

The road to AI

Investment dynamics in
the European ecosystem

AI Global Index 2019

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FRANCE  DIGITALE

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Roland
Berger



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Foreword

Cash is king. This rule of thumb in business may also apply to the expansion of AI companies. That is the assumption we wanted to check in the course of our second global mapping of the European AI ecosystem.

In 2018, our Roland Berger-France Digitale joint study ("Joining the dots – A map of Europe's AI ecosystem") highlighted an indisputable fact: the European AI ecosystem is strong, with 2,261 startups, 383 AI-dedicated labs and 3,801 dedicated communities spread across 44 countries, but remains fragmented and lacks a clear strategy.

Europe's position in the global AI competition could be summarized as "united we stand, divided we fall". In the 2019 edition "The road to AI – Investment dynamics in the European ecosystem", we came to the conclusion that access to capital will be key to integrating the European AI ecosystem. Trends in investment flows demonstrate the extent of interdependency within the European ecosystem, as well as its interconnections with the global leaders in AI, namely the United States (US) and China. A coordinated investment, talent and regulatory strategy would strengthen the European AI ecosystem and set Europe on a clear path towards global leadership.

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Methodology

The 2019 AI Global Index supplements the 2018 joint study entitled "Joining the dots – A map of Europe's AI ecosystem", which presented a detailed picture of the startups, research labs and communities in Europe, and divided European countries into three categories based on the density and rigorousness of their AI ecosystems. Among these countries, the United Kingdom (UK), France and Germany emerged as the three leaders of the European AI ecosystem.

Roland Berger and France Digitale conducted desk research and built an original database that covers 28 European Union members plus Norway, Switzerland and Israel. France, Germany, the UK and Israel account for 80% of investments in AI startups from 2009 to 2019. As such, the following analysis will focus on these four countries, as the investments from elsewhere are too scant to draw relevant analysis from them.

1. Investment¹ trends in AI startups, 2009-2019

A flourishing European AI ecosystem

The number of startups funded is one of the indicators illustrating the dynamism of an AI ecosystem that supports entrepreneurship, attracts investments and realizes startup-friendly public policies.

In line with the 2018 study, the leaders of the European AI ecosystem boast the highest number of startups funded per 10,000 inhabitants in 2019. The UK is the top winner with 590 AI startups funded, a ratio of funded startups to population of 0.9%. France ranks second with 235 AI startups funded and a ratio of 0.4%, while Germany ranks third with 218 funded startups and a ratio of 0.3%.

In comparison with the European leaders, Israel stands out from the crowd with 189 new AI startups funded and a striking ratio of 2.1%. The country's strong performance in funded AI startups to population calls for a closer look into the dynamics of the ecosystem shaping its performance. The dynamism of the Israeli AI ecosystem stems from a local culture that strongly advocates an ethic of entrepreneurship and internal business combined with strong ties with the American market.

Ever-increasing investments in European AI startups

The four leaders in terms of number of AI startups funded (the UK, France, Israel and Germany) attract 80% of the total amount of funds raised in this sector over the 2009-2019 period, representing USD 8.6 bn out of a total of approximately USD 10.8 bn in funds raised by AI startups. The UK and France account for the biggest investment flows, with USD 3.5 bn invested in the UK between 2009 and 2019 and USD 2.1 bn in France.

Following its regular average growth of +58% per year, France is expected to score the highest absolute growth, with USD 1.2 bn by the end of 2019 (projected results for the second half of the year).

In the period from 2009 to 2019, Israel leads the way in terms of funds raised per startup, with an average of USD 4.7 m in investments. France comes second with an average of USD 4.5 m. Germany and the UK follow behind, respectively raising USD 2.6 m and USD 2.5 m per startup. However, when considering investments in AI startups only, France takes the lead over its European counterparts.

Globally, investments in AI startups have been attracting more and more funds since 2014, with a compound annual growth rate of 55% for each country.

For the first time, our data show a significant leadership change. Following its regular average growth of +58% per year, France is expected to score the highest absolute growth, with USD 1.2 bn by the end of 2019 (projected results for the second half of the year) due to booming investments in Series C during the first half of 2019 with ContentSquare, Wynd, Shift Technology and record fundraising of USD 230 m for Meero.

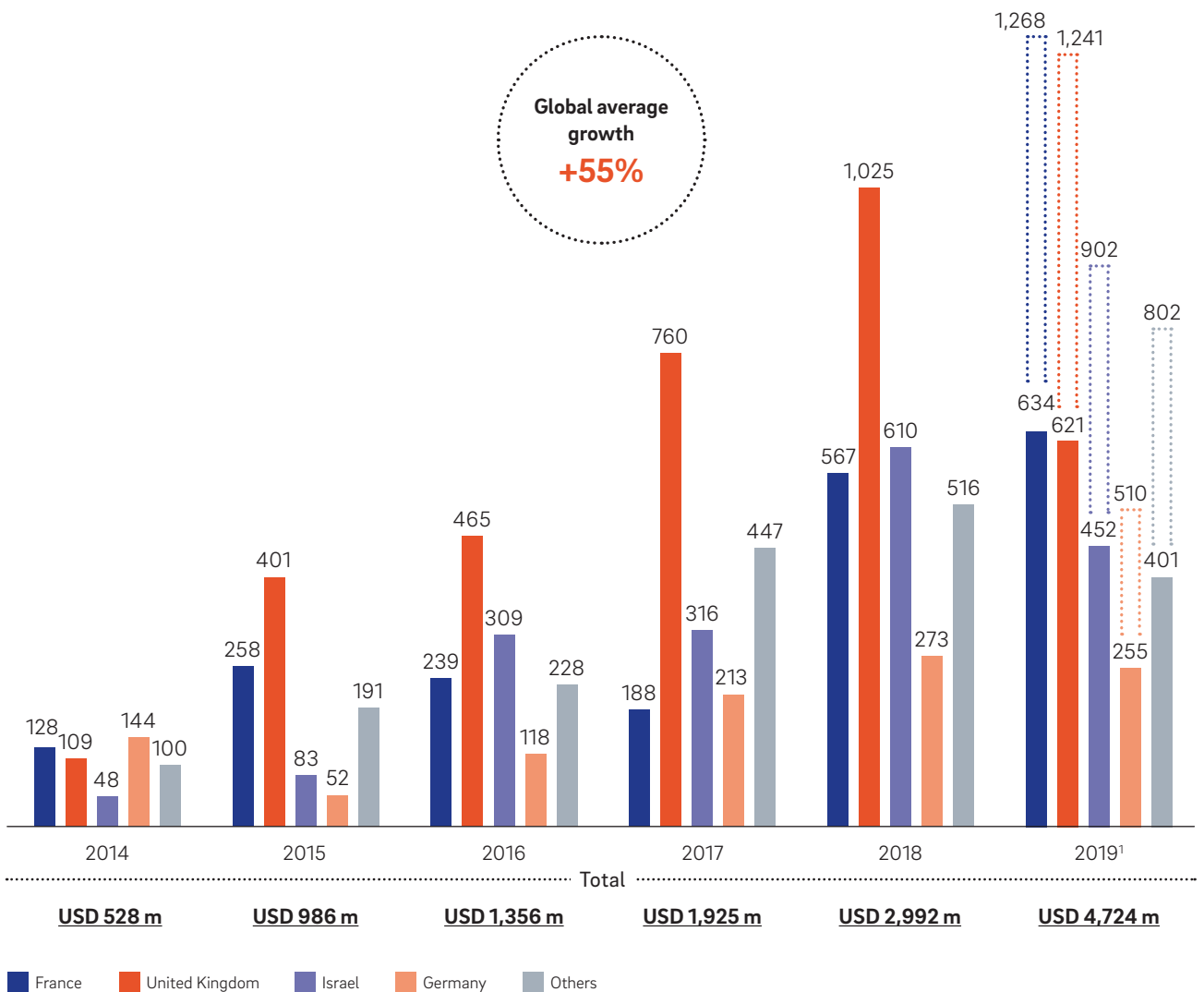
France topples Israel and comes out on top in terms of investment attractiveness. There has been a spurt of funding in France, while Israel has seen constant

