



# TECH BOOK

FRANCE'S ECOSYSTEM AND STARTUPS  
IN INTERNATIONAL RANKINGS

2017 Edition

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The French tech ecosystem is internationally renowned. Following in the footsteps of Facebook, Microsoft has just announced a partnership with Station F in the field of artificial intelligence. The incubator, opening this summer, will host around 1,000 startups in the heart of Paris and will offer a number of development programs, supported by digital giants such as vente-privee.com, Zendesk, NUMA, Amazon and Airbnb.

Having become household names in France, new technologies are disrupting our businesses and bringing about fundamental change in the way we produce, consume and communicate. They offer exciting opportunities for job creation and economic growth, but also present a challenge for governments aiming to create flexible, innovative ecosystems that not only champion startups and entrepreneurship, but can also support traditional businesses as they transition to the digital era.

The French government has a firm grasp of these issues, and is committed to supporting innovative initiatives, attracting foreign investors and making France a bona fide “Digital Republic”. France has implemented an effective regulatory and fiscal framework for the digital economy to encourage innovation and investment. In just a few short years, it has become an ideal place for new startups for a number of reasons: company formation procedures are straightforward, it has an innovative and creative ecosystem, and has a wealth of talent at its disposal. In addition, it boasts high-quality infrastructure, ambition to succeed, and an international outlook.

France’s regions are vital in this regard. Supported by effective financing systems and renowned research institutions, Paris is already a mature ecosystem for startups, and has produced a number of success stories that have captured the attention of investors. One such company is Devialet, which specializes in acoustic engineering and which raised €100 million in 2016, having won more than 60 awards worldwide. But other French cities such as Lyon, Toulouse, Bordeaux and Lille, which have the advantage of being designated French Tech centers, are also emerging as attractive ecosystems and are buoyed by the positive view of entrepreneurship held by French people. After all, France is the leading country in Europe for business creation.

Consequently, a new entrepreneurship dynamic is coming to the fore in which co-working spaces, accelerators and incubators are thriving. France is home to an already rich fabric of innovative startups in wide-ranging fields such as connected devices, biochemistry, fintech and foodtech. There are already more than 9,400 startups in France. French firms stand out for their ability to integrate technological innovations rapidly and to enter innovative markets, enabling them to become leaders in cutting-edge sectors such as drone technology, immunization and robotics. One example is Blue Frog Robotics, which plans to launch its companion robot, Buddy, at the end of the year.

One of France’s key assets is its wealth of scientific talent. Paris is a veritable hive of talent in areas such as IT development, artificial intelligence and virtual reality, and is well placed to attract innovative startups as a result. For example, H3dynamics, a pioneering Singapore-based startup in the telerobotics (drones) sector, recently announced that it has chosen Paris as its EMEA headquarters. It will also establish new R&D operations in France. This decision clearly demonstrates France’s attractiveness with regard to technology and innovation.

In this context, a number of international rankings comparing the attractiveness of different countries and cities for startups have emerged in recent times. This ‘Tech Book’ seeks to examine France’s place in a competitive environment and to provide an overview of the French entrepreneurial ecosystem, encompassing both its strengths and weaknesses, in a bid to distinguish between apprehension, perception, and reality. It is also a way for Business France to identify the action that needs to be taken to make French SMEs more competitive as it supports them in their international development and works to position France as an attractive destination for innovative talent.



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# EUROPEAN DIGITAL CITY INDEX 2016

NESTA • November 2016

Paris is a mature ecosystem for fledgling businesses, supported by an effective financing system, renowned research institutions, a growing number of shared workspaces and business accelerators, and a government focused on digital challenges.

In 2016, Lyon, Toulouse, Bordeaux and Lille were also identified as cities with a strong entrepreneurial presence and advantages in the ICT, digital and internet sectors, and were included in the rankings.

The European Digital City Index (EDCi), published for the second time in 2016 by Nesta, the British foundation for innovation and the European Digital Forum, sets out to describe the quality of the support environment for digital entrepreneurship in 60 European cities. The goal is to encourage such entrepreneurship by providing a comprehensive overview of the factors that attract and retain startups.

The EDCi uses 40 technological, political, economic and sociocultural indicators to assess each local ecosystem's strengths and weaknesses in developing such businesses.

## KEY FINDINGS

→ The top three cities for startups in 2016 were London, Stockholm and Amsterdam. Paris was ranked fifth, and four other French cities appeared in the rankings: Lyon (21st), Toulouse (31st), Bordeaux (43rd) and Lille (48th).

→ As well as London, eight British cities made it into the rankings; five of them in the top 20: Cambridge (12th), Bristol (13th), Oxford (15th), Manchester (16th) and Edinburgh (19th). Berlin was ranked sixth, and eight other German cities made it into the rankings, two of them in the top 20: Munich (11th) and Hamburg (20th).

## PARIS: ADVANTAGES

- **Paris was ranked first for knowledge spillovers**, ahead of Munich and Copenhagen. It took second place for the quality of its research institutions (after London) and eighth for domestic research and development expenditure per capita.
- **Paris was ranked second for access to capital**, after London and ahead of Berlin. It also took second place for indicators relating to crowdfunding and late-stage funding.
- **Paris was highly ranked for infrastructure**, including non-digital infrastructure (6th; 4th for airport connectivity and 8th for train connectivity) and digital infrastructure (7th; 6th for internet download/upload speed).
- **Paris was ranked 16th for entrepreneurial culture** (5th for multicultural diversity, 7th for public perception of entrepreneurship and 9th for willingness to take risks).
- **Paris was also ranked 21st for mentoring and managerial assistance** and 27th on the market and skills indicators (9th for the proportion of the population with secondary education qualifications and 10th for access to ICT employees).

## PARIS: POINTS TO WATCH

- In the business environment category, Paris was negatively affected by the high cost of office space (ranked 60th) and its poor showing on the World Bank's indicator on doing business.

### EXAMPLES – PARIS

#### IPOs

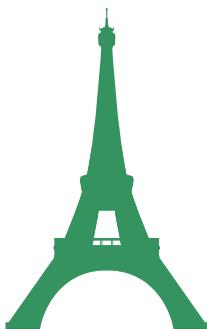
Criteo, which provides personalized targeted online advertising, completed its IPO in 2013.

#### Unicorns

Two of the biggest companies of recent years are BlaBlaCar, which offers centralized car-sharing services and has raised €300 million, and vente-privée.com.

#### Scaleups

Shoe retail site Sarenza raised €93.8 million and FastBooking, which provides e-marketing and internet solutions to the hotel industry, raised €46.6 million.



PARIS: EUROPE'S **#2** TALENT POOL  
FOR IT DEVELOPERS,  
WITH **134,322** PROFESSIONAL DEVELOPERS.

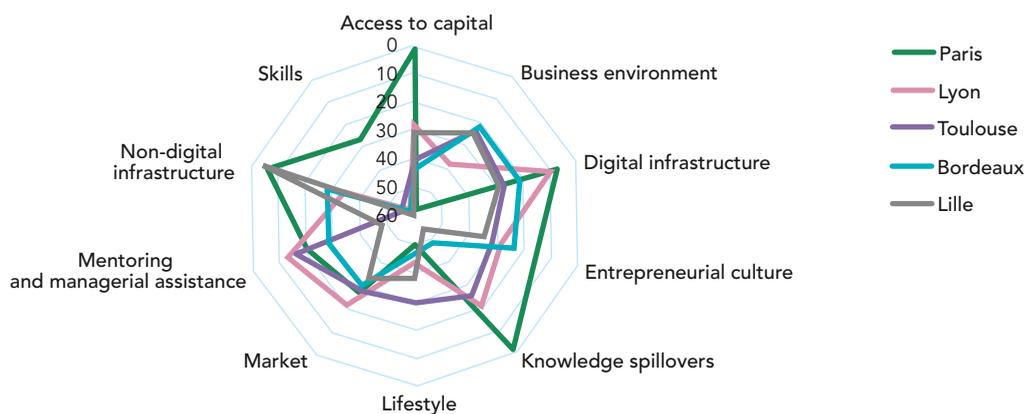
Source: Stack Overflow, 2016

- The city also fared poorly (56th) on the lifestyle indicator, which considered not only spending power but also such aspects as security, pollution, travel time and climate quality.
- Paris was adversely affected by the small size of its digital market (22nd), low volumes of online transactions at local level (27th), low demand for

digital services (33rd) and the size of the potential local mobile market (40th).

