothing wrong with being cash-flow break even. Money doesn't grow on trees. Even when investors say one thing, and they want you to grow at all costs, they might not always be there. Make sure you have a plan to stand on your own two feet. There is nothing wrong with making money early on."



**ANTHONY DOUGLAS, FOUNDER AND CEO, HOLE19**

[14] Metrics available at https://www.crunchbase.com/organization/hole-19#section-mobile-app-metrics-by-apptopia

# Case Study: Valuer

Valuer.ai is an intelligent matchmaking platform for corporations to discover, analyze and connect with new companies that will help boost their innovation. Based in Denmark, the company was self supported by the founders until they started taking on paying clients. After taking on a small angel investment, the company is now supported by revenues. Today, their product is used by a number of clients including Microsoft and Danske Bank.

Valuer relies on their strong depth of knowledge about leading innovations being developed around the world. They have curated a list of over 1,800 startups thanks to a network of over 2,900 technology scouts working worldwide. Their AI algorithm has made over 650 matches between startups and corporate clients and utilizes over 3,000,000 to ensure the best connections. Each day, an average of 65 new companies are added to their platform, as their algorithm continues to improve.

The Valuer.ai concept was born before a startup weekend in 2011. At the time, Valuer's eventual Co-Founder and partner Daniel Laursen decided the timing was not right, and the project went back into the drawer. It wasn't forgotten however, and in 2016, Daniel felt it was finally the right time to bring the project into reality. Looking for co-founders, Daniel sent out a Linkedin message about the project, which put him in touch with Dennis Poulsen, a serial entrepreneur and product manager. Over coffee, Dennis and Daniel found that they had shared visions for the project, and Dennis agreed to join after that meeting. The entire team came together in 2017 when Co-Founder René Giese joined the project after connecting with

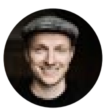

Team Valuer

Daniel at an IoT event in Copenhagen. An experienced leader in Digital IT Solutions, René had experienced many of the pain points that Valuer aimed to solve in his corporate roles, and found Valuer to be an ideal solution.

After raising angel funding, the company has sought to grow organically. As Co-Founder Daniel Laursen explains, “All three co-founders have a commercial mindset and the focus from day one have been to bring on clients to the platform. We succeed with this and used the first customers to create the product and change the focus a bit. After we had brought on the first few clients on to the platform it was easier to raise more.” Today, Valuer has a staff of over 80 people from all over the world.

## What advice do you have when it comes to supporting company growth on the revenue, or bootstrap model?

“Content marketing is king and get A-players that are better than you. Focus on your own product and get customers on board as fast as possible. Don’t focus on the competition, escape it.”



**DANIEL LAURSEN, PARTNER AND CO-FOUNDER, VALUER**

Daniel is a long time serial entrepreneur based in Copenhagen. Prior to founding Valuer, he founded a number of companies including Trendsonline.dk, Startuponline.dk, Startupstamp.com (stepping stone to Valuer) and co-founded TechBBQ, NordicGameBits, and NordicStartupBits. Today he is on the board of WeLoveStartups, a grantmaking organization for companies, and serves as an advisor for a number of startups in Denmark and beyond.

# Strengths of Europe as a starting point

## More capital is available than ever before

As we have seen from the earlier funding graphs, the amount of money invested in Europe's early stage ventures is larger than ever before. Today, more investors are operating in Europe and there is more attention on the continent's startup than previous years. The continent boasts more success stories and local support organizations than ever, creating more opportunities for early stage companies to sustain themselves and grow than before.

> "In the past Europe was often seen as a tough region to crack for entrepreneurs, because of fragmented and highly regulated local markets, as well as lower capital availability to finance innovation. The past 5 years have seen the local VC scene blossom and become more professional, with numerous funds trying to add more operational value to the startups they support (whether it is actual operational skills by recruiting former entrepreneurs to help portfolio companies, business development such as what we do at Partech with a dedicated team fostering synergies between our startups and our corporate LPs…"
>
> **— MARIE-HORTENSE VARIN, PRINCIPAL AT PARTECH**

> "We're looking for founders with outsized ambition and we enable the best of these entrepreneurs to have the financial freedom to get their venture through the initial high risk phase. Since we have now funded more than 150 startups, in which we are closely involved, we know from experience how to help growing businesses perfect and improve their operating approach. At Balderton we are able to share best practice expertise in talent and marketing functions as well. Finally, we encourage all companies within the portfolio to network with each other. The early stage companies can learn so much from those who have already moved onto the next stage of growth"
>
> **— DANIEL WATERHOUSE , PARTNER AT BALDERTON CAPITAL**

> "Now is the best time for Europe-based founders to raise money. Large Europe-based funds are now investing Europe wide and there are many local funds in pretty much every country that can finance the first round."
>
> **— PANOS PAPADOPOULOUS, VC AT MARATHON VENTURE CAPITAL**

A June 2018 report by Dealroom.co identified over 22,000 individual venture capital investors active in Europe.[15] They found that European startups are increasingly successful attracting investment from companies outside the continent and today, more international investors are active in Europe than ever before. This follows an increase in the growth of local investment firms, many operating at the early stage. A crowdsourced list of European venture investors put together by Techstars has identified over 580 individual firms.[16] In early 2016, this list had just over 300 venture firms, showing nearly a two-fold increase in companies with active presence across the continent.[17] While investment in early stage ventures becomes more readily available, it is important that founders continue to follow the right metrics.

> "I would also highlight something a priori counter-intuitive: overcapacity in venture capital can be a challenge for entrepreneurs. It creates buzz and distraction in favour of a few hyped companies engaging in gigantic fundraising rounds; it switches people's attention from the crowd of hard-working, low-profile entrepreneurs to a handful of serial fundraisers, who's long term success isn't guaranteed. Entrepreneurs and investors alike should be wary of keeping their eyes on the right metrics—essentially growth and profits—instead of fundraising amounts."
>
> **— MARIE-HORTENSE VARIN, PRINCIPAL AT PARTECH**

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[15] "Europe's Most PRominent Venture Capital Investors: 2018. Published June 2018 by Dealroom.co, available at https://blog.dealroom.co/wp-content/uploads/2018/06/VC-ranking-report-2018.pdf

[16] As of October 2018. The list is available at https://docs.google.com/spreadsheets/d/1neWbVEVm5nefBMw4xrx9eQLP4YTcfGf2OVulL0QrZRE/edit#gid=0

[17] "Here's a great map/list of 300+ tech startup investors in Europe". By Robin Wauters 5 January 2016. Available at: http://tech.eu/brief/map-list-startup-investors-in-europe/

## European startup hubs are diverse, multicultural and multi-talented

Europe's startup ecosystems depend on an increasingly international workforce to staff these new ventures. For example, London-based Fintech Plum's current team of 13 employees boast backgrounds from 11 different countries.

> "Berlin is the perfect place to start a Pan-European or even global company due to the easy access to international talent. It also helps that prices (rents, wages, cost of doing business in general) are still comparatively low (although this is changing quite fast unfortunately)."
>
> **— CHRISTIAN VOLLMANN, CO-FOUNDER GOODHOOD.EU**

It is easy to see why attracting a high quality international talent pool is an important quality for the continent's startup hubs. Kristian Valk, serial entrepreneur and Co-Founder and CEO of Hotelchamp, describes: "The Netherlands is a real booster for startups and the birthplace of many great ideas. Furthermore, it's a great place to work, live, meet and get inspired, which helps to attract great talent from around the globe. The international makeup of Amsterdam-based startups facilitates their overseas reach. Because of its history, the international focus is baked into the DNA of founders here—a constant awareness that the 'home market' is often too small to build a big company."

"Remember R - S - A - P...Revenue solves all problems. We have had ambition and freedom to scale, but we didn't always have enough money. We had to slow down and start growing revenue. Founders should quickly find a way to monetize and monetize as soon as possible. There is nothing wrong with being cash-flow break even. Money doesn't grow on trees. Even when investors say one thing, and they want you to grow at all costs, they might not always be there. Make sure you have a plan to stand on your own two feet. There is nothing wrong with making money early on."

**IVÁN RODRÍGUEZ, CO-FOUNDER, PARCLICK**

## Early stage companies in Europe transcend multiple geographies

Even at the earliest stages, European startups are transnational ventures. They benefit from founders and technical teams that are able to transcend their geographies and think truly global from day one. Markos Romanos is one example. Markos is an engineer and COO of Pylon Network, an early stage peer to peer energy platform operating largely in Spain. Markos was born in Greece, educated in the UK and lives in Denmark. From Copenhagen, he helps coordinate Pylon's pilot project in Spain's Basque region with the remaining company's team, while making frequent trips across the continent and beyond to Silicon Valley to pitch the company in front of investors and prospective clients. With strong network ties from multiple countries, whether they be through family, education and work, Markos embodies many of the transnational ties that are commonplace among Europe's early stage founders and their teams. These ambitions are further aided by technologies allowing early stage companies in Europe to effectively utilize remote teams and support frequent cross border travel.

Similarly, Europe also attracts many founders who have specifically moved to the continent specifically to found their ventures. These international founders compliment the strong transnational nature many European startup founders exhibit. Some international founders are drawn by startup visa programs, while others are compelled to move to take advantage of new market opportunities, local amenities, or community support in specific startup locations. One example is shown in the case of US entrepreneur Cindy Moy Carr, who decided to bring her femtech startup to the north of England after learning about the assets available in the local tech community at Newcastle Startup Week. After taking part in the city's startup festival, Cindy decided to register her company MySysters in the UK and made the move.[18]

[18] "US Entrepreneur thanks Newcastle Startup Week for New Venture". 20th August 2018. Available at: https://generator.org.uk/services/digital-union/newsroom/us-entrepreneur-thanks-newcastle-startup-week-for-new-venture/35

## Choosing Europe: Case Study, 42Maru

> “We had global expansion as one of the key goals for the very near future and we are well aware of the fact that partnering will make the road for global deployments of our service easier and faster. Investment wise Techstars has a strong network with global investors around the world giving us a better presence in the funding market with a better position in locking partnerships. [Today] I do not split time between Seoul and London but just work 20 hours a day. Even if it was not for the two different cities I would still work 20 hours a day, a dedication which is required for a startup like us.”
>
> **— JASON SHIM, CO-FOUNDER AND CHIEF STRATEGY OFFICER 42MARU**

42Maru is creating the next generation of online search using AI and deep learning to intuitively discern the true intention of a user’s search query. Four of the company’s co-founders came together while working together on a search engine that was later acquired by SK, the Korean conglomerate. They were joined by another friend from their university computer engineering studies to launch 42Maru in October 2015.