¹ The term "investment" encompasses BA, VC, CVC, private equity funds, crowd equity and IPOs

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AI-dedicated fundraising, or: the French breakaway

Funds raised 2014-2019 [USD million]



¹ Projections for the entire year, figures available only for H1 2019

Source: Roland Berger

growth. Even though the figures for investments in Israel in 2014 were low (basis of USD 48 m in 2014), the country's compound annual growth rate is extremely high at +80% each year, a harbinger of Israel's astounding dynamism. In Germany, the number of VC-funded startups has increased by 77% with the average amount invested remaining stable between 2018 and 2019. In Israel, within the same period, the number of VC-funded startups has increased by 8%, while the average amount invested has grown by 50%. Overall, these figures paint a very positive picture of European dynamism, especially in France, which has witnessed the number of VC-funded startups rise by more than 100%. Mostly driven by seed rounds, this astounding dynamism is fostered by both a promising pool of talents and policies favoring entrepreneurship.

Driving forces of the European ecosystem: The US and the UK are taking charge

There is a visible polarization of funds emission, with the US and the UK identified as the two main investment-issuing pools both for their dynamism and the significance of their investments, the two countries having invested a total of USD 2.6 bn in Europe over the last 5 years.

However, these figures should not elude the fact that, by comparison, the United States remains the indisputable leader of AI startup dynamism. In 2018, the United States counted 70 exits for an overall investment of USD 4.5 bn and 510 transactions with average fundraising of around USD 10 m. Europe counted more transactions overall (983) with 62 exits for USD 3 bn invested, but the

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average round reached only USD 3 m. In 2019, the average fundraising amount has rocketed in the United States, shooting up from USD 10 m to USD 24 m with 55 exits, 378 transactions and USD 9.1 bn of investment. Though average funds raised also increased in Europe, the leap remains significantly less impressive with 53 exits, USD 2.4 bn of investments, 516 transactions and average fundraising of USD 4.6 m.

Against the background of the Brexit vote, UK companies' willingness to move their business activities beyond their borders,² the pressure of the weaker pound on earnings, as well as weaker GDP growth in the UK (1.3% in the second quarter of 2019) creates new risks for the UK economy. Accompanied by a prolonged delay in Brexit, such volatility and economic pressures may weigh on future European investments originating in the UK.³

² Institut Montaigne. (2019). Brexit : qu'en pensent les entreprises ? [online] Available at: <https://www.institutmontaigne.org/blog/brexit-quer-pensent-les-entreprises>

³ Cci-paris-idf.fr (2018). Intégrer « l'effet Brexit » : cerner les enjeux, évaluer les risques, relever les défis ! [online] Available at: http://www.cci-paris-idf.fr/sites/default/files/etudes/pdf/documents/pp_effet_brexit_version_officielle_juin_2018.pdf

Interdependency of the European AI ecosystem: The case of the UK, France and Germany

To varying extents, startup ecosystems in France, the UK and Germany rely heavily on their domestic investors.⁴ In France, 73% of investors are French. In the UK, 65% of investors are British. In Germany, 64% are German. In parallel, European investors represent 16.5% of foreign investors in France (of which 7.5% are from Germany and the UK), 11% in the UK (3.3% are from France and Germany) and 17% in Germany (6.4% are from France and the UK).

In comparison with France and Germany, the UK AI ecosystem's lower reliance on its domestic investors is a reflection of the country's ability to attract a diverse array of foreign investors. The top 5 investors in the UK startup ecosystem are headquartered in 46 different countries, whereas the same figure is 25 for Germany and 20 for France.

Among the top 5 foreign investors within the AI startup ecosystems in the UK, Germany and France, US investors are highest in number, representing 17.5% of the foreign investors in the UK, 14% in Germany and 7.5% in France. The fact that US investors outnumber any other European investors shows the underperforming state of cross-country investments across the three European leaders, against the backdrop of a prominent transatlantic link.

In line with the low number of active Chinese investors in Europe, China makes up just a small proportion of the three countries' startup ecosystems. In France, Huami and Hax, and in the UK, Lanting Capital, Alibaba

Group, Tencent Holdings, Arm Accelerator, Cherubic Ventures and ZhenFund represent 0.5% of foreign investors, respectively. In Germany, on the other hand, Alibaba Group, China Accelerator, Hax, Hillhouse Capital Group Linear Venture, Sequoia Capital China and Tinavi Medical Technology represent 1.7% of foreign investors.

Overall, the UK can boast of being more attractive to investors in and outside of Europe than France and Germany, an attractiveness that has enabled the diversification of the UK's AI ecosystem. Furthermore, the three AI ecosystems' heavy reliance on their domestic investors proves that Europe is still far from being a "Digital Single Market", indicating a need to further bring down barriers and foster cross-country European investment.

Startup maturity: The golden age of Series B and C

Healthcare and biotech (representing 13% of AI startups), entertainment/media/culture (9%), financial services (8%) and defense/security (4%) are driving the growth of AI startups.

2019 trends in European AI startups by industry follow the 2018 trends in which 70% of the startups focused on B2B services with 35% using AI for general/cross-sectoral applications.