- Lastly, labor costs (average salaries in the ICT field) were high in Paris (ranked 43rd), as in other western European capitals (40th for Berlin and 46th for London).

FRENCH CITIES IN THE EDCI STARTUP CITY RANKING 2016



RANKINGS FOR PARIS, LONDON AND BERLIN

	Paris	London	Berlin
<b>EDCi Startup</b>	<b>5</b>	<b>1</b>	<b>6</b>
Access to capital	2	1	3
Business environment	58	45	15
Digital infrastructure	7	42	57
Entrepreneurial culture	16	1	13
Knowledge spillovers	1	5	6
Lifestyle	50	54	15
Market	27	6	22
Mentoring and managerial assistance	21	5	3
Non-digital infrastructure	6	4	22
Skills	27	2	44

## LYON, TOULOUSE, BORDEAUX AND LILLE: ADVANTAGES

→ **Lyon** was ranked 10th for digital infrastructure, 13th for mentoring, 20th for knowledge spillovers, 21st for market (and, in particular, 3rd for growth in local online sales) and 28th for access to capital and entrepreneurial culture (6th for willingness to take on risk).

→ **Toulouse** scored well on mentoring and managerial assistance (16th, with a particularly strong showing on access to startup accelerators (11th)), business environment (23rd), knowledge sharing (25th) and digital infrastructure (7th, with

a particularly strong performance on mobile internet speed (11th)).

→ **Bordeaux** stood out for its business environment (21st; 13th on openness of data and 14th on cost of office space), digital infrastructure (21st; 9th on mobile internet speed) and entrepreneurial culture (23rd; 1st on absence of negative perception of entrepreneurship).

→ **Lille** was ranked 5th for non-digital infrastructure (and, in particular, 1st for train connectivity) and 10th for history of highly successful digital companies and absence of negative perception of entrepreneurship (in the entrepreneurial culture category).

### RANKINGS FOR FRENCH CITIES

	Paris	Lyon	Toulouse	Bordeaux	Lille
<b>EDCi Startup</b>	<b>5</b>	<b>21</b>	<b>31</b>	<b>43</b>	<b>48</b>
Access to capital	2	28	41	44	31
Business environment	58	38	23	21	24
Digital infrastructure	7	10	27	21	28
Entrepreneurial culture	16	28	31	23	34
Knowledge spillovers	1	20	25	48	54
Lifestyle	50	44	29	48	38
Market	27	21	28	29	33
Mentoring and managerial assistance	21	13	16	29	48
Non-digital infrastructure	6	35	56	28	5
Skills	27	58	54	59	60



## FRANCE: **2<sup>ND</sup>** FOR DEEP TECH FUNDING BETWEEN 2011 & 2016

**US\$582M, VS. US\$1,342M IN THE UK & US\$480M IN GERMANY**

Source: Dealroom.com, 2016

**EXAMPLES – LYON****Scaleups<sup>1</sup>**

Collaboration and video platform Glowbl raised €2.7 million, student platform digiSchool raised €18.3 million and smart mobile video advertising service vidCoin raised €1.29 million.

**Startups**

Trackin, an online service that helps restaurant owners manage home deliveries; De Rigueur, an online fashion retailer; and HIKOB, which designs and develops autonomous, multi-point wireless data acquisition systems.

**EXAMPLES – TOULOUSE****Scaleups**

Sigfox, which provides mobile connections for the Internet of Things, raised €112 million; Delair Tech, the global leader in professional drones, raised €13.5 million; Myfox raised €7 million, BricoPrivé €7 million and Morning €5 million.

**Startups**

Adveez, which develops hands-free access control, wander management and vehicle fleet systems; Audiogaming, which

develops next-generation audio tools for cinema and video; Devatics, which markets software for optimizing e-commerce sites; personalized label maker Ludilabel; and MyFeelBack, which offers questionnaires tailored to website visitors' profiles.

**EXAMPLES – BORDEAUX****Takeovers**

Online health connectivity system eDevice was acquired by iHealth for €94 million in August 2016, and Cheetah Mobile bought news aggregator News Republic for €51 million in August 2016.

**IPOs**

Immersion, which creates 3D experiences for industry and research, was listed on the Alternext market in June 2016; Implanet, which makes orthopedic knee and spinal implants, completed its IPO in November 2013.

**Startups**

Primobox, which provides electronic signature, paperless processing and electronic archiving solutions, raised €4.5 million; Interaction Healthcare, a digital

strategy platform in the digital healthcare field, raised €5 million.

**EXAMPLES – LILLE****Scaleups**

Giroptic raised €5.5 million; OVH is the world's third-largest hosting company.

**Startups**

Online retail sales software provider Simplified, and B2B 3D printer Shapelize!

<sup>1</sup> High-growth firms with more than 10 employees.

## LYON, TOULOUSE, BORDEAUX AND LILLE: POINTS TO WATCH

- In the skills category, Lyon and Toulouse scored poorly on access to IT specialists and support functions and availability of training in starting a business.
- Startups based in Toulouse and Bordeaux had less access to capital.
- Lille's rankings were particularly low for skills (60th), knowledge spillovers (54th) and mentoring (48th).

The French cities included in the rankings had the benefit of high-quality nationwide fixed and mobile networks. In the mentoring category, they were helped by the high number of business

angels relative to the French population. In terms of access to capital, French startups enjoyed relatively good access to initial and late-stage capital, though access to bank guarantees and crowdfunding was more challenging. Lastly, in the entrepreneurial culture category, French cities were generally ranked relatively high on willingness to take on risk, and entrepreneurship was seen in a fairly positive light by the population.

***"Paris has always been a city of new ideas where people come together to break new ground, to do new things. [...] We're excited to support a new generation of French startups with enormous potential."***

Sheryl Sandberg,  
Chief Operating Officer,  
Facebook, Inc.



**PARIS: 2<sup>ND</sup> IN EUROPE  
FOR ARTIFICIAL INTELLIGENCE TALENT**

Source: LinkedIn, 2016

**KEY FINDINGS****European Digital City Index scaleup rankings**

The index was also estimated for scaleups, which are defined as fast-growing companies with more than 10 employees.

The values assigned to the various indicators, along with the weightings given to indicators and categories, varied with the size and needs of each business. For example, access to early-stage funding was considered for startups, but access

to late-stage funding was used for scaleups. The weightings used were decided upon following a literature review and interviews with experts, which suggested that some factors were more important than others, depending on a business's stage of development. As such, four of the index's 10 categories were weighted differently for startups and scaleups:

Category	Weighting - startups	Weighting - scaleups
Entrepreneurial culture	High	Low
Market	Low	Medium
Mentoring and managerial assistance	High	Medium
Skills	High	Medium

The top three cities in the 2016 scaleup rankings were London, Stockholm and Paris. Generally

speaking, French cities were considered more attractive to scaleups than startups:

	Startup ranking	Scaleup ranking
Paris	5	3
Lyon	21	19
Toulouse	31	27
Bordeaux	43	42
Lille	48	46

Paris's higher ranking is explained by better scores for entrepreneurial culture (lower risk aversion and higher confidence) and skills. Lyon gained 10 places on entrepreneurial culture due

to weighting changes, and Toulouse, Bordeaux and Lille were ranked higher on access to capital because late-stage funding was taken into account.