42Maru decided to relocate to the UK from Korea to take part in a London program. A key rationale for coming to Europe was to connect with key partners, benefit from the support of the local ecosystem, and pave the way for global expansion. Today, the company is based in both London and Seoul, and perseveres on two continents through dedication, hard work and the support of their network.

### What advice do you have for other early stage founders coming to Europe?

“There is a proverb saying “When in Rome, do as the Romans do” so be adaptive to learn new things and be fully aware of the UK and European culture and apply it on every aspects of the business. I really do like the Techstars “Give First” slogan, “Give First” and you will get more in the longer run with more friends. In London and Korea I think it’s the same, which is all about connections with partners and investors that makes the difference…**Hard work is the secret sauce to a success of a startup…**”

**— JASON SHIM, CO-FOUNDER AND CHIEF STRATEGY OFFICER 42MARU**

Another way that early stage ventures in Europe transcend their geography is by staffing offices in several locations. We find, that existing in multiple geographies is increasingly normal for many companies, even at the earliest stage. By staffing themselves in multiple locations, startup are able to take advantage of the diversity of opportunities available across the continent, and use office locations to maximize their access to talent, to connect with strong local networks and to make use of frictionless regulation that may be available in some locations, but not others. By basing their ventures in several locations, early stage companies are able to take advantage of the benefits of several startup locations concurrently, and access local amenities at the best price point.

> "While we are incorporated in the UK, the majority of our operations takes place in Germany. The benefits of having both companies is the flexibility of hiring talents and having fundraising options in both, Germany and the UK. Also, UK is "closer" to the US, so the UK network helps us build a network in the US too and last not least having the UK Ltd. would make it easier to flip to the US if that would prove to be the best way for the company."
>
> **— DR. VIVIEN DOLLINGER, CO-FOUNDER AND CEO OF OBJECTBOX**

> "Being present both in London and Sofia gives us an edge, that is we try to take the best of both worlds. Sofia and similar places offer access to amazing tech talent at a fraction of the cost compared to London… Surprisingly, even for us, there are many Bulgarians on high positions in the pharmaceutical worlds, something that we benefit greatly from. At the same time, London gives us access to some of the most amazing mentors and partners! Last but not least, London is the biggest hub of venture capital and angels in Europe. Apart from funding your endeavor, the right VCs and angels can help you grow both as a company and as a founder."
>
> **— MIROSLAV VALCHEV, CO-FOUNDER AND COO OF FINDMECURE**

> "We have a talented engineering team working with us from our office in Greece. Besides the usual collaboration tools and video calls, Artur and I are spending one week per month with the team onsite in Athens. This is usually a very productive time and important for us to form a good company culture."
>
> **— YIANNIS KIACHOPOULOS, CO-FOUNDER AND CEO OF CAUSALY**

# Challenges for Early Stage Companies

## While funding has improved, investment is still lower than what founders expect it to be

> "The biggest challenges for early stage founders in Europe is to get access to funds who are ready to take risks with pre-revenue startups. Translation of Venture Capital in French is "Capital risque" ("Venture Risk"), not exactly the same approach!"
>
> **— RÉMY ROUSSET, CEO & CO-FOUNDER WIVIDLY (FRANCE)**

> "In order to scale up the company the local ecosystem is still short on resources, you have to look abroad to do that. Strong teams with strong technical backgrounds and products are the main strength of startups in Europe. The lack of a tech corporate ecosystem from the EU is probably one the biggest challenge we face."
>
> **— VÍCTOR ÁLVAREZ, CO-FOUNDER AND CEO OF SITUM (SPAIN)**

> "One of the challenging factors that we have observed in the recent years is that the average valuation of the same business based in United States is significantly higher than we could expect in Europe. Most US-based venture capital groups convince European startups that they need a US entity. It is of course helpful but it is not necessary to successfully raise capital."
>
> **— PIOTR KORZENIOWSKI, CO-FOUNDER AND CFO OF PIWIK PRO (POLAND)**

> "The European VC mindset resembles that of private equity. Founders building something fundamentally new have a hard time as European investors are always thinking about immediate cash flows and are more reluctant to make the long term bets."
>
> **— PANOS PAPADOPOULOS, VC AT MARATHON VENTURE CAPITAL (GREECE)**

> “Investors are still thinking too small and thinking about how to maximize their equity...We need more ambition in VCs and not short term thinking...We have learned to do a lot with a little. If only we had access to more capital, with a bit more ambition [from investors] we could be taking more risks. Really, the [upper] potential is unknown.”
>
> **— ANTHONY DOUGLAS, FOUNDER AND CEO HOLE19 (PORTUGAL)**

> “The ecosystem for raising capital has changed significantly over the last few years. Before it was hard to raise capital but today the landscape for startups with the right business idea and founder team there is many ways to raise an angel round and a small seed round. But if you compare to USA and China, then it is another ball game. The amount is significantly lower, which means you can raise the same amount in Dollars in the USA that you are raising in Danish kroner.”
>
> **— DANIEL G.F. LAURSEN, PARTNER AND CO-FOUNDER VALUER (DENMARK)**
> **[IN OCTOBER 2018 THE EXCHANGE RATE FOR 1 US DOLLAR WAS EQUAL TO 6.45 DANISH KRONE]**

> “In my opinion they are funding, fragmentation and localism, in that order. In terms of funding, we are really behind the US: US startups have access to much more money on every stage; right capitalization is key not just for the survival of a startup but also to become a market leader. No wonder that many EU startups end up acquired by US competitors as a result not of their stage of development, but because of funding of the acquirer. Next comes fragmentation: Even if business is easier than ever across the EU thanks to the single European market, companies still need to deal with national bureaucracy across the EU. When we started operating in France, Italy and Portugal we found out that we had to deal with 4 different Treasury Agencies with different processes and rules just to pay VAT. So EU market is truly single just for consumers, not for the enterprise. Last comes localism: A French startup trying to do business in Germany is still a foreign company, something that hinders not just the ability of the company to do business, but the ability of the company to raise funds. For a French fund, a Spanish startup is a foreign company, a criteria that may stop on its tracks an investment operation that would be normal in the US.”
>
> **— DR. VIVIEN DOLLINGER, CO-FOUNDER AND CEO OF OBJECTBOX (GERMANY)**

> “Fundraising for sure is very different in Europe (and Germany) than in the US. Expectations on the readiness of your product are higher, valuations tend to be lower and the contracts tend to have more strings attached. Obviously that is not true for every fundraise and every contract, but a general tendency…”
>
> **— DR. VIVIEN DOLLINGER, CO-FOUNDER AND CEO OF OBJECTBOX (GERMANY)**

**In addition, the slowed progress on efforts to advance the continent’s promised digital single market, coupled with at times heavy regulation, language differences and cultural barriers continue to hinder the progress of early stage founders looking to grow across Europe.**

> “The ecosystem is less developed than in the US. It is more difficult to find BAs or VCs willing to take high risks from an early stage. Every country has its language, culture, and regulatory framework, which highly complicates the scalability compared to the US.”
>
> **— OIER URRUTIA, FOUNDER AND CEO, LOOKIERO**

> “Europe has a lot of different markets with regulation, culture and languages. Growth is a challenge in such a complex market.”
>
> **— RÉMY ROUSSET, CEO & CO-FOUNDER WIVIDLY**

> “The biggest obstacles are undoubtedly the not clearly defined legal classifications of ICO/Token Sales in Europe. These “spongy” regulations are also constantly being changed. The fact that we don’t have a Europe-wide association of Crypto laws is a major obstacle. Above all, the aspect of taxation of ICOs is very business-unfriendly and needs to be designed in a business-friendly way. In order to gain a technological edge in comparison to America and China, Europe should act more quickly and be more acceptive and supportive of tech startups.”
>
> **— DIETER SCHULE, CHRISTIAN JUNGER AND J.-FABIAN WENISCH CO-FOUNDERS MADANA**

> “One of the biggest challenges that Europe faces are the completely different markets across the continent. Language barriers remain an obstacle to growth. You find that it’s possible to grow a lot of local heroes, but fewer dominant players. Some have made it. But in the US, there is no language and cultural barrier. Europeans have to be a bit tougher to adapt to these challenges.”
>
> **— ANTHONY DOUGLAS, FOUNDER AND CEO HOLE19**

> “Lots of different languages, jurisdictions make it harder to expand throughout Europe than expanding throughout the US… your market reach is probably at the beginning more limited.”
>
> **— DR. VIVIEN DOLLINGER, CO-FOUNDER AND CEO OF OBJECTBOX**

### However, with the right perspective, these difficulties can provide a unique place to add value.

> “Our biggest strength in Europe is our diversity. We are not one country, but 28 (or more). This is also a big challenge, but I think we have to see it as an opportunity. This is why we at Good Hood launch national brands like nebena.de in Germany, MesVoisins.fr in France, ViciniMiei.it in Italy and ¿Tienes-Sal? in Spain. It makes us truly local and that is what people crave for in a globalized world. A big challenge for founders in Europe is regulation (like GDPR on privacy and data protection). But again I think founders can view this also as an opportunity. For the first time Europe has the chance to lead the way in terms of civil rights in the technology arena. This is exciting and we can take the lead in this field.”
>
> **— CHRISTIAN VOLLMANN, CO-FOUNDER GOODHOOD.EU**

## Advice for Founders

"Being an entrepreneur is really, really tough. There's no rational reason to be one. If you don't have a mission that can keep you motivated through all the hardships, you will quit long before you can have an actual impact."

**— MIROSLAV VALCHEV, CO-FOUNDER AND COO OF FINDMECURE**

"It may seem obvious but I feel like it hasn't been said enough – listen to your clients today and try to figure out what they will need tomorrow. In order to do that you need to be both customer-centered and tuned in to your intuition."

**— MACIEJ ZAWADZIŃSKI, CO-FOUNDER AND CEO OF PIWIK PRO**

"1—If you want to do a startup: Go all in.
2—Grow yourself. Growing yourself ultimately helps you grow your startup.
3—Practice "Give First" always. Also, never feel shy to ask for help. Generally, many people are happy to be helpful. I learned that at Techstars in a new way and am now practicing this on a totally new level."

**— DR. VIVIEN DOLLINGER, CO-FOUNDER AND CEO OF OBJECTBOX**

"Invest a lot of time in hiring people with the right culture fit. This applies just as much to your investors too – everyone needs to be pulling towards the same goals with the right attitude and understanding. One of the main drivers of why our company is growing so fast is because of our team all being so energetic, ambitious, entrepreneurial, proactive, and having a great drive to skyrocket the company by reaching their own goals."

**— KRISTIAN VALK, CO-FOUNDER AND CEO, HOTELCHAMP**

"Make sales a repeatable process. After that, every other puzzle in the organization will magically find its rightful place."