Among the sector-specific applications of AI, healthcare and biotech witnessed a surge in European AI startups. The four percentage point increase from 2018 reflects the swelling global use of AI to improve drug discovery, diagnostics and patient monitoring and care, with the total public and private sector investment in healthcare AI expected to reach USD 6.6 bn by 2025.⁵ Further, healthcare AI startups received USD 864 m with 75 VC-backed deals and financing rounds in the second quarter of 2019, up from USD 764 m in the second quarter of 2018. These figures are a strong sign of the continued enthusiasm in harnessing AI for healthcare.⁶

⁴ The number of investors is based on the top 5 investors in startups available on Crunchbase

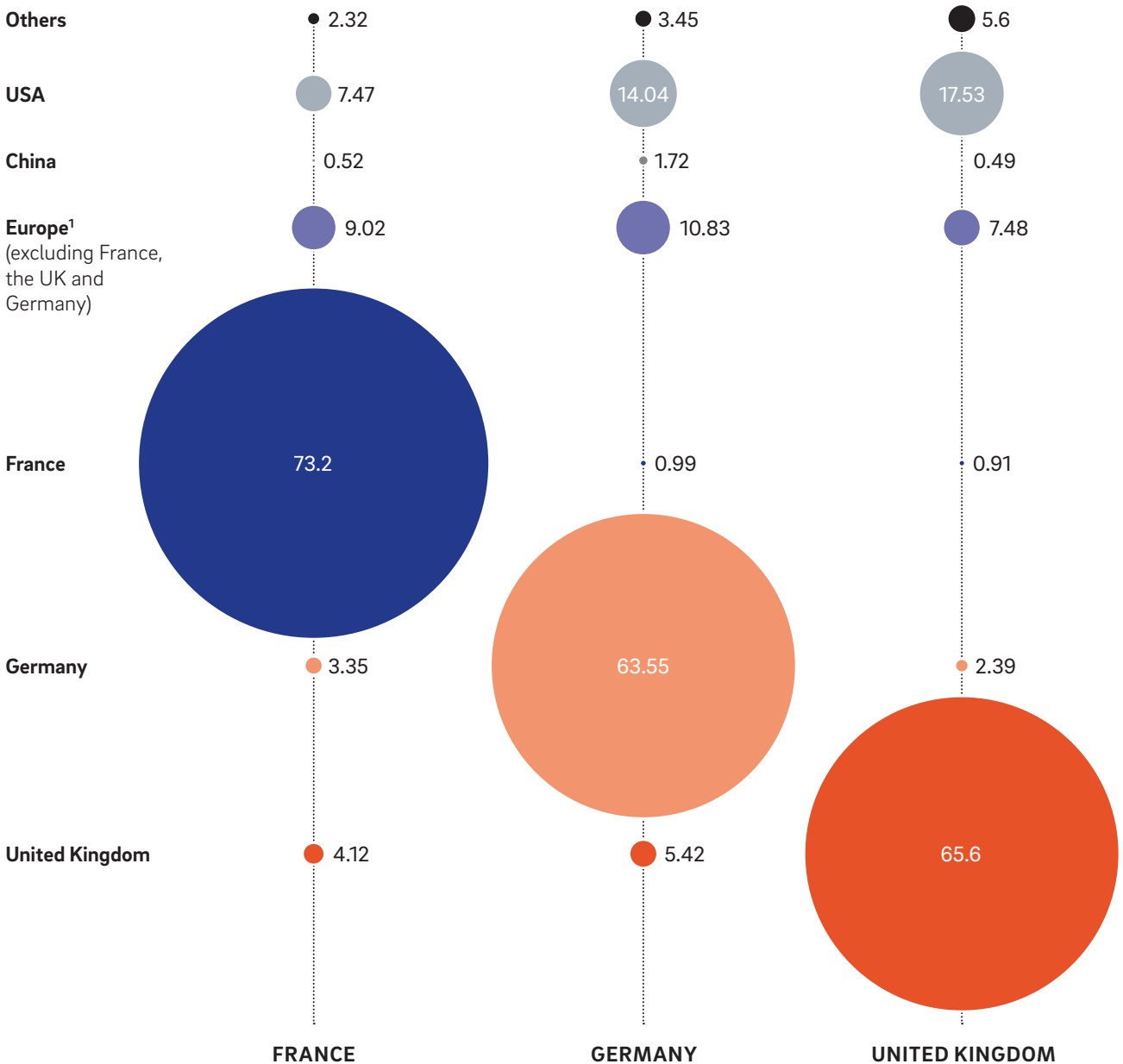
⁵ Forbes (2019). [online] Available at: <https://www.forbes.com/sites/insights-intelai/2019/02/11/ai-and-healthcare-a-giant-opportunity/#3d37d11a4c68>

⁶ <https://www.beckershospitalreview.com/artificial-intelligence/healthcare-ai-reached-record-high-846m-funding-in-q2-2019-report-finds.html>

AI-dedicated investment-issuing pools

The case of France, Germany and the UK (2019 up-to-date figures)

INVESTORS' COUNTRY OF ORIGIN (%)



¹ Europe: European Union + Switzerland + Norway

Source: Crunchbase

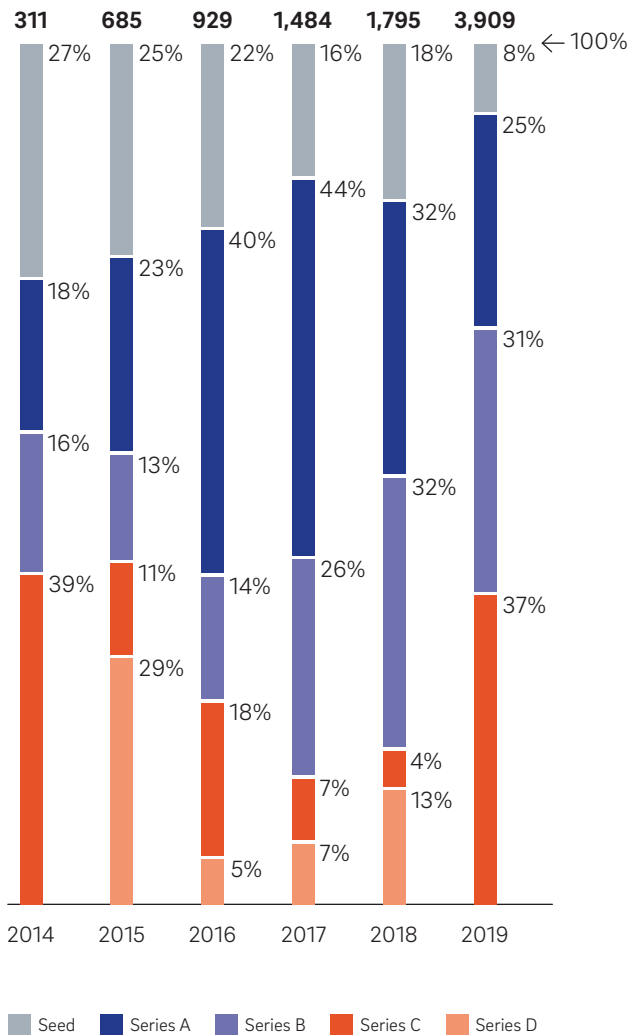
In terms of startups' maturity, a structural shift in investment strategy has been observed internationally since 2015. While most investments were occurring at seed level in 2015 (USD 171 m out of USD 685 m, representing 27% of total investments in AI startups), this figure has now shrunk to 8% of overall investments. Investments in Series A startups peaked in 2017 when they represented 44% of all investments, but they have decreased over the past three years to a more moderate 25%. Today, 68% of investments in AI startups occur at either Series B (31% of all investments) or Series C level (37% of all investments, approximately USD 2.6 m). Scaleup investments (Series D+) have been replaced by ambitious Series C. Indeed, we can observe growth in the average amount of investments in Series C startups, which rose from USD 24 m in 2015 to USD 71 m in 2019, a factor of three. All in all, investors seem to be more confident when it comes to their future exit from companies, encouraging them to be bolder. They are indeed investing more money in Series C startups, as evidenced by an investment of USD 170 m for Innoviz, and Meero's USD 230 m fundraising. Startups do not need to wait until the fourth round to finance international growth anymore, which results in average Series C investments being USD 80 m and the average for Series D being approximately USD 55 m. The average Series B investment is growing as well with a record fundraising of USD 125 m for the Berlin-based insurtech wefox Group. Series A remains stable.