## METHODOLOGY

The EDCi is a composite index calculated on the basis of 40 indicators grouped into 10 categories:

- Access to capital
- Business environment
- Digital infrastructure
- Entrepreneurial culture
- Knowledge spillovers
- Lifestyle
- Market
- Mentoring and managerial assistance
- Non-digital infrastructure
- Skills

The data is processed with an emphasis on methodological rigor.

The method used to calculate the index changed significantly in 2016, making it impossible to make comparisons with previous years. The index took new variables into account (e.g. training in starting a business and train connectivity), some data sources were changed, and the statistical methodology was reviewed. The index compared 60 European cities, compared with 35 in 2015.

Before the data was processed, a literature review was undertaken and interviews were conducted with experts and digital entrepreneurs. The data was taken from international databases (Eurostat, World Bank, etc.), sources like Teleport and Statista, and non-public venture capital databases. Some indicators were unavailable and were replaced with proxies, while nationwide data was used where regional data was not available.

The variables used were sourced from global databases dating from 2011 to 2016. Of the 40 indicators, three were derived from opinion surveys.

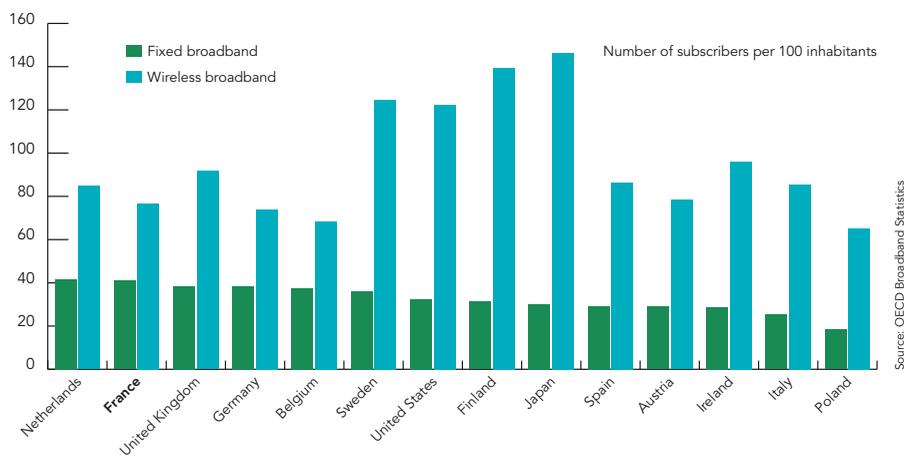
The EDCi is made up of the normalized average score for each category. Indicators and categories were weighted by importance, as assessed by a panel of experts (low/medium/high). These weightings differed for startups and scaleups. The platform allows users to adjust category weightings on a scale from one to five.



***“Paris is surging with innovation, research and startups... Paris offers history, culture and five-sense experiences. And its multitude of top-tier universities produce programming and engineering talent at a fraction of Silicon Valley costs.”***

Gary Shapiro, President and CEO  
of the Consumer Technology Association

**BROADBAND PENETRATION RATES (JUNE 2016)**





# GLOBAL STARTUP ECOSYSTEM REPORT 2017

STARTUP GENOME • March 2017

The number of tech startups in the French capital is estimated to be between 2,000 and 2,600. Paris-based startups are supported by an ecosystem that provides the conditions they need to develop: experienced and qualified staff, high-quality sources of funding, and access to domestic and international markets. However, in spite of its high-quality education system, the key challenge for Paris is attracting talent.

The third edition of the Global Startup Ecosystem Report, published by Startup Genome in conjunction with the GEN (Global Entrepreneurship Network), aims to identify those ecosystems in which a burgeoning startup has the best chance of global success.

This year, 55 ecosystems in 28 countries were studied in detail on the basis of nine determining factors: performance, funding, market reach, ability to attract talent, experience, resource attraction, corporate involvement, founders' ambition and go-global strategy. Only the first five of these factors were taken into account to calculate the index.

## KEY FINDINGS

- The top two ecosystems remained Silicon Valley and New York. The United States dominated the standings, with five out of the top 10 ecosystems.
- Paris held steady at 11th place in the startup ecosystem rankings. It was the third-ranked city in Europe after London (3rd, up 3 places) and Berlin (7th, up 2 places).
- Two Chinese cities joined the rankings this year: Beijing (4th) and Shanghai (8th).

## FRANCE'S ADVANTAGES

- Paris was buoyed by labor cost and quality, for which it was ranked top in the world. Eighty-one percent of startup founders had a master's degree or doctorate – the third highest percentage in the world.
- Paris-based startups were able to draw on the experience of their elders and had a well-established ecosystem at their disposal: Paris was ranked eighth on the index's experience factor. In particular, teams were able to apply methods already proven to be successful; Paris was consequently ranked seventh on this indicator, ahead of Berlin (10th) and London (16th). This experience was also reflected in the quality of Paris-based venture capital funds, ranked fifth.
- Offering direct access to a conurbation of 12 million inhabitants, Paris was ranked ninth for market reach. Furthermore, 36% of Paris-based startups' customers were foreign, compared with a global average of 23%. Paris-based companies were in contact with 10.8 members of major international ecosystems, compared with an average of 6.1.

## POINTS TO WATCH

- Paris was ranked 16th for talent attraction: in spite of France's high-quality education system, the best engineers tend to prefer large groups and stable employers over fledgling businesses. Recruitment timescales and the visa approval rate (37%, compared with a global average of 41%) also contributed to Paris's score.
- Remuneration rates were less attractive in Paris than in other ecosystems: a software engineer working in a Paris-based startup earned an average of US\$46,000 a year, comparable to the European average, but well below the US\$112,000 on offer in Silicon Valley.
- Paris was hampered by the low level of IPO activity among startups in recent years and by limited appreciation in the value of startups based there (US\$12 billion, compared with US\$31 billion for Berlin and US\$44 billion for London).

## 2016: PARIS RANKED 2<sup>ND</sup> IN EUROPE

FOR TECH-FOCUSED MEETUP COMMUNITIES: 251 IN LONDON, 110 IN PARIS, 91 IN BERLIN

Source: Meetup (2016)



**GLOBAL STARTUP ECOSYSTEM REPORT  
RANKINGS 2017**

	Rank	
Silicon Valley	1	–
New York	2	–
London	3	↗3
Beijing	4	New
Boston	5	↘1
Tel Aviv	6	↘1
Berlin	7	↗2
Shanghai	8	New
Los Angeles	9	↘6
Seattle	10	↘2
Paris	11	–
Singapore	12	↘2
Austin	13	–
Stockholm	14	New
Vancouver	15	↗3
Toronto	16	↗1
Sydney	17	↘1
Chicago	18	↘11
Amsterdam	19	–
Bangalore	20	↘5

*“Paris has become one of the world’s most dynamic startup scenes, and is clearly seen by most non-European firms as a gateway to the European Union.”*

Tristan Lebeau,  
Startup Program Manager, NUMA



**PARIS HAS 2,000-2,600  
TECH STARTUPS;  
ECOSYSTEM VALUED AT US\$12BN.**

Source: Startup Genome (2017)



## METHODOLOGY

The Global Startup Ecosystem Report 2017 was based on a weighted average of five factors:

- **Performance** (30%): value of the ecosystem, based on the number of startups and their total value (estimates and IPO valuations).
- **Funding** (25%): ease of access to venture capital and quality of available funds (fund experience).
- **Market reach** (20%): local and cultural market size (countries speaking the same language), access to the global market and existing links with global entrepreneurs.
- **Talent** (15%): labor availability, quality and cost.
- **Startup experience** (10%): founder and employee levels of prior experience in successful

startups and degree of adoption of known success factors.