**— PIOTR KORZENIOWSKI, CO-FOUNDER AND CFO OF PIWIK PRO**

# Key Assets of Europe's early stage entrepreneurial ecosystem

## Technical Talent

> "The tech ecosystem is developing fast. Thanks to that, there is increasingly more talent that has been trained in a successful startup which can help you speed up."
>
> **— OIER URRUTIA, FOUNDER AND CEO, LOOKIERO**

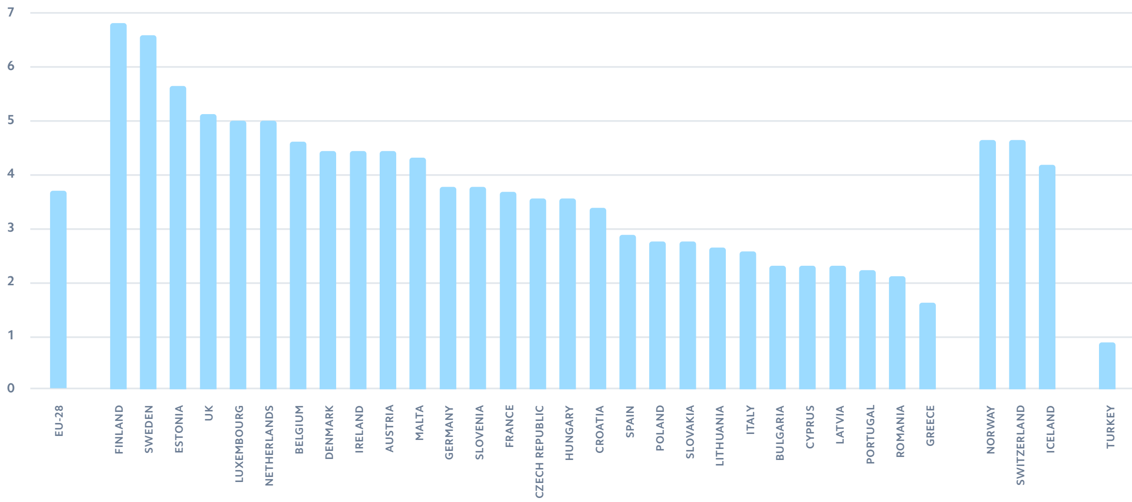
The role of software developers and ICT professionals is precious to company growth and competitiveness. A 2018 report by Stripe, The Developer Coefficient, finds "access to developers is a bigger threat to success than access to capital". In the report, 96% of executives polled[19] reported that increasing the productivity of the company's developers was a priority for them, and 83% feel very or somewhat confident that their companies have sufficient resources to respond to the world's emerging technology trends.

Early stage companies require technical teams with various skills and competencies. A key asset of Europe's early stage startup ecosystem is the great deal of technical talent the continent can draw from. We can examine the consistency the workforce through several different types of analysis. First, by utilizing the EU's most recent Labor Force Survey, we find that some 8.4 million people worked as information and communication technology (ICT) specialists across the EU-28 in 2017.[20] The highest number of these specialists (1.62 million) are employed in the United Kingdom. ICT specialists in the UK comprise almost one fifth (19.4 %) of the EU-28's ICT workforce. Germany (1.55 million) had the second largest ICT workforce, comprising 18.6% of the EU-28 total. This followed by France (1.0 million; 11.8 %). When we analyze the proportion of ICT specialists as a total of the workforce, Finland, Sweden and Estonia have the greatest proportion of technical talent in their workforces.

[19] According to "more than 1000 C-level executives in the United States, UK, France, Germany and Singapore). Available at https://stripe.com/reports/developer-coefficient-2018

[20] For further data on the amount of ICT specialists per country, please see the appendix

Proportion of ICT specialists in total employment, 2017




Source: Eurostat (online data code: isoc_sks_itspt)

eurostat

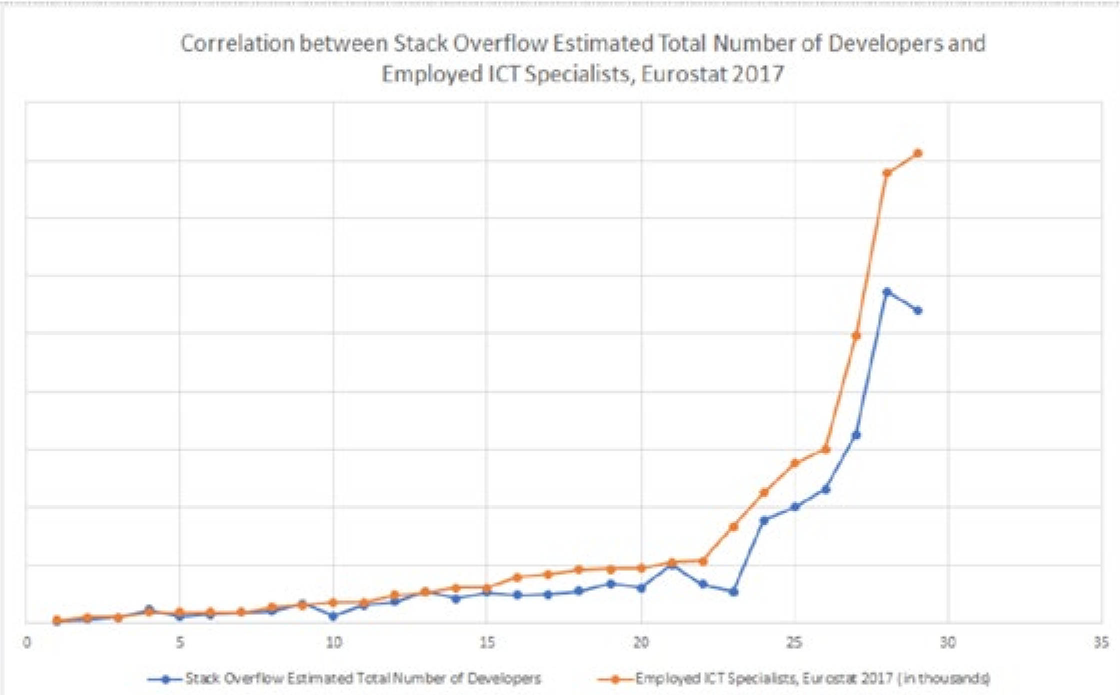
We can model the amount of developer talent a few ways. Stack Overflow, a site for software developers and engineers to learn, share and build their careers estimates a global population of professional developers to comprise 21 million people.[21] Drawing from their usage data, we can estimate the amount of developers in Europe. We find that 29.69% of these people come from European countries, amounting to an estimated population of over 6 million professional developers.

Stack Overflow's data conflicts somewhat with Eurostat's. According to Stack Overflow's usage statistics, Germany is estimated to have more developers than the UK, with 5.46% of the world's total. The UK comes slightly behind with 5.16% of the world total.

[21] There are many different ways to measure technical talent. Stack Overflow identifies professional developers as follows: "Our estimate of professional developers comes from the things people read and do when they visit Stack Overflow. We collect data on user activity to help surface jobs we think you might find interesting and questions we think you can answer." These numbers were generated from Stack Overflow's publicly available user data, and estimated to the nearest thousand.

| | Stack Overflow Country Estimate of Percentage of the World's Professional Developers | Stack Overflow Estimated Total Number of Developers, rounded to thousands | Employed ICT Specialists, Eurostat 2017 (in thousands) | GitHub Accounts per 1M Population |
|---|---|---|---|---|
| Austria | 0.58% | 122000 | 187.8 | 1,140.34 |
| Belgium | 0.64% | 134000 | 214.3 | 1,188.92 |
| Bulgaria | 0.29% | 62000 | 71.0 | 1,016.16 |
| Croatia | 0.19% | 40000 | 53.5 | 866.782 |
| Cyprus | 0.03% | 7000 | 8.6 | 534.99 |
| Czech Republic | 0.53% | 111000 | 184.9 | 936.882 |
| Denmark | 0.50% | 106000 | 122.5 | 2,192.59 |
| Estonia | 0.11% | 23000 | 36.9 | 1,924.07 |
| Finland | 0.46% | 98000 | 168.2 | 2,056.93 |
| France | 3.11% | 653000 | 992.3 | 992.091 |
| Germany | 5.46% | 1146000 | 1,555.9 | 1,141.43 |
| Greece | 0.31% | 65000 | 60.5 | 676.30 |
| Hungary | 0.45% | 95000 | 157.7 | 710.23 |
| Ireland | 0.34% | 72000 | 96.8 | 1,616.77 |
| Italy | 2.21% | 463000 | 602.7 | 395.557 |
| Latvia | 0.10% | 20000 | 20.7 | 1,053.34 |
| Lithuania | 0.15% | 30000 | 36.9 | 1,045.85 |
| Malta | 0.06% | 12000 | 20.7 | 1,602.03 |
| Netherlands | 1.76% | 370000 | 36.9 | 2,102.55 |
| Norway | 0.40% | 84000 | 121.5 | 2,273.68 |
| Poland | 1.71% | 358000 | 452.0 | 815.01 |
| Portugal | 0.51% | 107000 | 104.3 | 1,062.51 |
| Romania | 0.64% | 135000 | 185.4 | 524.22 |
| Slovakia | 0.22% | 45000 | 36.1 | 520.20 |
| Slovenia | 0.12% | 25000 | 70.5 | 1,002.50 |
| Spain | 1.91% | 401000 | 554.1 | 818.621 |
| Sweden | 0.51% | 107000 | 332.8 | 2,609.88 |
| Switzerland | 0.95% | 200000 | 210.4 | 2,045.25 |
| United Kingdom | 5.16% | 1083000 | 1,623.7 | 1,667.65 |

We can check the robustness of Stack Overflow's data by examining the correlation between their estimation of "professional developers" as compared to Eurostat's labor force survey. We find, that the two figures are strongly correlated, indicating that these appear to give a robust estimate of the relative size of Europe's technical workforce.




But where exactly are Europe's technical professionals located? We can begin to uncover the most popular cities for the continent's tech talent by using publicly available data from GitHub, another popular site used by developers to share their work. GitHub, like Stack Overflow releases an open API with user data that can be used for analysis. Utilizing a tool developed and hosted by developer Ben Frederickson, we are able to model some further trends about where in Europe the continent's developer population is located.[22] As under 15% of GitHub identify their location (2.3 million out of over 15 million users), we can't use this data to calculate the absolute number of users. But we can use it to identify the European cities with the greatest amount of GitHub users, helping shed light on exactly where Europe's development talent can be found.