Now past the first phase of development during which investments were targeted towards seed-level startups, the ecosystem is today well established. Hence, the current second phase sees investments targeted to accompany growth (Series B and C) while continuing to fuel seed projects. These joint flows keep the ecosystem afloat, preventing a loss of impetus.

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Spotlight on Series B and C startups

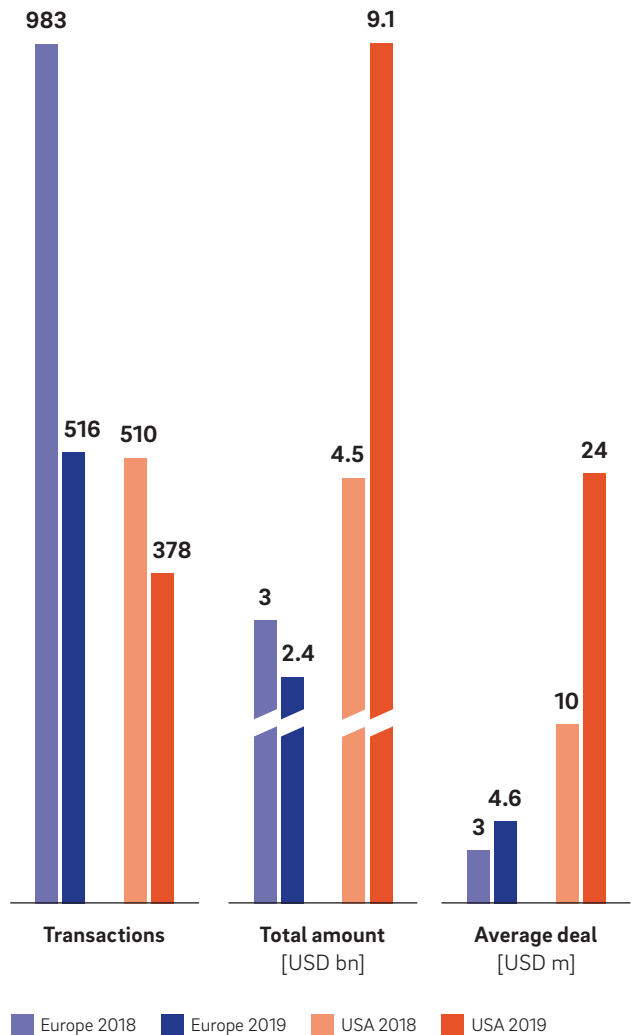
Funding maturity evolution 2015-2019 [USD million]



Source: Roland Berger

In comparison with the US market, Europe is not growing as fast as it could, underlining a need for syndication

2018-2019 Evolution



Source: Crunchbase - Full year 2018 - H1 2019

Spotlight on R&D and patent registration

Strong R&D is one of the ways through which an AI ecosystem cements its position internationally.

An analysis of the *International Journal of Computer Vision* – the most cited European AI journal – between 2015 and 2019 highlights both the strength of Europe's AI ecosystem(s) in terms of R&D, as well as the extent of collaboration among European countries.

The US and China based institutions are at the forefront of AI research, representing half of the institutions featured in the journal. At the European level, the UK, France and Germany-based institutions represent two thirds of the institutions featured in the journal, a reflection of their established and mature AI ecosystems.

The extent of collaboration within and outside of Europe provides an insight into the greater trends within the European AI ecosystem. In academia, there is strong collaboration among European academic institutions, with 65% of European papers co-authored with a European institution.

Parallel to the flow of funds from the US to Europe, both pay attention to fueling noteworthy partnerships in academia. Among the co-authored papers in the *International Journal of Computer Vision*, half are co-authored with US academic institutions. China, on the other hand, represents a small yet significant proportion of co-authored papers, at 13%.

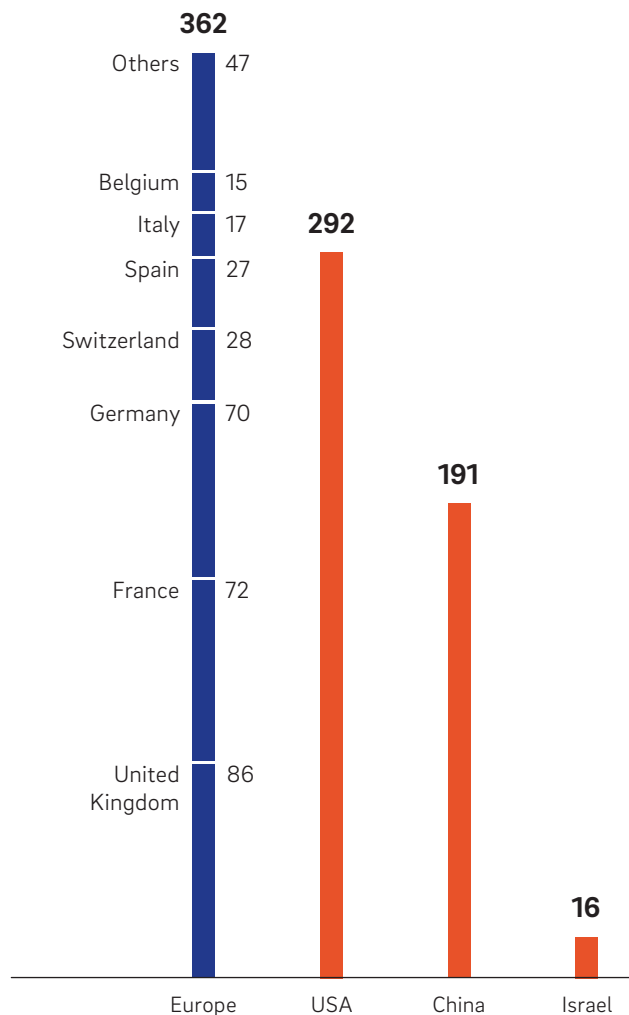
In addition to academic research, patents shed light on an AI ecosystem's contribution to research and innovation.