The report drew on interviews with 275 entrepreneurs, investors and experts from 25 countries conducted in 2015 and 2016, and a survey of 10,000 startups operating in 56 ecosystems, supplemented by cross-matched data gathered by partners (CrunchBase, Orb Intelligence, Dealroom, Deloitte, etc.). Correlation analysis was used to determine the weightings, along with various linear regression models. The weightings were adjusted for each edition of the report to improve their relevance. For example, for the 2017 edition, the weighting for factors linked to ecosystem size was reduced to give less of an advantage to large cities.



PARIS'S HALLE FREYSSINET TO HOST

**1,000** STARTUPS  
IN 2017.

# 2017 GLOBAL ENTREPRENEURSHIP INDEX

GLOBAL ENTREPRENEURSHIP AND DEVELOPMENT INSTITUTE (GEDI) • November 2016

According to the 2017 Global Entrepreneurship Index, published by the GEDI, France has a robust entrepreneurial environment. France's entrepreneurial culture admittedly remains less bold than that of Germany or the United Kingdom, even though French startups and entrepreneurs have recognized qualities in creating and absorbing new technologies that place them among the best-in-class globally.

Published annually, this composite index aims to measure and rank the ability of 137 countries to offer an environment conducive to entrepreneurship, as well as the emergence and success of startups. Its authors define an economy's entrepreneurial ecosystem as a combination of three components: the country's entrepreneurial culture (entrepreneurial attitudes sub-index), the characteristics of entrepreneurs and their businesses (entrepreneurial abilities sub-index) and startups' ambition to succeed, as measured by their efforts to establish their products and penetrate foreign markets (entrepreneurial aspirations sub-index).

## KEY FINDINGS

- The United States held onto the top spot this year, followed by Switzerland and Canada. Switzerland climbed six places and Canada fell one place.
- The European standings were dominated by Switzerland, Sweden (4th) and Denmark (5th). The United Kingdom was ranked 9th and Germany 12th.
- France was placed 13th out of 137 in the 2017 rankings, and took 10th place in Europe. France fell three places from 2016.

## FRANCE'S ADVANTAGES

→ **French companies stood out for their ability to rapidly integrate tech innovations and position themselves in new markets.**

France was ranked 11th on the entrepreneurial abilities sub-index, after the United Kingdom (4th) but ahead of Germany (13th). The country was ranked eighth on the technology absorption pillar, ahead of Germany (15th) but below the United Kingdom (6th), and 14th on competition, which measures the diversity of a nation's entrepreneurial fabric. France was also ranked highly on variables concerning business leaders' educational level and ability to exploit business opportunities.

→ **French companies benefited from the quality of France's research institutions** and the high level of domestic research and development expenditure per capita, as well as ease of access to scientists and engineers. As such, France was ranked eighth on the process innovation pillar, ahead of both Germany (12th) and the United Kingdom (22nd). It was also ranked 21st on the internationalization pillar, thanks to its complex economy. Overall,

France was ranked 11th on the entrepreneurial aspirations sub-index, after Germany (9th) but ahead of the United Kingdom (16th).

→ **Lastly, France offered advantages that encouraged networking of skills and businesses.**

Thanks to its high level of urbanization and the quality of its infrastructure, it secured 15th place on the networking pillar, ahead of both the United Kingdom (37th) and Germany (61st).

## POINTS TO WATCH

→ **French people's attitude toward entrepreneurship was an obstacle to business growth.**

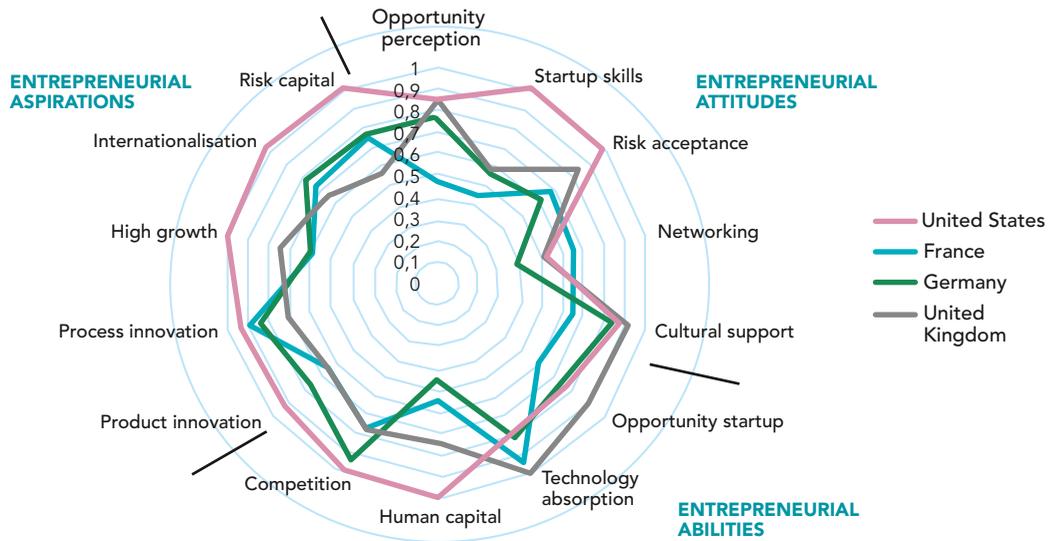
France was toward the lower end of the standings on individual variables linked to opportunity perception, self-assessment of skills, fear of failure, social recognition of business leader status and familiarity with entrepreneurs.

→ France was also one of the lowest-ranked countries for training and development of human resources and on the regulatory environment in the labor market, within the human capital pillar of the entrepreneurial abilities sub-index.



**FRANCE: 1<sup>ST</sup>**  
**IN THE FINANCIAL TIMES MASTERS**  
**IN MANAGEMENT RANKINGS**  
 WITH **24** INSTITUTIONS,  
 AHEAD OF THE UNITED KINGDOM (16).

GEI RANKING RESULTS BY PILLAR



**1** IN EVERY **3**  
**FRENCH PEOPLE IS OR HAS BEEN**  
**AN ENTREPRENEUR.**

Source: APCE (the French business creation agency, 2016)

## GEI RANKINGS 2017

	GEI ranking	GEI index	Attitudes ranking	Attitudes index	Abilities ranking	Abilities index	Aspirations ranking	Aspirations index
United States	1	83.4	2	79.1	2	82.6	1	88.4
Switzerland	2	78	11	69.5	3	81.9	2	82.5
Canada	3	75.6	6	73.4	7	75.8	3	77.5
Sweden	4	75.5	5	73.4	5	79.1	5	73.9
Denmark	5	74.1	9	71.6	1	84.5	15	66
Iceland	6	73.5	1	81.4	10	68.5	8	70.6
Australia	7	72.5	7	73.2	8	73.6	7	70.8
United Kingdom	8	71.3	10	70.1	4	79.2	16	64.6
Ireland	9	71	14	63.7	6	78.2	6	70.9
Netherlands	10	67.8	4	76.6	14	65.7	20	61
Finland	11	66.9	3	78.3	20	56.3	14	66.2
Germany	12	64.9	16	59.4	13	66.6	9	68.6
France	13	64.1	17	56.7	11	67.3	11	68.3
Austria	14	63.5	13	65.1	12	66.8	22	58.5
Belgium	15	63	22	52.7	9	68.9	12	67.3
Taiwan	16	60.7	21	54.4	23	53.6	4	74
Israel	17	59.1	20	54.5	22	54.1	10	68.6
Chile	18	58.8	8	72.8	29	48.5	27	55.2
UAE	19	58.8	25	49.9	18	59.4	13	67
Luxembourg	20	58.1	27	47.8	15	64.7	19	61.9
Qatar	21	58	19	55.9	21	55.6	18	62.3
Norway	22	55.9	12	66.2	17	60.2	44	41.2
Estonia	23	55.5	15	59.5	24	52.9	28	54.2
Singapore	24	52.2	42	37.9	19	58.3	21	60.5
Japan	25	51.7	59	30.8	16	61.1	17	63.3