[22] The GitHub data utilized in this analysis is derived from GitHub's public API and User Data Archive. The data was accessed and analyzed thanks to code and techniques made available by Ben Frederickson on his personal site and GitHub page https://github.com/benfred/github-analysis/. Frederickson normalized GitHub's user location data to Google Maps Geocoding API, which allowed for the user data to be attributed appropriately. For more see: " Where Do The World's Software Developers Live?" 24 April 2018 Available at https://www.benfrederickson.com/github-developer-locations/

## Top 50 European Cities by GitHub Accounts (Global Ranking)

| | | | | | |
|---|---|---|---|---|---|
| 2 | Paris (9th) | 20,560 | 27 | Cambridge (110th) | 2,851 |
| 3 | Berlin (10th) | 17,721 | 28 | Wroclaw (111th) | 2,849 |
| 4 | Stockholm (36th) | 8,382 | 29 | Milan (113th) | 2,773 |
| 5 | Madrid (37th) | 8,196 | 30 | Edinburgh (115th) | 2,758 |
| 6 | Amsterdam (39th) | 7,872 | 31 | Rome (128th) | 2,309 |
| 7 | Barcelona (41st) | 7,609 | 32 | Cologne (129th) | 2,305 |
| 8 | Munich (45th) | 6,830 | 33 | Gothenburg (130th) | 2,246 |
| 9 | Minsk (50th) | 5,883 | 34 | Brussels (138th) | 2,111 |
| 10 | Warsaw (52nd) | 5,755 | 35 | Toulouse (140th) | 2,103 |
| 11 | Dublin (54th) | 5,513 | 36 | Bristol (142nd) | 2,056 |
| 12 | Hamburg (57th) | 5,300 | 37 | Stuttgart (151st) | 1,919 |
| 13 | Vienna (65th) | 4,349 | 38 | Poznań (155th) | 1,789 |
| 14 | Copenhagen (67th) | 4,233 | 39 | Glasgow (156th) | 1,785 |
| 15 | Prague (68th) | 4,165 | 40 | Nantes (159th) | 1,777 |
| 16 | Oslo (69th) | 4,151 | 41 | Frankfurt (164th) | 1,710 |
| 17 | Zürich (70th) | 4,090 | 42 | Cluj-Napoca (165th) | 1,659 |
| 18 | Sofia (71st) | 3,965 | 43 | Utrecht (167th) | 1,614 |
| 19 | Budapest (77th) | 3,850 | 44 | Karlsruhe (169th) | 1,566 |
| 20 | Kraków (78th) | 3,799 | 45 | Zagreb (171st) | 1,556 |
| 21 | Bucharest (80th) | 3,593 | 46 | Rotterdam (174th) | 1,533 |
| 22 | Helsinki (84th) | 3,550 | 47 | Brno (175th) | 1,514 |
| 23 | Manchester (89th) | 3,413 | 48 | Bordeaux (176th) | 1,511 |
| 24 | Lisbon (93rd) | 3,268 | 49 | Lille (179th) | 1,478 |
| 25 | Lyon (105th) | 2,942 | 50 | Porto (180th) | 1,464 |

When we analyze the entire constellation of cities that comes up in GitHub's repository of users, we find that development talent can be found across the continent.

"There is a great technical backbone in Poland. It has a lot to offer in terms of the IT job market – there's a good mix of talented and ambitious professionals. That said, there are good conditions for startups all over Europe, we don't see location as a huge factor deciding success."

**— PIOTR KORZENIOWSKI, CO-FOUNDER AND CFO OF PIWIK PRO**

Based in Poland, Piotr is a tech-savvy finance expert with wide experience in finances for both startups and corporate organizations. He holds a Master's Degree in Econometrics and Computer Science and previously worked for HP and KPMG.

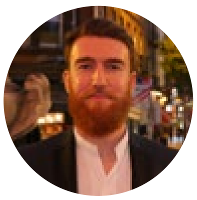
## Startup Community Ecosystem

"The biggest asset of the European startup ecosystem is the culture of community that exists across startups here. From first time founders to serial entrepreneurs the community is characterized by engagement, moral support and resource and expertise sharing. You're not alone on your founder journey here. There's a deep pool of expertise around you, people who've walked in your shoes  and are ready to help when you need it. All initiatives and events that bring the startup community together and provide an opportunity for expertise sharing are valuable and have a role to play. In a young startup environment, the top of the funnel needs to be stuffed with activities and early stage companies for the quality events and companies to ultimately emerge. That said, entrepreneurs with the drive and ambition to build something truly innovative need to pick and choose where and when they participate in order to extract the most benefit."

**— NIAMH BUSHNELL, CEO OF TECH IRELAND**

"Summits with international appeal such as TechBBQ, gather all the important stakeholders one spot and put the spotlight on success stories, valuable lessons, and bring international investors with an advance interest in the sector - thus supporting the startup's success and growth. Therefore, TechBBQ is in many matters a value-creating platform for early stage startups, as it gives them the opportunity to connect with peer entrepreneurs and learn from those who've made it become stars and access to funding by building an investor network."

**— AVNIT SINGH, CXO TECHBBQ (DENMARK)**



"Community events and workshops offer access to the startup domain to people who are currently employed in full-time employment and are looking for a change. For those who have recently made that jump, community events support these, often cash-strapped, early-stage entrepreneurs to access vital information and skills that can save them from making fatal mistakes at a vulnerable stage in their startup journey. On top of this, the networking that these community events provides entrepreneurs with unique opportunities to meet potential co-founders and find skilled employees and mentors that will guide them through a challenging ecosystem."

**— DAVID POLLARD, FOUNDER, LEARNING TECH LABS**

Co-Founder, Startup Week Dublin; Founder of Ireland's Digital Citizenship Summit; European Commission Ambassador to European Maker Week; 6x organizer Techstars Startup Weekend (Ireland)

"Events bring together that special crowd of people. You have a special mixture of startups, fellow investors, and other accelerator programs.. They are important for information sharing and meeting people. It's very key that at least one third of the participants are startups."

**— ANDREAS NEMETH, MANAGING DIRECTOR UNIQA VENTURES (AUSTRIA)**

## How Tech Events Empower the Early Stage Ecosystem

"We started as a student organization in order to give tech entrepreneurs the network they need to succeed. To do that, we started doing events. Because we realized that there were a lot of new technologies that empower us to do things that decades ago, only big corporations or large organizations could do.

Now there is an unscaling going on, just like we see with cloud computing, with genome editing, with AI, with 3D printing, we have a lot of technologies that become affordable, and startups can use them to effectively compete with big organizations...So what we did, was we got together idea-stage startups, or teams, they weren't even startups at the beginning, to help them discuss their business models, to help them find co-founders, to put together a business plan, to prepare pitches, and how to address investors, in order to increase their success rate. And this is until today, the main mission of what we do.

We want to increase the success rate of startups. We do this by connecting them, to other team members, to mentors, we help them define their business case, and pivot if necessary, or hire the right people. We connect them to investors, also with [seed] money, and also connect them with big corporations, because we believe that big corporations need agile, innovative, nimble startups in order to compete in the future.

Startups can scale more easily if they have the right partners-- not anyone, but the right partners. This is where we see Pioneers. As we started building our events, we got more and more applications for startup. And then, investors came, and corporations came, and we started thinking, what is the ecosystem that you need? We found that business angels are an important a part to this. Founders who have exited, and are reinvesting parts of their earnings into new startups help to really create an ecosystem. Together with enablers like mentors, event organizers, and even government, they all play an important role in building the ecosystem. So we started to put these components together. We began by supporting the ecosystem first from the idea-stage startup, and working upwards, now to Series A and B. Afterwards, they don't really need that support anymore…"

**— OLIVER CSENDES, CEO AT PIONEERS.IO, INTERIM MANAGER PIONEERS VENTURES**

Early stage founders rely on community support to help their ventures grow and scale. Vibrant startup ecosystems enable founders to learn, grow and build valuable connections with investors, potential customers and team members. While there are many resources that founders use, one of the most important at the ecosystem level are meetups and events. While it is difficult to finding robust numbers on the amount of meetups and events in each startup city due to the many platforms where they might be advertised—a proxy can be utilized using data collected by Teleport Cities.

| Amount of Tech Meetups and Events in Selected European Cities (Eventbrite and Meetup) October 2017 to October 2018, from Teleport Cities[23] | |
|---|---|
| London | 12246 |
| Paris | 1581 |
| Manchester | 1505 |
| Berlin | 1238 |
| Dublin | 1016 |
| Milan | 919 |
| Amsterdam | 901 |
| Madrid | 716 |
| Brussels | 690 |
| Barcelona | 668 |
| Munich | 653 |
| Edinburgh | 541 |
| Rome | 519 |
| Hamburg | 355 |
| Helsinki | 326 |
| Vienna | 325 |
| Zurich | 258 |
| Copenhagen | 225 |
| Oslo | 215 |
| Warsaw | 205 |
| Cologne | 192 |
| Prague | 192 |
| Budapest | 181 |
| Sofia | 120 |
| Porto | 119 |
| Vilnius | 114 |
| Athens | 100 |
| Luxembourg | 94 |
| Tallinn | 86 |
| Bucharest | 85 |
| Porto | 79 |
| Krakow | 73 |
| Riga | 57 |
| Bratislava | 56 |
| Minsk | 45 |
| Malmo | 42 |

[23] Teleport, a subsidiary of Topia, uses an algorithm to collect the amount of technology meetups from both Eventbrite and Meetup https://teleport.org/

HOW FOUNDERS TAKE ADVANTAGE OF LOCAL AMENITIES:

## What are some assets of the local tech ecosystem that have been most helpful to you?

> "We are fortunate to, from an early stage, be part of the Copenhagen Fintech Lab community. This is an extraordinary place where young and more mature companies can share experiences and knowledge, as well as receive sparring in a variety of professional matters, made readily available by the talented team at the lab. The most valuable outcome has been the possibility to network and meet with numerous other companies from start-ups to very established players. Cooperation becomes possible and the learning curve is very steep."
>
> **— MORTEN NIELSEN, CO-FOUNDER AND CFO OF ARYZE**

> "Droidcon for sure! But that is very specific with regards to technology; it is a very good fit for us and Droidcon really has built a community of great developers around the world. Being part of this community does not only feel great, but also helps us a lot. We can only recommend it for Mobile developers. Also, local dev groups are very helpful to get first feedback for ideas, presentations and products. And because it's fun, Markus also founded the first Android developer group in Munich many years ago. All big cities like London, Munich, or Berlin have vibrant developer groups - you typically find multiple events of interest per month or sometimes even per week. I think those are great places to check out as a tech startup. Digitally, there obviously is github, stackoverflow, and reddit that are tremendously useful for developers. Also, Markus is part of some highly specific slack channels, e.g. Data persistence, where he can discuss in-depth technical challenges. These channels are really valuable."
>
> **— DR. VIVIEN DOLLINGER, CO-FOUNDER AND CEO OF OBJECTBOX**

> "I think it is the overall atmosphere of people willing to help each other as the main strength for founding teams. Also various and concrete meet-ups where you can mingle with other people and learn their thoughts build up many different aspects to our own business."
>
> **— JASON SHIM, CO-FOUNDER AND CHIEF STRATEGY OFFICER, 42MARU**

"There are amazing events and communities in London. What most people might not know is that the same is relevant for Sofia. A big thank you to Dev.bg who are organising amazing events and help the ecosystem grow and mature."