The UK, Germany and France leverage their vibrant AI ecosystems and are the source of 52% of AI patents granted.

When co-applying for a patent, European institutions prefer institutions based in North America and China over their European counterparts. Indeed, with 64% of co-applicants based in the US, 8% in Canada and 8% in China, these three countries appear to be the most attractive partners for Europe, making up 80% of European institutions' co-applicants.

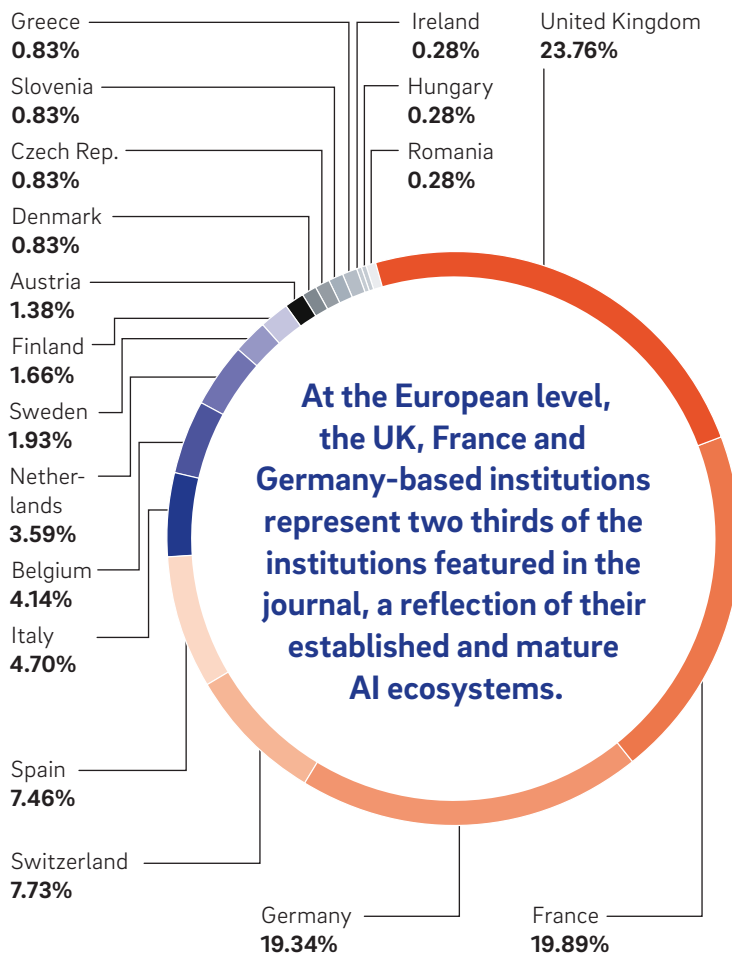
Overall, in line with the trends in investment flows, R&D is monopolized at the global level under the tripolar structure composed of the US, China and the UK, fueling the growing gap with the remaining European countries.

The international race in academia, or: most prolific countries publishing research papers in the *International Journal of Computer Vision* (2015-2019)



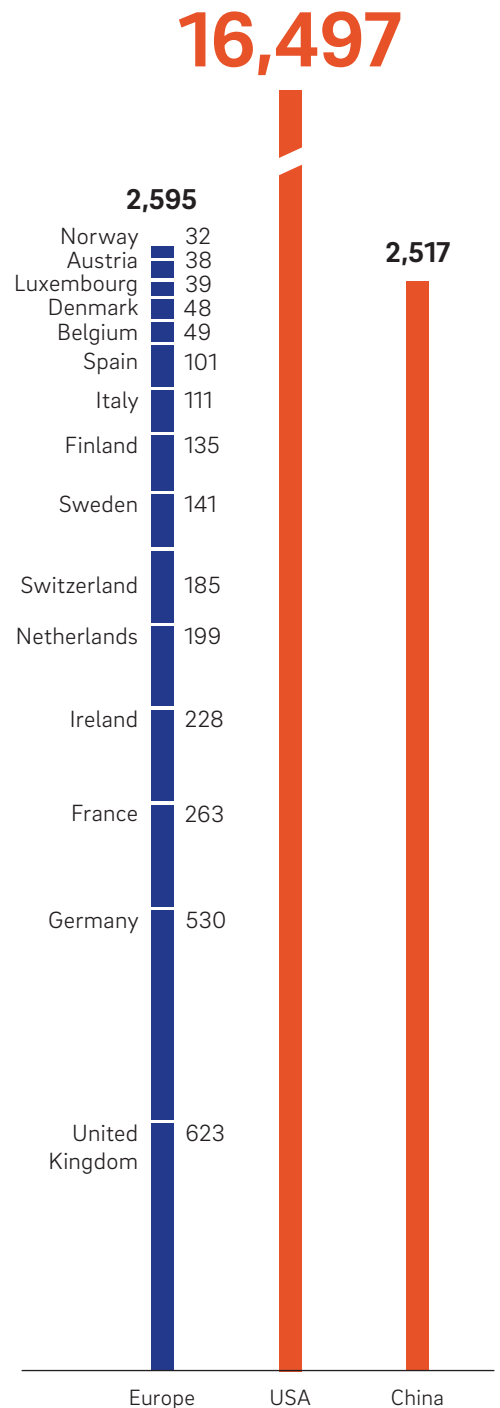
Source: *International Journal of Computer Vision*

**International Journal of Computer Vision:
focus on European contributors (2015-2019)**



Source: International Journal of Computer Vision

Patent competition: distribution of patent registrations among European countries, the US and China (2015-2019)



Source: Crunchbase

2. Exit perspectives for AI startups

Over the past five years, the number of exits has increased by 64% (CAGR) overall. The UK, Israel, France and Germany are the leaders on exits, with 66% of total exits occurring in those countries from 2014 to 2019.