**PARIS: 2<sup>ND</sup> IN EUROPE  
FOR VIRTUAL REALITY  
AND AUGMENTED REALITY TALENT,  
AFTER LONDON AND AHEAD OF BARCELONA.**

Source : LinkedIn (2016)

## METHODOLOGY

For this third report, the Global Entrepreneurship Index sought to measure the various facets of entrepreneurial ecosystems in 137 countries. The overall index comprised three sub-indices (attitudes, abilities and aspirations) made up of 14 pillars, each based on one 'individual' and one 'institutional' variable. These variables may themselves consist of a number of indicators. For example, the attitudes sub-index included a 'startup skills' pillar, comprising an individual variable 'the percentage of the 18-64 aged population claiming to possess the required knowledge/skills to start a business' and an institutional variable that aggregated the gross enrollment ratio in tertiary education and a survey on the quality of science teaching in schools. Variables can be statistical indicators, survey responses or composite indices. The pillars were broken down by sub-index as follows:

→ **The country's entrepreneurial culture** (entrepreneurial attitudes sub-index): opportunity perception, startup skills, risk acceptance, networking, and cultural support.

→ **Characteristics of entrepreneurs and their businesses** (entrepreneurial abilities sub-index): opportunity startup, technology absorption, human capital, and competition.

→ **Startups' ambition to succeed** (entrepreneurial aspirations sub-index): product innovation, process innovation, high growth, internationalization, and risk capital.

Each of the three sub-indices was calculated as the weighted average of its four or five constituent pillars, and the overall index as the straight average of the three sub-indices.

The methodology underwent significant changes in 2016: the method used to calculate the index was revised and nine institutional variables were added, as well as four variables measuring the entrepreneurial ecosystem.



## PARIS: 2<sup>ND</sup> IN EUROPE FOR FRONTIER HARDWARE TALENT

(DRIVERLESS VEHICLES, ROBOTICS, ELECTRIC VEHICLES, INTERNET OF THINGS, 3D PRINTING, DRONES), AFTER LONDON AND AHEAD OF MUNICH.

Source: LinkedIn (2016)



# GLOBAL INFORMATION TECHNOLOGY REPORT 2016

WORLD ECONOMIC FORUM (WEF), INSEAD, SAMUEL CURTIS JOHNSON GRADUATE SCHOOL OF MANAGEMENT AT CORNELL UNIVERSITY • July 2016

The Global Information Technology Report notes that digital technology is driving a technological revolution that countries need to leverage. There is a large divide between countries that can leverage their infrastructure to derive economic benefit from this revolution and those that cannot. The French government has taken action to speed up France's digital transition, notably through its Digital Republic Act (*Loi pour une République Numérique*).

The Global Information Technology Report, published since 2011 by the World Economic Forum in partnership with INSEAD and Cornell University, is based on the Networked Readiness Index. It uses 53 indicators to analyze areas of priority in 139 countries with the aim of better utilizing the potential offered by information technology to support socioeconomic development.

## KEY FINDINGS

→ Finland, Switzerland and Sweden were the three countries best placed to leverage digital technologies for economic benefit.

→ France gained two places this year, climbing to 24th place. It came 12th among European Union countries.

→ The United Kingdom was ranked eighth (no change) and Germany 15th (down two places).

→ Europe remained at the forefront of new technologies, holding seven of the top 10 spots in the rankings. However, there were significant performance gaps between the various countries in the region.

→ Russia was the highest-ranked BRICS country, holding onto 14th place. China gained three points, coming in at 59th place. South Africa gained 10 points to reach 65th place, while Brazil came in 62nd and India lost two points, slipping to 91st place.

GLOBAL INFORMATION TECHNOLOGY  
REPORT: TOP 30 2016

Rank (2016)	Country	Score	Rank (2015)
1	Singapore	6	1
2	Finland	6	2
3	Sweden	5.8	3
4	Norway	5.8	5
5	United States	5.8	7
6	Netherlands	5.8	4
7	Switzerland	5.8	6
8	United Kingdom	5.7	8
9	Luxembourg	5.7	9
10	Japan	5.6	10
11	Denmark	5.6	15
12	Hong Kong	5.6	14
13	South Korea	5.6	12
14	Canada	5.6	11
15	Germany	5.6	13
16	Iceland	5.5	19
17	New Zealand	5.5	17
18	Australia	5.5	16
19	Taiwan	5.5	18
20	Austria	5.4	20
21	Israel	5.4	21
22	Estonia	5.4	22
23	Belgium	5.4	24
24	<b>France</b>	<b>5.3</b>	<b>26</b>
25	Ireland	5.3	25
26	UAE	5.3	23
27	Qatar	5.2	27
28	Bahrain	5.1	30
29	Lithuania	4.9	31
30	Portugal	4.9	28

## FRANCE'S ADVANTAGES

→ **One of France's key strengths is its telecommunications infrastructure.** France was ranked fourth for the number of broadband internet subscriptions, with 40 subscriptions per 100 inhabitants, and 12th for bandwidth size. Its internet market is also highly competitive.

→ France stands out for the quality of its **government online services** and for its **e-participation** score, a measure of the availability of online information and the quality of participative tools and services made available to citizens.

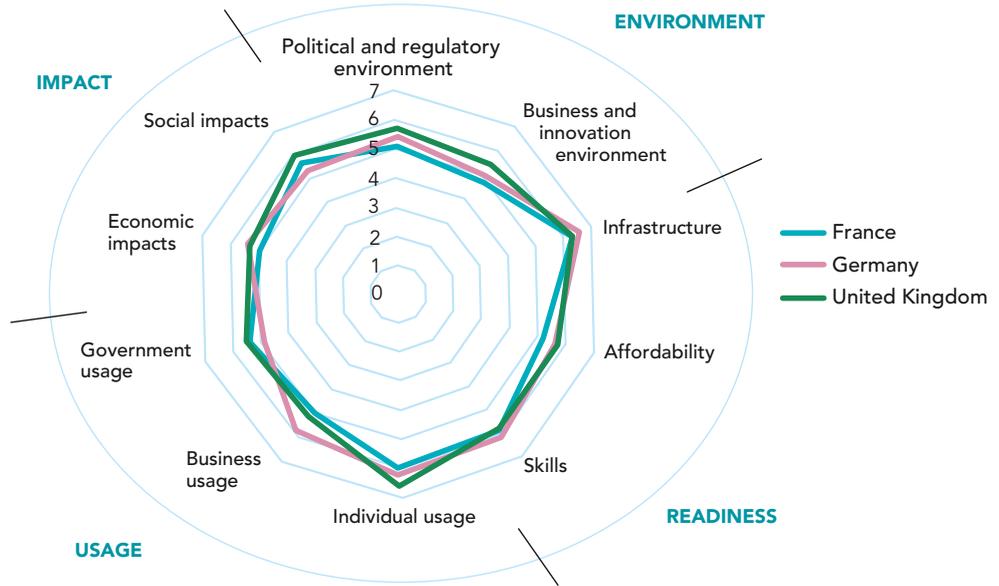
→ In terms of its political and regulatory environment, France was ranked 14th for **number of procedures to enforce a contract** and 14th for **intellectual property protection**. It was ranked 15th for the number of days to start a business (only four days<sup>1</sup>, compared with five in the United Kingdom and 11 in Germany). France was ranked 17th for laws relating to ICTs, ahead of Germany (26th).

→ **French companies have significantly stepped up their use of digital technology** by adopting new organizational models (26th, up 22 places) and improving B2B transactions (33rd, up 11 places), among other things.