**— MIROSLAV VALCHEV, CO-FOUNDER AND COO OF FINDMECURE**

"Being part of Station F Founders' Program has been an important milestone in our development. The community is amazing and helped us move faster as we share our experience and get advice from fellow entrepreneur who have been through similar problems or situations. We also get inspired all the time thanks to conferences with successful entrepreneurs happening all the time at Station F. And having VC's around helped us focus on important parts of our business model."

**— RÉMY ROUSSET, CO-FOUNDER AND CEO OF WIVALDY**

"If we take a step back and look at who runs community events it will generally be people passionate about a given subject giving their free time to fill the void that they see in education on a certain topic. Having a healthy community means that the potential to up skill and learn on new technologies, frameworks for entrepreneurship or other areas makes for an entrepreneurial- lead development cycle that gives everyone an opportunity to participate."

**— GENE MURPHY, ENTREPRENEUR IN RESIDENCE, BANK OF IRELAND**

Co-Founder, Startup Boost; Director, Startup Next Dublin; Co-Founder Startup Ireland and Founder of Redeem&Get


David Pollard, Gene Murphy and the rest of the Dublin Startup Week team

## Early investors as Ecosystem Builders

"The tides are shifting in Europe and founders are increasingly demanding that their investors support them with more than just money. Money is moving from scarcity to abundance and those investors who fail to adopt the new mindset will die out eventually. My perspective has always been that I work for our founders - not the other way around. One of the biggest value-adds we see for ambitious founders is in helping them make Europe smaller. Making sure that we can not only open doors for them in Copenhagen, but equally so in London, Berlin and Paris. If Europe wants to compete globally, we have to transition away from regional thinking. The best founders understand this. This is particularly important for Nordic founders, where we invest. One of the questions I get asked the most by entrepreneurs I'm looking to fund is "who do you know outside the Nordics?". Our home markets are small and therefore we fight for a chunk of bigger markets. As an investor, I'm fighting for a single-market approach in European tech."

**— CHRISTIAN JANTZEN, EARLY STAGE VC AT FUTURISTIC VC**

Futuristic specializes in investments at the pre-seed stage, with tickets between $50.000-100.000 tickets. They emphasize their founder-friendly terms and their effort to "work for you—not the other way around."

Angel and seed investors play an invaluable role in supporting early stage companies. In 2017, the European Trade Association for Business Angels estimated that business angels across the continent invested €7.3 billion to seed and early stage companies in Europe.[24] According to the association, the  business angel community in Europe grew to 337, 500 investors in 2017, and closed an estimated 39,990 deals during the year. This represents a 9% increase from 2016, and a new record level of investment.[25] In 2017, the average investment per funding round for business angels across Europe is an average of €25,400.[26]

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[24] The European Business Angels Network Statistics Compendium was released in 2018 and reflects investments made in 2017, the latest year that statistics were available. Data for this report was collected from a combination of both interviews, surveys and a wide assessment of public sources of investment statistics. The report is available at http://www.eban.org/wp-content/uploads/2018/07/EBAN-Statistics-Compendium-2017.pdf

[25] Ibid, page 6

[26] Ibid, page 14

> “We knew that investors mean much more than money. Both in terms of governance (company strategy, future rounds, exit strategy, decision making, controlling, etc.) and in terms of reach (their networks and the use they let you make of it, their knowledge as mentors and counselors, etc.) That is why we always looked for VCs lead by people that we would have partnered with outside Parclick, and that had the power to help us solve current company challenges. As an example, an early round to buy a competitor was covered with a VC which Managing Director helped us a lot to complete the acquisition of that very same competitor. It was funny seeing this person reporting to himself!”
>
> **— IVÁN RODRÍGUEZ, CO-FOUNDER, PARCLICK**

While the amount of funding invested by European business angels continues to rise year on year, the real support these early investors provide is through ecosystem support. At the earliest stages, they provide mentorship, support and experience to new founders and ventures. Importantly, early investors help founders transcend their geographies and build valuable connections as their companies scale and grow.

> “What we are really looking for is great founder personalities, which can be hard to find in Austria because we don’t have that second generation of founders [yet]. What we ideally would look for are serial entrepreneurs. To build this ecosystem, we support a number of programs to help the first generation of founders. One, together with the incubator of the Viennese universities...we work together with prospective founders that have backgrounds in academia or research, helping to support spinouts and set up businesses…[As investors] it’s even harder to find female first generation founders. So that’s why we support the Female Founders Initiative here in Vienna, a group of ladies that are really doing everything to help female founders...they are brilliant founders, [and this initiative] gives them that social network to help them thrive. We also cooperate with Pioneers Ventures and Speedinvest, both are quite early stage investors, to share deal flow, and we have a partnership in the Fintech space to support startups all around Europe.”
>
> **— ANDREAS NEMETH, MANAGING DIRECTOR UNIQA VENTURES**

> "What we are really looking for is great founder personalities, which can be hard to find in Austria because we don't have that second generation of founders [yet]. What we ideally would look for are serial entrepreneurs. To build this ecosystem, we support a number of programs to help the first generation of founders. One, together with the incubator of the Viennese universities...we work together with prospective founders that have backgrounds in academia or research, helping to support spinouts and set up businesses…[As investors] it's even harder to find female first generation founders. So that's why we support the Female Founders Initiative here in Vienna, a group of ladies that are really doing everything to help female founders...they are brilliant founders, [and this initiative] gives them that social network to help them thrive. We also cooperate with Pioneers Ventures and Speedinvest, both are quite early stage investors, to share deal flow, and we have a partnership in the Fintech space to support startups all around Europe."
>
> **— ANDREAS NEMETH, MANAGING DIRECTOR UNIQA VENTURES**

# Public policy and government activities

## Early stage company support

> "Europe's venture capital funds are not big enough to attract major institutional and private investors nor to finance companies as they grow: venture capital funds in Europe have an average size of around €56 million whereas in the US they are on average three times bigger. In addition, 90% of the EU's supply of VC is concentrated in just eight Member States, and there is little cross-border investment: this fragmentation hinders larger funds from emerging.."
>
> **EUROPEAN COMMISSION FACT SHEET 10 APRIL 2018**

While private investment in European companies continues to grow, a reality is that many early stage ventures in Europe depend on government support in the initial stages. Thankfully, the European Commission is one of the world's largest investors in early stage companies and continues to innovate when it comes to supporting the continent's startups.

In April 2018, the European Union announced the development of one of the world's largest support mechanisms for early- to growth stage startups, VentureEU.[27] VentureEU will raise up to €2.1 billion of public and private investment for six special funds: Aberdeen Standard Investments, Axon Partners Group, Isomer Capital, LGT, Lombard Odier Asset Management and Schroder Adveq. VentureEU is designed to help support startups and to help facilitate further opportunities for greater levels of private investment into European companies. This new funding support is estimated to help support around 1,500 start-ups and scale-ups across the whole EU, with the first results to come in 2019.

VentureEU is not the only mechanism that the EU has to support early stage companies. Many early stage startups in Europe depend on public financing and grants as they grow and develop. VentureEU follows a host of other mechanisms for startup support for European companies. At the early stage, the European SME Instrument (Small and Medium Enterprise) is one of the first sources of public funding for early stage companies. Launched in October 2017, the SME Instrument will provide €1.6 billion in funding to innovative young companies over the period 2018-2020. Around 4000 European startups will benefit from this funding, with the opportunity to access early stage lump-sum grants of €50,000 to assist with feasibility and assessment of

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[27] VentureEU: Pan-European Venture Capital Funds-of-Funds Programme" Brussels, 10 April 2018. European Commission. Available at: http://europa.eu/rapid/press-release_MEMO-18-2764_en.htm

their products, which can be followed on with development funding of between €500,000 and €2.5 million. The program also supports business coaching and access to acceleration services.

European companies are also able to take advantage of several other funding programs, depicted in the chart below. These include COSME[28], Europe's programme for small and medium enterprises, which helps young companies through grants, opening up business opportunities across borders, and supporting innovative business practices in certain verticals. The COSME programme has been running since 2014 and will extend to 2020 with a budget of € 2.3 billion.

| Examples of European Union Funding Opportunities for SMEs and Startups | | | |
|---|---|---|---|
| *EASME Support for SME and Startups* | *European Investment Bank* | *The European Fund for Strategic Investments (EFSI) for SME* | *SME Instrument* |
| *EUREKA Innovation Across Borders* | *accesstofinance.eu* | *FTI Pilot* | *COSME* |
| *Access to Risk Finance* | *Creative Europe* | *EaSI* | *ESI Funds* |
| *Invest Horizon* | *Pan-European network of Digital Innovation Hubs (DIHs)* | *Satellite Navigation Opportunities* | *Earth Observation Opportunities* |
| *ARTES* | *Copernicus Startup Programme* | *Galileo Startup Programme* | |

[28] "COSME. Europe's programme for small and medium-sized enterprises." European Commission Growth. Available at: https://ec.europa.eu/growth/smes/cosme_en

Beyond European Union financing, many startups in Europe turn to domestic support. At the early stage, many countries have developed initiatives to support new founders. These include:

- Startup Portugal: The Startup Voucher helps to support companies in the idea phase. It provides both material and technical support for early stage companies with a monthly support grant (€ 691.70), mentoring, and prize money for successful evaluation (€1,500) and implementation (€ 2,000). The Startup Portugal Incubation Voucher helps to support companies with management services, legal advice and intellectual property protection. The voucher is worth between from €5,000 to €7,500.
- Germany Federal Ministry of Economics and Technology (BMWi): The EXIST Business Start-up Grant supports students, graduates and scientists from universities and research institutes who want to turn their business idea into a business. The EXIST program supports founders and their teams for one year with a monthly subsistence grant, material expenses (up to €10,000 for sole founders and €30,000 for teams) and startup related coaching (€ 5,000).
- Enterprise Ireland: Begun in 2012, the New Frontiers program is national entrepreneur development programme for early-stage startups. It is based in 14 campus incubation centres across the country and offers new founders a launch pad into entrepreneurship. Participants receive office space, R&D facility access, network and incubation support and a tax free stipend of up to €15,000, or €2,500 for each of the six months of the programme.
- United Kingdom Enterprise Investment Scheme (EIS) and Seed Enterprise Investment Schemes (SEIS): Each of these schemes offer generous tax breaks for investors in high risk companies, which lowers the burden for investors and helps startups raise investment. Prior to raising investment, companies can apply for EIS or SEIS certificates. The SEIS is focused on very early stage companies, and eligible firms can issue up to £150,000 SEIS eligible shares in their lifetime.