Among the big four, the UK outperforms the others with 28% of all exits, representing 66 exits out of the 236 counted in Europe and Israel over the 2014 to 2019 period. Exceeding the number of exits in France (28) and Germany (24) over the period, Israel ranks second with 38 exits, which is 16% of the total, the same percentage as Italy, Norway, Finland, Denmark, Russia, Ireland, Poland, Hungary, Portugal, Ukraine, Luxembourg, Cyprus, Belarus, Bulgaria, Turkey, Austria, Lithuania and Greece put together. In 2019, Spain caught up on its European neighbors, ousting Germany from the winning quartet with 6% of overall exits in Europe, and Israel taking its place.

Israel ranks first in terms of startup exits with a 10% ratio of exits per number of funded startups (38/374) for a total of USD 446 m, followed by France with a 7% ratio (28/430, USD 25 m), Germany with a 6% ratio (24/383, USD 133 m) and the UK with a 5% ratio (66/1267, USD 315 m) over the period from 2014 to 2019.

Corporates are the main acquirers of AI startups, followed by private equity firms and investment companies

Between 2014 and 2019, acquirers have been mostly corporates (92%), of which 70% are tech companies, followed at some distance by private equity firms (5.5% of all acquirers) and investment companies (2.5%). American acquirers are by far the most numerous, with no less than 42% of all acquirers coming from the US, followed at far lower levels by the UK (13%), Germany (10.5%) and France (7%). Although Israel is one of the main recipients of AI-targeted investments, very few acquirers (2%) are based in that country. Looking at

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2019 in isolation, acquirers are mostly tech companies and corporates (96%) and most of the acquirers come from the US (32%), the UK, France and Germany, with Israel coming in equal fifth with China, Singapore and Italy, having two investors each (less than 4% each).

Taking some critical distance in considering the identity of buyers, three methodological issues pertaining to tech M&A deals focusing on AI-dedicated companies can be identified as being behind the high number of unprofitable deals.⁷ In this context, it appears that buyers tend to focus on what they can get out of purchasing an AI company rather than on what they need to do to make their new business successful. Moreover, buyers are usually in "take mode", which enables the seller to foster competition between potential buyers and consequently increase their price. Indeed, the seller intends to extract all of the cumulative future value from the transaction. Finally, it is quite clear that buyers do not necessarily understand the market they are trying to penetrate.⁸

The final limit to AI startup acquisitions, though far from the least important, touches upon the increasing value of tech M&A deals worldwide. Undoubtedly, acquiring tech companies is getting more and more expensive. Though total deal values are increasing, fewer deals are concluded today. In 2015, 4,422 tech M&A deals were recorded for a total deal value of USD 574 bn. Only three years later in 2018, 3,617 European AI tech M&A deals were concluded for a total deal value of USD 573 bn.

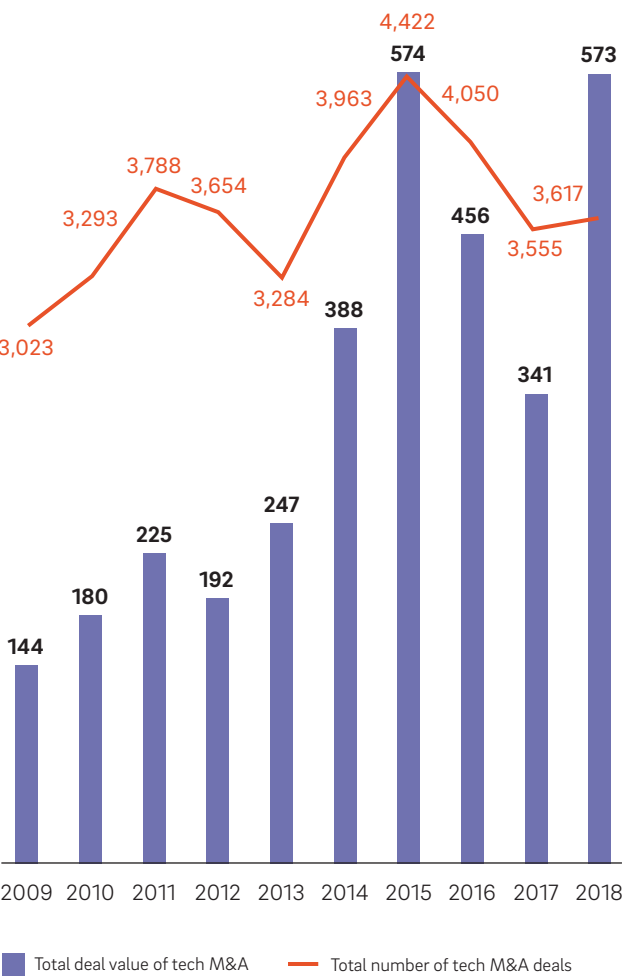
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^{7,8} Harvard Business Review (2011). The Big Idea: The New M&A Playbook. [online] Available at: <https://hbr.org/2011/03/the-big-idea-the-new-ma-playbook>

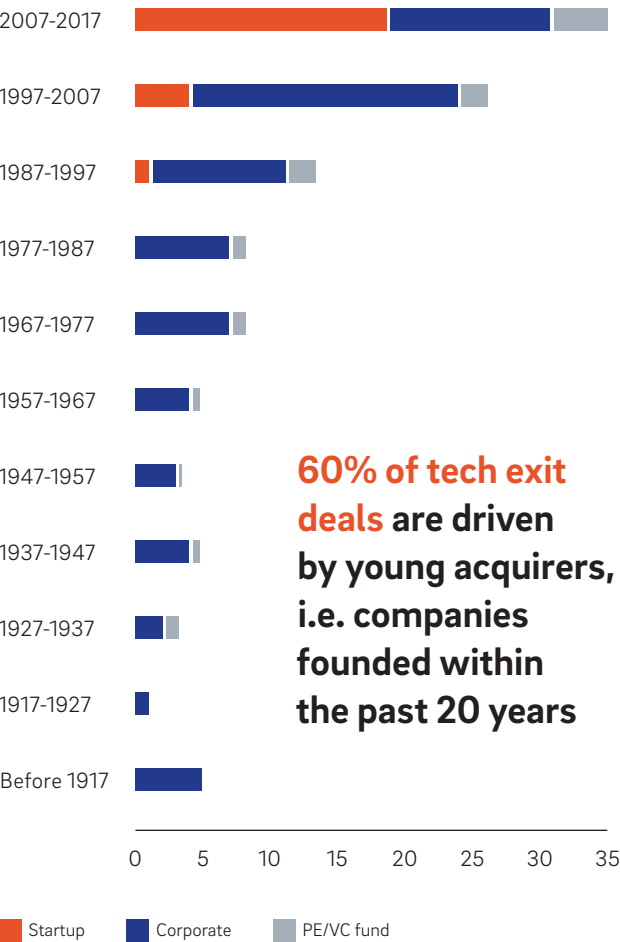
The treacherous path of M&A deals

TECH M&A WORLDWIDE

Tech M&A deals worldwide 2009-2018
[USD bn; # of tech M&A deals]



Deal volume distribution by acquirer age and type
[% of tech exit deals; 2018]



60% of tech exit deals are driven by young acquirers, i.e. companies founded within the past 20 years

3. Business recommendations

Venture capital activity in Europe is on the rails. France remains a leader in artificial intelligence in Europe. Funds keep fueling the development of late-stage startups while steadily supporting early-stage projects. However, major rounds are continually being entrusted to American and Chinese investors, each with their own strategy, with amounts substantially exceeding European funding flow capacities.