→ **Lastly, France stood out for quality of education and human capital:** secondary education gross enrollment rate (17th), quality of math and science education (19th), quality of management schools (11th) and knowledge-intensive jobs (15th), which accounted for around 44% of the workforce.

<sup>1</sup> In 2016, this timeframe went down to 3.5 days.

SUB-INDEX RANKING RESULTS



*"Our greatest strength has been the number and quality of our engineering schools. We have people who are very well educated and loyal. We have a real competitive advantage here."*

Frédéric Mazzella, founder of BlaBlaCar



**FRANCE: #1 COUNTRY IN EUROPE FOR NEW BUSINESS CREATION**

Source: Eurostat (2014 data)

## POINTS TO WATCH

→ **France was ranked 121st for prepaid mobile tariffs**, explaining its poor performance on the affordability pillar (76th): a prepaid mobile costs US\$0.48 a minute in France, compared with US\$0.11 in Germany and US\$0.43 in the United Kingdom. Concerning

the use of ICTs, France was ranked 95th for mobile broadband internet subscriptions per 100 population and 45th for use of social networks. It was also ranked 40th for internet connections in schools.

→ **France was ranked 35th on the business and innovation environment pillar**, mainly because of a high rate of tax on profits (124th).

### METHODOLOGY

The Networked Readiness Index is a composite index based on 53 indicators grouped into four sub-indices:

- **Environment** – two pillars: political and regulatory environment; business and innovation environment
- **Readiness** – three pillars: infrastructure; affordability; skills
- **Usage** – three pillars: individual usage; business usage; government usage
- **Impact** – two pillars: economic impacts; social impacts

Half of the indicators consist of statistical data, mainly sourced from international bodies such as the United Nations and the World Bank. The other half are derived from the WEF's annual Executive Opinion Survey, which in 2015 garnered responses from 14,000 entrepreneurs in 140 countries.

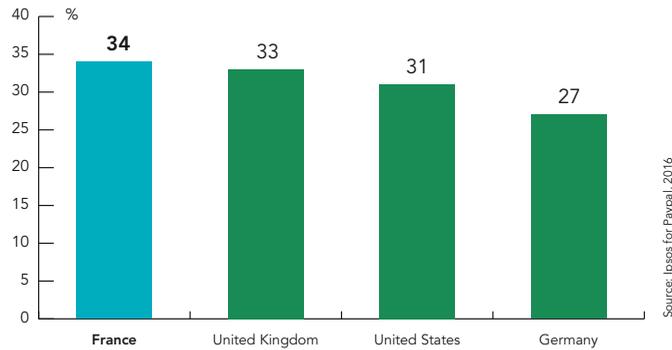
The sub-indices, which are scored from one to seven (1 being the poorest score and 7 the best), are equally weighted within the index. The NRI is calculated by successively aggregating normalized scores by pillar and sub-index.



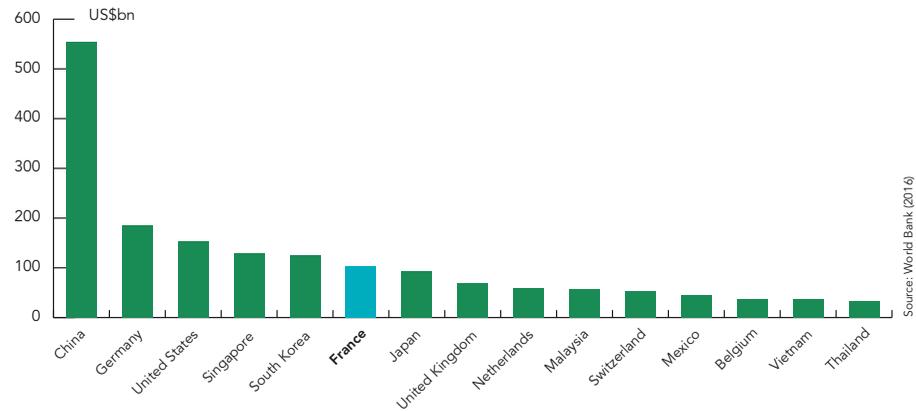
MORE THAN **550,000** NEW BUSINESSES  
FOUNDED IN FRANCE IN 2016

Source: Insee (2017)

**% OF INTERNET USERS MAKING AN ONLINE PURCHASE ABROAD  
IN THE PAST 12 MONTHS**



**TOP 15 GLOBAL EXPORTERS OF HIGH-TECH PRODUCTS\***



\* in 2015 or 2016, most recent year available



**3.5 DAYS NEEDED  
TO START A BUSINESS IN FRANCE,  
VERSUS 4.5 IN THE UNITED KINGDOM AND 10.5 IN GERMANY**

Source: World Bank, Doing Business



# TECH FUNDING TRENDS IN FRANCE IN 2016

CB INSIGHTS • January 2017

# EY FRENCH VENTURE CAPITAL BAROMETER

EY • February 2017

France's startup ecosystem has improved considerably in recent years, particularly on account of public initiatives. In parallel, there has been an upsurge in financing systems, enabling fledgling companies to develop internationally.

EY's annual survey of venture capital in France (*Baromètre du capital-risque en France*), together with 'Tech Funding Trends in France', published quarterly by CB Insights for La French Tech, paints a picture of startup funding trends in France.

**The number and value of tech funding deals in France have risen sharply in recent years, putting the country second in Europe by deal numbers.**

**According to CB Insights, the number of venture capital deals in France doubled year-on-year in 2016** to 486, with a total of over US\$2 billion raised. EY's survey of venture capital in France presents similar data: over €2.2 billion raised in 2016 through 574 deals. According to CB Insights, both the number and the value of deals have more than trebled since 2012.

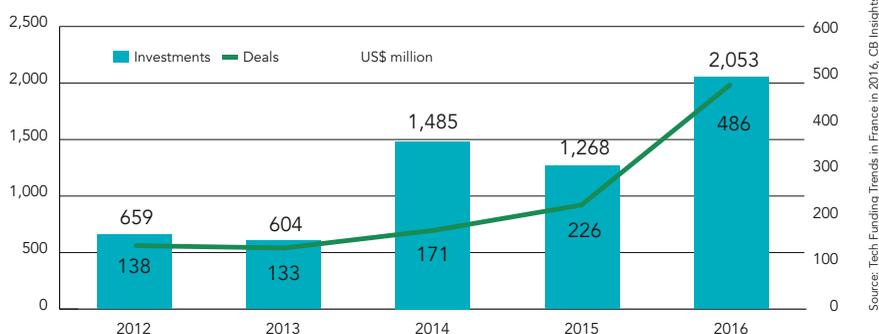
**Thanks to this strong momentum, France was ranked second in Europe – after the United Kingdom – for the number of funding deals, and almost on a par with Germany for amounts of funding raised.** According to EY, France accounted for 20% of funding raised in Europe in 2016, compared with 13% in 2015, placing it on an equal footing with Germany, while the United Kingdom accounted for 36% of the total. Meanwhile, France accounted for 19% of financing deals in the EU by number, putting it after the United Kingdom (24%) but ahead of Germany (16%).

According to CB Insights, France was also ranked second by deal numbers (with 486 deals, compared with 909 in the United Kingdom and 450 in Germany) and third by funds raised (US\$2.053 billion, compared with US\$6.717 billion for the United Kingdom and US\$2.283 billion for Germany).

**The bulk of this funding was concentrated in young startups operating in fields related to the internet.**

**More than two thirds of funds raised (73% for EY and 70% for CB Insights) was early-stage or first-round funding.**

#### TECH COMPANY FUNDING IN FRANCE (2012-2016)



Source: Tech Funding Trends in France in 2016, CB Insights



### FUNDING OF TECH COMPANIES IN FRANCE SINCE 2012:

**€5.5 BN; 1,018 DEALS.**

Source: CB Insights (2017)

**The digital sector (online and mobile services, software and technology) was France's top recipient of venture capital funding**, accounting for 65% of total deal numbers, up 17% from 2015 according to the EY survey. Also included in EY's top five sectors were life sciences, up 51% from 2015, and cleantechs, up 80%. The fintech sector,

although smaller by deal numbers, received 25% more VC funding last year.