The amount that startups can raise with public funding is quite low compared to what can be achieved through private investment. Many warn that these investments are not worth the sometimes arduous application process, which takes founders away from working on their companies. However, public investment plays a vital role in helping enable entrepreneurial imagination for young people and new graduates. It is programs like these, no matter how meager they might appear that can make the difference for young people in encouraging them to consider entrepreneurship. The access to mentoring support, and office space cannot be underestimated. These programs help to seed ecosystems with prospective entrepreneurs, providing space and support for them to learn and grow before targeting the private investment landscape.

## Motivated by Efficiency, Stripe Atlas

When government policy or lack of local support creates friction for startups, companies are motivated to find efficient solutions. Even at the early stage, founders are able to transcend geographic barriers to take advantage of solutions available elsewhere. One of these efficient solutions is found in Stripe's Atlas program, which supports founders from anywhere in the world to found their ventures in the United States. Stripe Atlas powers 20% of Delaware incorporations many of these from international founders  launching in the USA. Marathon Venture Capital, a Greek VC firm has partnered with Stripe to help founders take part in this program, even if they may be physically present elsewhere.

> "Stripe Atlas is ideal for founders in need of a US incorporation and what is particularly interesting is the one-stop approach. This is ideal for founders who haven't been physically in the US or cannot afford to make the trip before they have charged customers of established a company. It's the fastest way to get up a company up and running and either start making money or receive an investment (of course one will have to hire attorneys to make the changes and work on the shareholders agreement). Our latest portfolio company and biggest investment to date has used the service."
>
> **— PANOS PAPADOPOULOS, VC AT MARATHON VENTURE CAPITAL**

# Startup Visa: New Models to Attract the World's Talent

> "SWe applied to Startup Denmark, and received an entrepreneurial visa for three years. That visa has just expired in July [2018], and we received another three year extension...In the beginning we didn't know a soul, but today we have a pretty decent network...I love the Danish startup life. Here, everyone is working to help each other, to connect each other. In Colombia, it is totally different."
>
> **— ALEJANDRO FRANCO, CO-FOUNDER AND CCO OF KAFFE BUENO**

Kaffe Bueno, a Copenhagen-based foodtech startup transforms the end products of coffee, turning the waste grounds into protein powders, coffee oils and cosmetics. Founders Alejandro, Jan and Camilo are originally from Colombia, where they learned about the coffee market from a young age. It wasn't until Alejandro and his team started business school in London when they decided to turn their interest in coffee into a business. While in business school, Franco and his co-founders devised of the original model for Kaffe Bueno, an end-to end company that helped support Colombian coffee farmers as well as bring great recycled and sustainable products to Europe. They identified the Scandinavian market as the perfect fit for their entrepreneurial ambitions, with Copenhagen's burgeoning food scene and ample support for young companies in both biotech and foodtech. Without ever visiting Denmark, the three founders applied for a startup visa and upon receipt, their company has gone from strength to strength. Three years after arriving in Denmark, Alejandro and his team won the 2018 "People's Choice" award from the Danish Startup Awards highlighting their value and important role in the community.

Startup Visas are a relatively new model of immigration policy specifically designed to attract prospective startup entrepreneurs. The inspiration for these policies was largely derived as a reaction to the development of Startup Chile in 2010, which is today one of the world's largest investors and incubators of early stage companies worldwide. No world region has quite embraced startup visa legislation as Europe has, however. European countries were among the first to put specific policies in place for allow for the frictionless movement of startup entrepreneurs and to help enable pathways for scarce technical talent to relocate easily.

European startup visas can be organized into three categories. These categories are based on their entry criteria, the evaluation process and the rights, obligations and entitlements the programs confer. The first category, "entry investor" tends to follow existing examples of visas for cross border business development, usually requiring a certain income threshold or investment level for entry. In certain cases, such as that in "Hybrid" models confer entry upon both an evaluation by the immigration authority and through sponsorship by a third party (outside the immigration authority). In Europe, these examples usually require sponsorship by an incubator or accelerator program. “Support” startup visas, of which the French Tech Ticket is the sole example, help give financial support to accepted new companies and their founders.

| Three Models of Startup Visas | Entry Investor | Hybrid | Support |
|---|---|---|---|
| Application procedure | Initial application is made to immigration and business authority. Each is individually evaluated according to certain provisions, that may include minimum investment amounts, human capital skills, and business plan strength. | | |
| Sponsorship by a private party | no | Private enterprise such as an incubator may sponsor and evaluate petition, provide mentoring support | |
| State-sponsored business support? | no | | yes |
| Example | Denmark (2014), Ireland (2012), Spain (2013), UK (Tier 1 Entrepreneur 2011, 2014), Estonia (2017), Latvia (2017), Finland (2018), Lithuania (2018), UK (2019) | Italy (2014), the Netherlands (2015), UK (Technation 2016), Portugal (2018), France (2018) | France (French Tech Ticket 2015); |

Many of the earliest examples of startup visa policies in Europe tended to have high procedural and financial barriers for founders that often resulted in poor uptake. For example, when the Netherlands launched their startup visa in 2015, despite containing some of Europe’s most vibrant startup hubs, the country received 95 applications, and 21 were granted. The first year of Italy’s startup visa, launched in 2014 saw only 61 applicants, with 40 approvals.[29] Ireland, one of the first countries to launch a startup visa program in 2012, initially required hopeful companies to have a minimum investment of €75,000 to guarantee entry, the ability to demonstrate the creation of 10 jobs in Ireland and expect to realize €1 million in sales within

[29] “Italia Startup Visa&Hub Four-monthly report – key figures.” December 31, 2015. Italian Ministry of Economic Development Directorate General for Industrial Policy, Competitiveness and SMEs

three to four years of starting up. At the time, these restrictions prevented many prospective entrepreneurs from pursuing the visas further.

Since the first wave of startup visa legislation across Europe, more countries have developed programs and others have adapted theirs to be more cognizant of the realities of a startup. A notable example is Estonia's startup visa, launched in 2017. The visa programme only requires founders to demonstrate that they have a minimum of €140 per month in support (€1,680 for a one-year visa). In the first nine months of the program, 250 startups applied from 45 countries and 113 were accepted.[30] In the first 12 months, 325 applications were received from 47 countries. Applications for 2018 have already exceeded over 1000.

Policy in this space has continued to evolve. The UK's Tech Nation visa, launched in 2014 has received over 1,000 applications, with more than 600 of those being approved.[31] At London Tech Week in summer 2018, the UK announced plans to develop a new entrepreneurship visa scheme, in response to Brexit to launch in 2019. France, after several years of running their French Tech Ticket have begun a new French Tech Visa program geared to welcoming tech founders, tech talent and investors from around the world in late 2018. The visa offers a four year residency permit that is renewable. Founders must demonstrate financial resources at least equal to the French annual minimum wage, €17,981.60 as of January 1, 2018.[32]

Elsewhere, further schemes have opened up in Finland, Portugal and Lithuania.[33] The uptake for some of these programs is often slow to start (Lithuania welcomed 12 new companies nine months after starting their scheme in 2017[34]), however they can make all the difference by providing a welcoming launchpad for foreign founders looking to access the European market.

[30] "Estonian Startup Visa Programme Overview" Rivo Riistop, Startup Estonia. 12 12 2017. Available at https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1513409385.pdf

[31] https://technation.io/visa/

[32] "French Tech Visa for Founders" French Tech Visa. https://visa.lafrenchtech.com/3/french-tech-visa-for-founders

[33] https://startupvisalithuania.com/about

[34] "Already 6 startups relocated with Startup Visa Lithuania program this year" Startup Lithuania 21 March 2018. Available at: https://www.startuplithuania.com/news/already-6-startups-relocated-startup-visa-lithuania-program-year/

# Brexit

The June 2016 European Union membership referendum sent shockwaves around the European startup ecosystem. Prior to the result, multiple groups in European tech came out in opposition to the measure. In a survey by London-based Tech London Advocates, found 87% of their members polled opposed Brexit, with only 3% in support (the remaining 10% declined to take a position on the issue).[35]

After the Brexit vote, several notable funding sources for early stage companies were put in jeopardy. Almost immediately, the European Investment Bank (EIB) imposed a moratorium on new long-term loans to the UK, despite financing €7.5 billion worth of infrastructure in the UK in 2016 alone.[36] It was later found that this moratorium resulted in the loss of 70% of the EIB's existing deals with UK-based venture capital and private equity groups. Describing figures seen in an internal EIB document, the Financial Times reported in 2018, "the UK last year accounted for 8 percent of the bank's equity investments, compared with 27 per cent the year before… The massive cut pushed the country out of its spot as the main recipient of EU venture funding, which is the single largest source of early-stage capital on the continent."[37] Similar measures were taken by the European Investment Fund (EIF), which appeared to constrain funding to UK venture capital firms after Brexit. The EIF had committed almost £2 billion to UK-based VC firms, and while honoring existing commitments, prominent UK-based investors including Seedcamp, Hoxton Ventures, and Episode 1 Ventures have been denied funding after the Brexit vote.[38] According to the EIF's mandate, it can provide targeted financial solutions to EU and accession countries, of which the UK will no longer be a member after March 29, 2019.

The UK is Europe's strongest and most vibrant headquarters for tech, and the country attracting the greatest amount of the continent's investment, the most startups and investors.