I. On future investments

Overall, there is a lack of growth funds in Europe. To curb this shortage, new investments should be made on the basis of strategic joint approaches by venture capital and private equity funds. However, venture capital funds are not taking the plunge due to a lack of resources. Similarly, private equity funds are standing on the sidelines as they seemingly have not yet realized the sense of such a strategy. As for corporates, such actions exceed their financial means.

perspective of the venture capital world by investing in future revenues. They should also work closely with management teams to ensure a shared vision. Finally, key assets (among them tech and people) should be properly secured, leveraged and integrated. In terms of integration, buyers should protect the newly acquired activity from being cannibalized by the core business, while defining agile and inclusive governance to avoid the departure of the initial founders. Finally, relevant KPIs should be listed and efficiently monitored.

To succeed in developing European AI champions, countries should organize themselves to support the growth of startups internationally and thought should be given to developing a dynamic private equity approach to tech. Companies should also be adequately supported in leveraging AI assets.

II. On tech M&A

Globally, it appears that M&A activity is driven by American acquirers and is mostly entrusted to tech companies as private equity funds are not positioned in this tech segment. Very few corporations are investing in AI-driven startups, most probably because accomplishing a successful acquisition remains a difficult task, with a 70% failure rate in tech M&As.

To mitigate this negative trend, tech M&A requires the adaptation of acquisition and integration processes. In dealing with acquisitions, acquirers should adopt the

4. Policy recommendations

With AI being a top priority for the new EU Commission and as the new European Parliament takes up its legislative work, this new term will prove decisive in whether the continent is able to embrace change and make policies work to boost artificial intelligence in the EU. This study proves that Europe has the potential to become the world leader in innovation, provided the European institutions develop a new and ambitious strategy and promote AI-friendly regulations. Europe will only be able to push its new AI standards globally if its ethical ambitions are coupled with efforts to boost a top-notch AI industry across the bloc.

In the spirit of the European Commission's Coordinated Plan on AI,⁹ we recommend a three-pillar approach based on funding, talent and regulation, to support the growth of investments and promote the independence of the European AI ecosystem.

I. The European AI ecosystem should take action to support the funding of AI startups

The EU's AI startups suffer from limited and polarized funding. The average European VC fund is EUR 60 m, half the size of a typical US fund, and 90% of the available VC funds are found in just eight EU Member States (Denmark, Finland, France, Germany, the Netherlands, Spain, Sweden and the United Kingdom).¹⁰

⁹ European Commission (2018). Coordinated Plan on Artificial Intelligence. [online] Available at: <https://ec.europa.eu/digital-single-market/en/news/coordinated-plan-artificial-intelligence>

¹⁰ European Startup Network (2017). A Manifesto for Change and Empowerment in the Digital Age. [online] Available at: https://europeanstartupnetwork.eu/wp-content/uploads/2017/10/Scale_Up_Europe_Brochure.pdf

1. The EU's financial institutions should take appropriate measures **to develop pan-European funds** to foster cross-border investments, especially in a post-Brexit context.

2. The European Investment Fund (EIF) should play a **major role in supporting the emergence of late-stage funds**. For example, within its fund-of-fund activities, the EIF has EUR 2.6 bn in European VC funds. But its growth is limited, and new investment vehicles need to be created in order to unlock the necessary capital to empower European scaleups to challenge Chinese and North American decacorns.

3. The tax framework for venture capital across the EU **should be standardized** to mobilize capital inside and outside of the Union to avoid double taxation. Today, for example, a Danish pension fund does not recognize the French FPCI (Professional Fund of Investment Capital) and hence will not invest in it. A pan-European VC ecosystem will thrive only if savings in Member States can be mobilized equally in every other Member State.

4. Corporate venture capital has become a **major investor in tech and AI**. 681 unique corporate investors accounted for 38.3% of total investments in tech (EUR 8.8 bn) in 2018. In order to support the flow of corporate funds across Europe, tax depreciation schemes for corporates are encouraged within EU Member States.

5. In the case of business angels, whose investments continue to be small and concentrated in only a few Member States, **the Member States themselves may grant tax breaks**. For instance, Belgium granted a tax break of 45% for investing in new shares issued by a startup and 30% for investing in new shares in an SME or startup fund.

6. The EU institutions should facilitate access to cross-border crowdfunding, which has come to play an important role in equity investment. In 2015, European crowdfunding platforms raised EUR 422 m, representing more than 10% of all venture capital raised that year (EUR 3.8 bn). Despite the potential, the legal uncertainties surrounding crowdfunding investments have limited its growth beyond national borders. To counter this, the EU should foster the transparency of cross-border crowdfunding by setting up a simple and transparent cross-border framework favoring mutual recognition of nationally regulated crowdfunding platforms.¹¹

7. Finally, the control of foreign investments in companies deemed sensitive for their use of critical technologies such as AI, robotics, cybersecurity and quantum technologies is strengthening both at EU and national levels. Given the high number of foreign investments in European AI startups, additional controls over the investments might place a strain on European startups. In order to mitigate a downward pressure on the investment in European AI startups in the coming years, Europe should support the growth of European funds that can be directed towards acquisition of and investment in European startups.

II. Capital follows talent

Global AI talent is scarce, with just 10,000 people having "the education, experience and talent needed" to develop AI technologies.¹²

In this context, Europe needs to follow a holistic strategy by maintaining and supporting the level of academic excellence in its academic institutions, retaining European talent in the face of "brain drain", and attracting talent from outside Europe.

In educating future academics in the field of AI, European higher education institutions should integrate a cross-disciplinary curriculum, with a particular focus on applied ethics and humanities. Further, available funding and attractive Ph.D. positions need to be put in place, to support both vibrant and competitive academic research and the level of attractiveness of academic institutions for researchers.

Moreover, to attract and retain talent, Europe must position itself as an attractive destination for entrepreneurs.