A breakdown of CB Insights data shows that 65% of the investment went to the internet sector, 17% to the mobile and telecoms sectors, 9% to electronics, 6% to software and 3% to computing (hardware and services).

#### INVESTMENTS BY MATURITY STAGE

2016 Total investments	Average amount invested: €3.8 million	
<b>€789 million</b> <b>56 deals</b>	<b>€14.1 million</b>	3rd funding round (or more)
<b>€584 million</b> <b>99 deals</b>	<b>€5.9 million</b>	2nd funding round
<b>€717 million</b> <b>295 deals</b>	<b>€2.4 million</b>	1st funding round
<b>€116 million</b> <b>124 deals</b>	<b>€0.9 million</b>	Seed funding

Source: EY French Venture Capital Barometer 2016

*"Entrepreneurial spirit has never been so strong in France [...] The initiatives launched by La French Tech have undoubtedly played a significant part in driving this change [...] When it comes to innovation, France has some real strengths!"*

Pierre-Emmanuel Calmel,  
Chairman and CEO, Devialet

#### INVESTMENTS BY SECTOR 2016

	Number (%)	Value (%)
Online services (including mobile)	38	33
Technology (hardware and components)	5	17
Software	20	16
Life sciences	10	16
CleanTech	7	6
Other	20	12

Source: EY French Venture Capital Barometer 2016

## MARKET PLAYERS IN 2016

Excluding private equity deals (such as KKR's capital injection of €279 million into OVH) and acquisitions of minority interests (such as Accenture's US\$60.8 million investment in Octo Technology), the largest deals of 2016 were as follows:

- €150 million raised in November 2016 by Sigfox, which offers a dedicated communication solution for the Internet of Things
- €100 million raised by music streaming site Deezer in January 2016
- €100 million raised by Devialet, which specializes in acoustic engineering and connected speakers

According to CB Insights, the most active investors in 2016 were Bpifrance, Kima, Partech Ventures and Idinvest Partners, as well as 360 Capital Partners, BNP Paribas and Smartangels.fr (joint fifth).

It should also be noted that French tech companies are increasingly attracting foreign investors. According to a survey by the Chausson Finance consultancy, the number of fundraising exercises in France involving at least one foreign venture fund has doubled in four years (61 startups funded in 2015-2016, compared with 28 in 2011-2012).

The foreign VC funds identified as most active in France are Index Ventures (Switzerland), Accel Partners (United States), Point Nine Capital (Germany) and Global Founders Capital. The authors explain that they often make co-investments alongside French players.

## METHODOLOGY

The EY French Venture Capital Barometer covered equity financing deals for businesses in the startup phase or the first few years of existence, from January 2016 to January 2017. The study was based on data from Dow Jones VentureSource, CFNEWS, Capital Finance and CB Insights. The study only covered deals where the amount has been made public.

The CB Insights quarterly and annual reports for La French Tech showed trends in venture capital deals for companies based in France, without distinction as to the source of funds. The reports were based on deals catalogued by incubators and startup accelerators, as well as funding raised by businesses domiciled in France.



## AMOUNTS RAISED THROUGH CROWDFUNDING PLATFORMS IN FRANCE DOUBLED BETWEEN 2015 AND 2016

(FROM €296.8M TO €628M).

Source: Finance Participative France (2017)

**SIGFOX**

Founded in 2010, Sigfox offers a communication solution for the Internet of Things (IoT). In late 2016, this Paris-based startup completed a record €150 million fundraising operation to step up its international expansion and achieve global coverage. It was the second round of funding for the company, which raised €100 million in a first round in 2015 in anticipation of strong growth. The money came from incumbent Sigfox shareholders (Bpifrance, Elliott, Intel Capital, Air Liquide, Idinvest Partners and iXO), as well as new investors, including Salesforce Ventures, Also Invest, Henri Seydoux, SWEN Capital Partners, Tamer Group and Total. Sigfox already has operations in 26 countries and plans to extend its network to cover 60 countries by 2018.

**DEEZER**

In January 2016, the music streaming platform announced that it had raised €100 million from two groups: Orange, a longstanding shareholder, and media group The Access Industries, which controls major operator Warner Music, among others. Access first invested in Deezer in 2012, when it was a startup; this latest deal boosted its equity stake to over 50%, making it the majority shareholder. The funds raised, which are mainly aimed at marketing and acquiring new subscribers, should allow Deezer – whose catalog boasts over 40 million titles – to consolidate its international expansion.

**DEVIALET**

Since it was founded in 2007, audio engineering specialist Devialet has won more than sixty awards worldwide for its flagship product, the Phantom wireless speaker. Its expertise and development potential have attracted interest from a number of prominent entrepreneurs: Xavier Niel (Free), Bernard Arnault (LVMH), Marc Simoncini (Meetic), and Jacques-Antoine Granjon (vente-privee.com) all acquired stakes in Devialet back in 2012 and have supported the company in its efforts to capture global audio market share. In 2016, Devialet raised €100 million from a variety of partners: French automaker Renault; Taiwanese manufacturer Foxconn (via its European investment fund, Ginko); Japanese tech firm Sharp; and Andy Rubin, the American creator of the Android operating system. The funds raised will allow Devialet to move into new markets, such as television and motor vehicles.

**DRIVY**

French startup Drivy, founded in 2010, specializes in peer-to-peer car rental. In 2016, the company raised €31 million from Cathay Innovation, Nokia Growth Partners, Bpifrance's *Écotecnologies* fund, Via ID (Mobivia group) and Index Ventures. The company's services are available in France, Germany and Spain, and allow any internet user to rent another private individual's vehicle online. The company relies heavily on new technologies such as paperless insurance policies, vehicle inspections performed with mobile devices, and car unlocking via mobile phone. Drivy reports that it now has over 850,000 users in Europe.



# WORLD DIGITAL COMPETITIVENESS RANKING 2017

INTERNATIONAL INSTITUTE FOR MANAGEMENT DEVELOPMENT (IMD)  
• May 2017

This year, alongside its traditional World Competitiveness Ranking and World Talent Report, IMD has published new rankings that aim to measure countries' ability to adapt to and leverage the digital transformation and its impact on government practices, business models and society in general.

The Digital Competitiveness Ranking is based on 50 indicators, a third of which correspond to new variables. These indicators are grouped into nine sub-factors, which are in turn grouped into three factors:

- **The knowledge factor** measures a country's capacity to understand and learn new technologies (talent, investment in training and education, and scientific concentration).
- **The technology factor** measures a country's ability to develop digital innovations (regulatory framework, capital, and technological framework).
- **The future readiness factor** measures how well prepared a country is (adaptive attitudes, business agility and IT integration).

As with the World Competitiveness Ranking, 63 countries were included in the rankings. Six of the 50 indicators were derived from an opinion survey of over 6,000 international investors. The index was calculated retrospectively for the period 2013–2017.

## KEY FINDINGS

Singapore topped the rankings, followed by Sweden, the United States, Finland and Denmark. IMD highlights the strict rules governing entry of foreign talent into Singapore and Sweden and the history of government support for technological innovation in the United States. The United Kingdom was ranked 11th and Germany 17th.

## FRANCE'S ADVANTAGES

France was ranked 25th in these rankings of digital competitiveness. Among countries with a population of over 20 million, it was ranked 14th in Europe and ninth in the world.