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35 Britain's tech sector overwhelmingly opposed to Brexit. By Alex Hern 4 March 2016, The Guardian. Available at: https://www.theguardian.com/technology/2016/mar/04/britains-tech-sector-overwhelmingly-opposed-to-brexit

36 "Post Brexit European funds dry up in the UK. 24 August 2017. Journal de l'environnement. Available at Euractiv https://www.euractiv.com/section/uk-europe/news/post-brexit-european-funds-dry-up-in-the-uk/

37 "European Investment Bank pulls back on UK funding after Brexit". Aliya Ram 20 April 2018. The Financial Times. Available at" https://www.ft.com/content/bce67b82-4412-11e8-93cf-67ac3a6482fd

38 EIF funding to UK firms has not completely stopped after the Brexit vote. EIF has continued to fund existing agreements and follow on funding to firms that have had prior arrangements. Similarly, UK-based funds that are investing across Europe have been successful at receiving investment. One notable example, an EIF investment to Balderton Capital's sixth Series A fund was not originally made public by EIF and only disclosed after media inquiry. For more, see "One of the UK's biggest venture capital firms has bucked a Brexit trend and raised a new $375 million fund." Shona Ghosh 27 November 2017. Business Insider. Available at http://uk.businessinsider.com/balderton-capital-375-million-european-investment-fund-us-asia-2017-11 and "A £2 billion European investment fund has stopped giving money to UK tech startups because of Brexit". Shona Ghosh 19 May 2017. Business Insider. Available at: http://uk.businessinsider.com/the-eif-has-frozen-funding-to-new-uk-vcs-and-cancelled-an-angel-investment-scheme-2017-5

It is expected that the country's exiting of the EU will have strong reverberations among the wider European startup ecosystem. Many early stage companies based elsewhere in the EU utilize the UK's straightforward company registration and filing rules, pro-business regulation and high standards for corporate governance. Global companies can be established in the UK in less than 13 days, and company registrations can be processed in less than 24 hours.

Growth- and later stage startups headquartered in the UK indicate talent loss is a key worry in the wake of Brexit. Some companies already report difficulties in hiring scarce skills and international staff.[39] A 2018 report by Innovate Finance, a membership association for the UK's fintech community, argues that "the ability to recruit and retain talent is fundamental to the growth of UK fintech."[40] A survey of their members found that 42% of the workforce for UK fintech companies is from overseas, and that a majority of these workers are employed in computer and software development.

Around the UK, opposition to Brexit by those in European tech has continued. In May 2018, over 80 technology and innovation leaders in the UK launched "Tech for UK", a platform arguing for a new "people's vote" on the terms of Brexit,[41] and the grassroots organization has continued to push to raise awareness about prospective negative impacts Brexit may have on the UK's tech ecosystem.

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[39] "One-third of London tech firms losing out on potential hires due to Brexit". By Karl Flinders in Computer Weekly 17 November 2017. Available at https://www.computerweekly.com/news/450430265/One-third-of-London-tech-firms-losing-out-on-potential-hires-due-to-Brexit

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## More than anything, Brexit means uncertainty.

> "Talent really is the only issue we are really worried about because of immigration walls...at the CXO and the senior level, you need to be able to offer visas across the global footprint. At that level and below that, developer talent. The free movement of highly skilled engineers across Europe has been integral. London has been a magnet for that kind of talent historically. We are extremely worried about that singular critical issue. But everything else, we are not worried about. It is still easy to incorporate in the UK, the laws around hiring and firing, bankruptcy and everything else are extremely attractive still, allowing you to take big risks. There still continues to be big businesses to sell into. There remains a lot of venture money that is there… we are not stressed about that. New workspaces are going up, there is more and more housing [in London], as well as talent. You really can't build a big business without talent. [But] if we face barriers on that, we are screwed."
>
> **— RESHMA SOHONI, CO-FOUNDER AND MANAGING PARTNER, SEEDCAMP**

> "Marco -economic uncertainties, such as Brexit...are a huge pain for European entrepreneurs doing business..."
>
> **— MARIE-HORTENSE VARIN, PRINCIPAL AT PARTECH**

> "Brexit and the EU brings a lot of uncertainties at the moment, which is a challenge, especially if you are incorporated in the UK and have a 100% daughter company in another EU country. Let's see what happens with London concerning the Brexit - we can feel the Brexit in the ecosystem already with e.g. people being more hesitant to move in jobs etc. So this may add to a shift from London to Berlin too."
>
> **— DR. VIVIEN DOLLLINGER, CO-FOUNDER AND CEO OF OBJECTBOX**

More than two years on from the Brexit referendum vote, the UK and the European Union have yet to agree to the final terms of Britain's exit from the world's largest single market. Without an agreement in place, the impact of Brexit on the country's and the larger European continent's early stage companies is yet to be known.

Outside of the UK, other European countries have looked at Brexit as an opportunity to bolster support their own tech ecosystems, both in an effort to attract UK-based entrepreneurs and investors and as a way to differentiate themselves. For example, Portugal, has opened up a new "Golden Visa" resident permit for investment activities, to enable third country nationals (of which UK citizens will become after March 29, 2019) to retain access to the EU market.[42] The new permit, an amendment to the country's existing Aliens Act, helps secure a residency visa waiver for Portugal for those that invest at least €1 million in the local economy, buys property worth €500,000 or creates 10 jobs. In July 2018, the country further amended their National Strategy for Entrepreneurship to ensure greater capacities for foreign entrepreneurs. One of these initiatives is the creation of a centralized information point in English for foreign entrepreneurs to aid in launching new ventures and to ease in finding support for them.[43]

France, has taken an alternative approach, by widely promoting their ecosystem, and making clear the benefits the country has in place for companies looking to relocate from the UK. In early 2017, French digital minister Axelle Lemaire noted, "Many companies have already been in touch although I think many more will come in the forthcoming months when the timetable for Brexit becomes clearer. In any case, whether they plan to leave now or have yet to decide, I've noticed an increased interest in the French ecosystem from British fintech companies."[44] The country has continued to reach out to UK companies. Various groups, including the French Central Bank has surveyed UK-based fintech companies on their Brexit plans.[45] In the meantime, the country continues to support ecosystem initiatives and continued to promote their longstanding efforts to build a diverse and inclusive "Startup Nation."[46]

[42] "ARI -- Residence permit for investment activity". Serviço de Estrangeiros e Fronteiras. https://www.sef.pt/en/pages/conteudo-detalhe.aspx?nID=21

[43] "Government launches new measures to support entrepreneurship" StartUP Portugal. Available at: http://startupportugal.com/sp-plus/

[44] "France's digital minister: There's 'increased interest' in France from British fintech startups after Brexit" by James Cook in Business Insider 4 January 2017. Available at: http://uk.businessinsider.com/france-digital-minister-axelle-lemaire-brexit-startups-fintech-paris-2017-1

[45] "Your intention regarding the continuity of your activity in France post Brexit." Online Survey by Banque de France. Available at https://epsilon.escb.eu/limesurvey/496617?lang=en

[46] "Le Swave, France's first innovation platform dedicated to fintech businesses, launches its second recruitment campaign". Paris and Co, 18 September 2018. Available at https://www.parisandco.com/News/Latest-News/Le-Swave-France-s-first-innovation-platform-dedicated-to-fintech-businesses-launches-its-second-recruitment-campaign

## Despite reports of gloom, a number of early stage founders and investors remain optimistic

"In the earliest stages, the list of potent existential threats is so long that Brexit doesn't usually end up near the top. Since the vote, London has taken market share from continental startup hubs -- so the impact is apparently minimal. If it becomes much more difficult to hire here, that's what will really start to make a difference. One cause of Brexit is the perceived divide in opportunities for people in different areas and economic groups across the UK. Given that we will happily back any talented founder with as little as a slide deck, I'd hope that we are part of the counterpoint to this. Whatever background, capital doesn't get much more accessible than that — and I believe it's that equality of opportunity that will help reunite this country in these challenging times. And whatever happens with Brexit, leaning into that increased diversity can only put us at a greater competitive advantage."

**— NIC BRISBOURNE, FOUNDER AND MANAGING PARTNER, FORWARD PARTNERS**

Based in London, Nic has 18 years of experience in the venture capital industry. Prior to founding Forward Partners, Nic was a Partner at leading venture capital firm Draper Esprit. As a VC, he has worked and invested in London and Silicon Valley, leading over 25 investments and enjoyed a number of successful exits, including buy.at and Zeus Technology.

"We were already aware of the Brexit when we decided to move our startup to London. For us as a startup, the biggest concern would be if immigration policy would inhibit talent inflow to the country and hurt the overall innovation potential and scientific research activities in the UK."

**— YIANNIS KIACHOPOULOS, CO-FOUNDER AND CEO OF CAUSALY, LONDON**

"We are all looking forward to some reasonable agreement between the UK and EU. Alas, it seems like we are headed towards a cliff and the driver of the bus is asleep. Hopefully, someone will save the day at the last moment."

**— MIROSLAV VALCHEV, COO AND CO-FOUNDER FINDMECURE**

> "Beauty services [our core business], aren't as impacted in a recession. People will stop many other things before they stop getting their hair done. I am not worried right now [about Brexit] from a user point of view. I do have some concerns about hiring... But it's impossible to know right now. It is worrying to think about how we are going to build a world-class tech economy in the UK if we don't have access to world-class talent who might not have the right to live and work in Britain."
>
> **— SHARMADEAN REID, FOUNDER OF BEAUTYSTACK, BASED IN LONDON**

> "In what is considered a traditionally slow period for investment and with the added uncertainty created by Brexit, the UK has continued to attract VC investors to its thriving startup and scaleup sector...The UK enjoys significant advantages even in the shadow of Brexit, with great access to talent, its status as a global financial centre, world leading universities and concentration of traditional private investment managers. Although Brexit poses a big question mark for investors, many enterprises have already acted to mitigate the potential risks with several fintech companies having pursued banking licenses in order to be able to continue to operate in and across different jurisdictions."[47]
>
> **— PATRICK IMBACH, CO-HEAD OF KPMG'S TECH GROWTH TEAM, LONDON**

Without a deal in place, the impact of Brexit on early stage companies remains speculative. Despite potentially negative impacts, a number of founders remain optimistic about the future of tech in the UK after Brexit. In Silicon Valley Bank's 2018 Outlook survey, 49% of UK-based startup entrepreneurs polled reported feeling generally confident about the coming year. 42% of respondents felt that business conditions would stay the same into next year. Less than 10% of those polled reported expecting things to get worse for them in 2019, when the full impact of Brexit will be known.[48] The British treasury has also sought to support funds that will lose out on EIF funding, promising £400 million to the EIF's UK equivalent, the British Business Bank.

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[47] "Brexit fails to dent Venture Capital appetite for UK startups" KPMG 11 October 2018. Available at: https://home.kpmg.com/uk/en/home/media/press-releases/2018/10/brexit-fails-to-dent-venture-capital-appetite-for-uk-startups.html

[48] UK Startup Outlook 2018. Silicon Valley Bank. Available at: https://www.svb.com/globalassets/library/uploadedfiles/content/trends_and_insights/reports/startup_outlook_report/uk/svb-suo-uk-report.pdf

“It’s not easy to replace [the loss in EIF funding]. That being said, the BBB has moved incredibly fast, which is amazing to see, and has tried to fill in that gap as much as possible. Also, that was a blip...I think VC funds and partners are nimble enough. All four of us [at Seedcamp] are multiple nationalities.  So you can also set up different offices, and things. We have always been a European seed fund….I think the long term capital drying up we are not worried about...I think we will figure out ways to operate at a European footprint…”

**— RESHMA SOHONI, CO-FOUNDER AND MANAGING PARTNER, SEEDCAMP**

“No matter what the outcome we don’t believe there would be a dramatic change. We work with non-EU countries like Switzerland and the US already so we guess things won’t be too different for UK. Migration workflows of skilled workers might be affected but in a world of distributed workforce the impact might be not that big on startups. We might actually see an uptick in our business as more UK companies would be looking to expand operations abroad.”