First, the complex recruitment processes and limited work permits, which vary between countries, should be simplified with **the creation of a European Startup Visa**. In light of the initiatives taken by several EU countries to attract entrepreneurs, such as Denmark, France, Ireland, Italy and the Netherlands, the visa, delivered on a multiannual basis, would simplify the administrative procedure of recruitment.

Second, a **unified share option** scheme should be established for startups and scaleups to support their global reach and facilitate competition with larger corporate players. This scheme would give startups and scaleups the opportunity to issue standardized share options across the 28 countries of the European Union.

¹¹ European Startup Network (2017). A Manifesto for Change and Empowerment in the Digital Age. [online] Available at: https://europeanstartupnetwork.eu/wp-content/uploads/2017/10/Scale_Up_Europe_Brochure.pdf

¹² New York Times (2017). Building AI That Can Build AI. [online] Available at: <https://www.nytimes.com/2017/11/05/technology/machine-learning-artificial-intelligence-ai.html>

III. The EU regulatory framework needs to make room for AI

The EU must seek greater harmonization and strategic alignment

The gap in the maturity of Europe's AI ecosystems may be further exacerbated by the diverse array of national AI strategies. Since Member States were encouraged to develop and implement national AI strategies (e.g. by the Villani report in France) before a European approach was adopted, **the continent must pay attention to the harmonization of national strategies and European efforts.** European countries must work in synergy to mutually compensate for different strengths and weaknesses in patents, infrastructure, investment capacity and human resources.

Beyond GDPR:

The EU must ensure the free flow of data

A thriving data-driven economy is essential for a functioning Digital Single Market. Yet barriers between European countries can make it difficult for entrepreneurs to fully exploit the potential of AI technology.

Even though data is the key ingredient for AI applications, Europe has imposed the strictest rules in the world on the use of personal data, reflecting widespread concerns over privacy. The General Data Protection Regulation (GDPR) has had a crucial positive impact worldwide in terms of creating a more regulated data market. More importantly, the regulation on the free flow of non-personal data, applicable as of May 28, 2019, is a major follow-up to the GDPR and is a pillar in facilitating cross-border business in the EU and enabling the scaleup of innovative data services.

Now efforts must be intensified. Although the EU introduced the GDPR to harmonize data protection rules across countries, there remains a patchwork of different interpretations in the EU on the extent to which companies can process private and public data. Plus, the regulation on the free flow of non-personal data initially did not adequately address how it would interact with the GDPR. Also, the regulation on non-personal data did not account for the reality that many large datasets inevitably contain a combination of both non-personal and personal data. The recent publication of practical guidance for businesses on how to process mixed datasets contributes to addressing how organizations should approach such challenges.

The EU must remove barriers to data flows worldwide

In Europe, data sharing is still the exception rather than the rule, putting European entrepreneurs at a disadvantage to others. Additionally, a no-deal Brexit may further hinder access to data, affecting AI innovation and dynamism in Europe.

Regulations limiting the ability of startups or any other AI company to transfer, download or upload data across the world sends the wrong signal. In order to ensure data access and enable European startups to exploit the flow of data, especially between Europe and the UK, as well as with the rest of the world, European institutions must be guaranteed in any (future) international trade agreements and their counterparts, and addendums to current agreements should be made. The agreements must ensure a level playing field for all parties involved by subjecting them to the same limitations and liabilities. The EU-Japan agreement is a model in this regard, in that it allows personal data to flow freely and safely between the two partners. Both parties agreed to recognize each other's data protection systems as "equivalent", thus creating the world's largest area of safe data flows.

Conclusion

"The road to AI – Investment dynamics in the European ecosystem" reiterates the trend highlighted in our 2018 study. The European AI ecosystem, under the leadership of France, the UK and Germany, has experienced growth in the last five years, with the annual growth rate of funds raised by startups reaching 55% and France leading in investment attractiveness.

However, the European AI ecosystem is still fragmented and suffering from a lack of integration, which is further endangered by the scheduled Brexit on January 31, 2020.

That is why 2019 represents a milestone for the future of the unified European AI ecosystem. The newly appointed EU Commission, with its ambitious political roadmap, should seize the opportunity to design a favorable regulatory framework for the next decade, in sync with the European AI ecosystem.

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WE WELCOME YOUR QUESTIONS, COMMENTS AND SUGGESTIONS

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About us

Roland Berger, founded in 1967, is the only leading global consultancy of German heritage and European origin. With 2,400 employees working from 35 countries, we have successful operations in all major international markets. Our 52 offices are located in the key global business hubs. The consultancy is an independent partnership owned exclusively by 230 Partners.

Roland Berger Tech Ventures is operated by a team of entrepreneurs with startup experience and mentality, offering unique insight and advice specific to early and growth-stage needs and a deep understanding of tech and digital business models. Combining our entrepreneurial experience and know-how with the deep sectoral expertise of Roland Berger allows us to offer unique support to innovators, whether it is to develop new businesses or to grow existing ones. We help founders find the path to success from fundraising to scaling and exit. We help corporates find new growth levers toward adjacent and disruptive business models.

Founded in 2012, France Digitale is the largest startup association in Europe. France Digitale brings together the champions of digital entrepreneurship: it encompasses 1400 digital startups with strong growth plans and more than 100 investors (venture capitalists and business angels). The association (non-governmental organization) has a specific DNA, it connects entrepreneurs and investors to make the ecosystem more conducive to the emergence of new champions. Recently, France Digitale led the launch of the pan-European manifesto "United Tech of Europe" bringing together 30 organizations from 27 Member States around 15 proposals in advance of the European elections. France Digitale's annual event, France Digitale Day, took place on September 18, 2019 in Paris with a launch party hosted by the French President Emmanuel Macron at the Elysée Palace. On that occasion, 7 French Ministers hosted breakfasts, meeting with France Digitale members to discuss key issues (talents, innovation, women in tech, tech for good, cybersecurity, IA, etc.). 100 VCs, 20 unicorn founders, 50 corporates, 75 speakers and 3000 participants attended FDDay – the European startup ecosystem event.

Study
Joining the dots – A map of Europe's AI ecosystem: Roland Berger partnered with France Digitale
(2018)



The result is a comprehensive map of the European AI ecosystem. It shows a rich and diverse landscape, highlighting three distinct country clusters. In summary, the ecosystem consists of 2,261 startups, 383 labs and 3,801 communities spread over 4 dominant, 12 rising star and 14 follower countries.

Study
AI startups as innovation drivers: Europe must take action to establish a competitive ecosystem
(2018)



Roland Berger and Asgard partnered up to provide the first comprehensive overview of the global AI ecosystem based on data from startups in all regions of the world.

Think:Act Magazine
AI think, therefore AI am
(2018)



Everybody is talking about how artificial intelligence will change the world. Find out what AI means in 2018 and beyond for your business in our Think:Act publication.

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