**— PANOS PAPODOPOULOUS, PARTNER MARATHON VENTURE CAPITAL**

“Brexit does not concern much, instead I believe Brexit will provide more benefits to the startup ecosystem in London, which we expect as a counter action the government of London will take.”

**— JASON SHIM, CO-FOUNDER AND CHIEF STRATEGY OFFICER 42 MARU**

# Conclusion

This report aims to provide a small window into the conditions for early stage startups in Europe. The landscape for these companies is incredibly varied and the horizon is often unknown. Technological change advances rapidly, and competition from abroad remains a continual threat. Despite this uncertainty, we find that there are many reasons for European founders to be optimistic. Over the past decade, the European startup ecosystem has grown and matured. European companies have flourished and succeeded on the highest levels, providing inspiration for the next generation of founders and companies, showing it is possible to grow and scale from Europe. Investment levels have continued to climb, and public support has never been as extensive. We've seen successful founders have investing locally, both in seed funding and mentorship. At the same time, ecosystem support has grown significantly, with exciting events taking place across multiple geographies. These events provide multiple opportunities for founders to learn, share and connect, which have become integral practices to modern entrepreneurship.

Across the continent, the founder journey remains highly individualized. There remains no "common" story for early stage founders in Europe, as each has to pave their own path. While opportunity and support is better than ever before, it doesn't mean that founders can afford to be complacent. In addition, with more early stage companies than ever before, the competition to stand out grows ever greater. Despite more funding availability, many find that it is not quite high enough for the global ambitions these founders aim to achieve. This remains true especially outside the continent's largest tech ecosystems -- the UK, Germany and France. For Europe's founders headquartered beyond these hubs, funding, and more importantly-- recognition and attention for companies in these geographies remains undervalued.

As the conditions for innovation evolve, the roadmap that charted success for one founder may not work for another. Each has to find their unique value proposition and path to success. What remains constant, is that often with less investment, founders in Europe continue to be resourceful, despite their means. Some have to rely on public funding to support themselves in the early days. While it may slow some founders down, for many, it provides a valuable opportunity to continue what will always remain an uncertain journey.

In this report, we have tried to show a varied picture of some of the success stories, resources and conditions for early stage companies in Europe. However, this report can only show a limited view, and should not be taken as an exhaustive account. Early stage companies in Europe come in many forms, from companies started at a startup weekend, to concepts in idea stage to intricate business plans formulated over the course of an MBA education. Some are side projects that have operated in stealth mode for many years. Still others are those that have trudged along, in challenging geographies, held together by a combination of award funding, pitch contest money, public grants, family support and most importantly, by a dream that will not die. Some of these have gone on for many years without recognition and founders that refuse to give up. They do so knowing that funding is lower, and regulations and cultural barriers are higher in Europe. It is these stories, and often these unsung heroes that truly embody the best qualities of what makes European startups great.

In recognition of the many paths that these companies have taken (including the ones not profiled here), it is important that we do not make generalizations about what a typical founder journey looks like. There is an incredible variation, but possibly what defines all early stage European startups is their optimism in the face of incredible uncertainty and risk. But these founders don't tend to concentrate on what is unknown. They are too busy looking ahead.

# Methodology

Defining an "early-stage" company in a way that is acceptable to all is nearly an impossible task.

When you speak with founders, even those leading the continent's largest and most promising companies, the ones that have raised millions of Euros and acquired thousands of customers, many of them will take issue with being described as anything beyond an "early-stage" company. From their perspective, there is still so much more work to do. At a time where products remain in continual development, and when the entire world becomes your prospective market, the company journey is one that is always varied and unique.

"Early stage" companies cannot easily be defined by their age, how many funding rounds they have raised, or the amount of investment they have received. Importantly, an early stage company in the biotech space looks very different to one in Fintech, SaaS, or hardware. Within each of these categories too, there remains considerable variation. Similarly, many of these companies do not fit into neat categories. While many following the tech ecosystem are accustomed to frequently seeing a wealth of data, tables and numbers used to describe the startup scene published by data companies, each of these classifications are largely subjective.

Due to the many different technologies that they utilize and the markets and verticals many of them seek to reach, it is often difficult to isolate, and attribute a single vertical to these innovative companies. During the data collection process, each one of these has been attributed a unique category by the Tech.eu team, based on a variety of factors. These include how the company describes themselves and the industries they are active in. Here, we have used our best judgement to attribute companies most appropriately.

"Early stage" companies are best defined by their practice. They are primarily engaged in product development and ideation and are generally pre-revenue. They differ from "growth" stage companies that are expanding beyond their home markets, often (but not always) raising funding to help them along that path. Determining what companies are “early stage” requires yet another subjective distinction. This is further challenged when you must apply this subjective judgement to a large dataset for the purposes of quantitative analysis.

In order to truly identify the companies that were considered “early stage” I followed several rules in developing the dataset.

1. Companies must be founded in 2012 or later

2. If companies were explicit about the type of funding they raised, I include all stated angel, Seed and Series A funding for the company during the time period (2015-2018 Q2).

3. Most companies do not attribute the round type to their funding. Still others will raise several seed funds, over multiple years, following a growth model that is only known to them. If the round type was not attributed, and could not be found through researching the company, I examined the funding history for the company in question and made a justification based on the (a) size of the round; (b) years on from seed/angel funding, and (c) total investment raised.

4. European companies have vastly different timelines from one another. For companies with multiple rounds, funding rounds were included in this early stage report if their total investment was less than EUR 5M at the time of the investment, or if the timing of the follow-on funding is within the same year. Significant investment beyond the first two investment records—no matter how they are attributed indicates a change in company strategy (moving to growth).

5. When after applying the above rules things were still unclear, I evaluated the variance of the round from other early stage investments made in the country during the same year. If the round was far off of the mean, the round was excluded.

In our final dataset we were left with 7,501 unique funding round observations out of a larger corpus of 11,422.

The neatness of quantitative analysis collapses nuances between what are very multifaceted companies. Quantitative analysis treats companies as data points (two fintech companies measured only on their origin and fundraising), when in actuality, they all have very unique journeys, resources and outcomes. There is often very little that can be comparable about many of these cases and much lost in between the numbers. Wherever possible, I have used visualizations to help reveal trends and projections with the data, to help readers focus on the relationships, rather than the figures. This  is why we have sought to include qualitative insights wherever possible, to help give depth and illustrate a selection of stories from around the continent.

The exception to these rules, are attributed in the text. Most significantly, this is in the analysis of the “Technology Trends” section, with deep dives into AI, Machine Learning and Blockchain. The bulk of these graphs and analysis comes from data collected by CB Insights, a leading and credible source for data on the types of  technologies used by the startups we cover. These trends reflect CB Insight’s attribution for Seed and Series A rounds. For more about CB Insights and their data, please see https://www.cbinsights.com

Totals and locations for European AI companies have come from Asgard and Roland Berger’s Global AI Intelligence Landscape. Data for the technical talent sections comes from a number of different sources, including Eurostat, GitHub and Stack Overflow’s public APIs and with analysis assistance from Ben Frederickson’s public GitHub (https://github.com/benfred/github-analysis).

## Data Collection Procedure

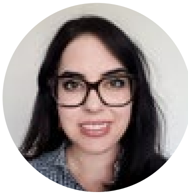
From November 2013 onwards, Tech.eu has continuously monitored over 200 sources of news and information across multiple European regions and languages. All of the transactions have been analyzed by the Tech.eu team for the purpose of this report, along with additional transactions that were not reported by any of the aforementioned sources but flagged by people from our collective networks. In many cases, the deal size was not disclosed, but we’ve included estimates for any transaction reported by a publication that we consider reliable and trustworthy.

When a deal size was disclosed, but in a currency different from the euro, we’ve converted the amounts around the date the transaction was first announced or reported we cannot guarantee the converted amount exactly mirrors the price at the time of the closing of an agreement (mainly because that date is rarely shared). In this report, you will find all graphs and tables refer to this euro figure with the notation (est) for the estimated value. In the text, when referring to specific investments, the deal sizes are referred to in the context in which they were initially shared (usually U.S. dollars).

We have opted to include non-European Union member states such as Norway, Switzerland and others in this analysis when available, as we consider them to be an integral part of the European technology industry as such. This is in line with Tech.eu’s overall editorial policy.

Considering the vastness, fragmentation, and breadth of the different languages that define Europe, it is possible that some transactions are not included in our analysis. It is important to remember, that as these are often deals made by private companies, not all are disclosed.

# Author and Acknowledgements



This report was written by Natalie Novick, a sociologist and Tech.eu's research lead. In addition, she is the Research Director for the European Startup Initiative, a non-profit research group working to facilitate mutual understanding between municipalities and their startup ecosystems.

For the past several years, she has been conducting fieldwork with entrepreneurs and community builders for the project: The Startup City: The meaning of place in Digital Europe, in support of her PhD dissertation for the University of California, San Diego. In support of this project, she has spent time crossing startup hubs all around Europe, from Dublin to Minsk, from Helsinki to Athens getting to know the founders and tech teams that are helping to drive European innovation.

Natalie's research examines the spaces and places of Europe's entrepreneurship landscape and the culture and motivations of the entrepreneurs that inhabit them. Her areas of expertise include community formation, cross-border migration, entrepreneurship and the intersection between technology and policymaking. Natalie holds a M.Sc. in Comparative European Politics with Distinction from Trinity College Dublin, and an MA in Sociology from UC San Diego. In addition to her academic work, she consults with governments both at the municipal and federal level on ways to help improve conditions of their startup ecosystems.

She is an active supporter of early stage entrepreneurs in Europe, frequently speaking at events and volunteering her time to assist beginning founders and community organizations dedicated to entrepreneurship. Community is at the heart of what makes the European tech ecosystem so vibrant. It is through a culture of generosity that helps drive innovation forward.

Natalie sincerely thanks all of the founders, investors and community leaders that agreed to be profiled in this report. Special thanks to Anamaria Luga of Pioneers, Katrine Arevad of TechBBQ, Dorte Egelund of Digital Hub Denmark, Alex Barrera of Press42 and most importantly to our Tech.eu team, for helping to facilitate data availability, interviews and commentary.