**France was ranked 19th on the knowledge factor** and 10th on the scientific concentration sub-factor, ahead of the United Kingdom and Germany, who were ranked 11th and 15th on this sub-factor respectively. More specifically,

France was ranked third on scientific and technical employment and 14th on R&D expenditure and number of articles published. On the talent factor, France was ranked 15th for management of cities and 17th for net flow of foreign students. On the training/education sub-factor, France was ranked 16th for total public expenditure on education.

**On the technology factor, France's regulatory framework was conducive to the development of digital technology (15th).** As such, France

	Total	Knowledge	Technology environment	Future readiness
1	Singapore	Singapore	Singapore	Denmark
2	Sweden	Sweden	Norway	United States
3	United States	Canada	Hong Kong	Netherlands
4	Finland	Switzerland	Finland	Finland
5	Denmark	United States	Sweden	Sweden
6	Netherlands	Hong Kong	United States	Singapore
7	Hong Kong	Israel	Taiwan	UAE
8	Switzerland	Denmark	Switzerland	Canada
9	Canada	Finland	Netherlands	United Kingdom
10	Norway	United Kingdom	Denmark	Ireland

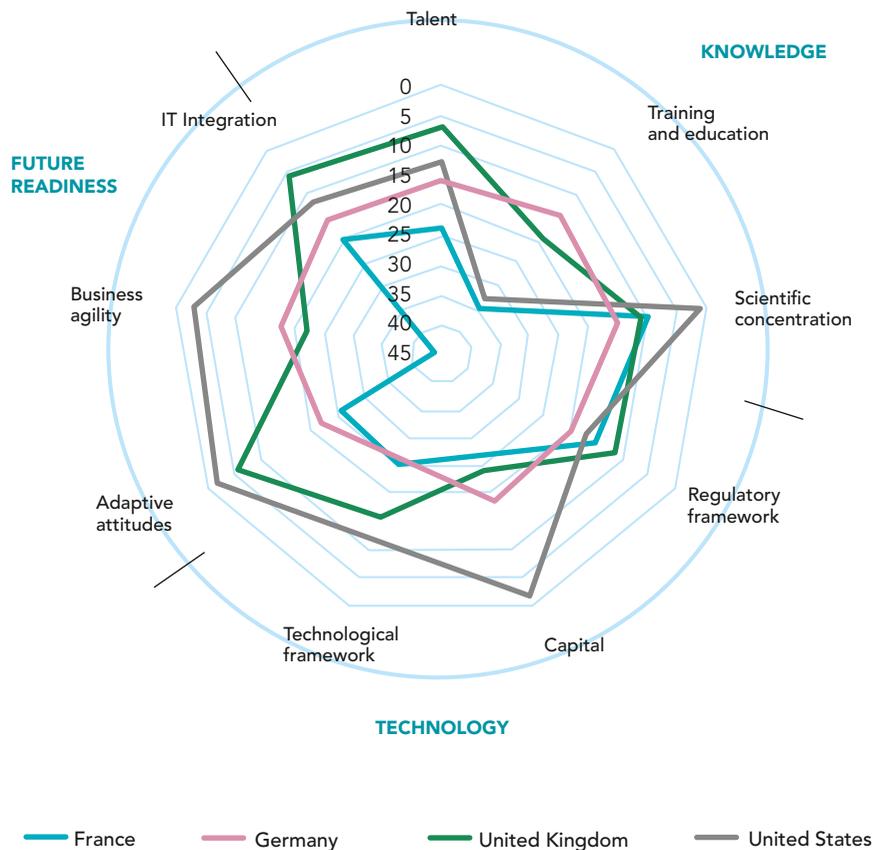
Country	2017 ranking	Knowledge	Technology environment	Future readiness
France	25	19	22	28
Germany	17	13	21	18
United Kingdom	11	10	16	9
United States	3	5	6	2

was ranked 12th for protection of intellectual property rights, 17th for enforcing contracts and 19th for ease of starting a business. As regards its technological framework, France was ranked sixth on high-tech exports and 18th on communications technology. On the future readiness factor, France scored well on e-participation (12th) and e-government (10th), as well as on innovative firms (10th).

### POINTS TO WATCH

Certain weaknesses were most clearly visible on the future readiness factor, particularly as regards business agility, where France was ranked 44th. French firms were not very agile (60th) and could have seized opportunities more effectively (59th) and made better use of big data (49th). Lastly, French people's attitudes to globalization left significant room for improvement (62nd).

COUNTRY RANKING BY SUB-FACTOR





# DEFINITIONS AND METHODOLOGICAL DISCUSSION

The reports reviewed in this publication throw some light on the ability of economies to create an environment conducive to the emergence and development of entrepreneurs and startups. The approaches they take are complementary and make it possible to track changes in ecosystems year after year. The methodologies and the indicators selected do, however, have a number of limitations.

## THE STARTUP UNIVERSE: A MULTI-FACETED ECOSYSTEM

The startup universe encompasses a huge range of fledgling companies, some of them technology firms and others innovators. It also brings to mind the issues of risk-taking, new business creation and access to funding, thus intersecting with what is often referred to as the “entrepreneurial ecosystem”.

**The definitions used in the reports vary from author to author, with the risk that identical terms may be used to refer to different realities.** For example, the Global Startup Ecosystem Ranking (Startup Genome) restricts its analysis solely to technology startups, thereby excluding analysis of hardware companies and biotech, nanotech and cleantech firms. Meanwhile, the

European Digital City Index focuses on startups and scaleups for which innovative digital technology is the main component of their business model, and which would not be able to operate without the internet. This includes e-commerce websites and the ‘Internet of Things’. Furthermore, the line between startups and scaleups remains a very fine one: a scaleup is defined simply as a business that has moved past the startup stage, has experienced several years of strong growth, and has at least 10 employees. Paris has more than 22,600 startups according to the European Digital City Index, using data from startup hubs.eu, compared with somewhere between 2,000 and 2,600 for the Global Startup Ecosystem.

**Nor is there any consensus over the definition of the entrepreneurial environment.** For example, the Global Entrepreneurship

Development Institute (GEDI) opts for a multidimensional definition of entrepreneurship, often reduced until now to measuring risk-taking and the number of new businesses created. The authors propose a holistic approach to the concept of the entrepreneur, and define the entrepreneurial ecosystem as the interaction between three components: the country's entrepreneurial attitudes, the abilities and growth outlook of startups, and the aspirations of entrepreneurs – reflecting the quality of startups, measured *inter alia* by the degree of innovation and sophistication of products and processes. In the Global Startup Ecosystem Ranking, apart from calculating a performance index, ecosystems are studied from four angles: funding capacity, market reach, ability to attract talent, and the experiences of founders and employees. Conversely, in the European Digital Index, entrepreneurial culture is defined mainly by population diversity and willingness to take risks.

**Moreover, questions concerning startups, innovation, the integration of digital technologies and the digital economy often form part of the same debate.** But are 'digitized' economies really more conducive to the development of startups? The GEDI has sought to answer this question by calculating an index showing the correlation between the Global Entrepreneurship Index and the Tufts Fletcher School's Digital Evolution Index. The authors identify a positive correlation between the two indexes, suggesting that those economies that have advanced furthest towards a digital economy also tend to have better developed entrepreneurial ecosystems. For this reason, and out of a desire to provide a comprehensive approach to the entrepreneurial

environment in different economies, we have also incorporated analysis from the WEF's Global Information Technology Report and IMD's World Digital Competitiveness Ranking in our review of the field, alongside more specific rankings covering the world of startups and entrepreneurs.

## COMPOSITE INDEXES SHOULD BE TREATED WITH CAUTION

### THE WAY IN WHICH VARIABLES ARE AGGREGATED AND WEIGHTED OFTEN REMAINS ARBITRARY

Any analysis that restricts a country's entrepreneurial ecosystem to a single indicator, such as the number of 'unicorns', is rather oversimplistic. **This is why most rankings are based on composite indexes calculated using a number of different indicators.** In the case of the Global Entrepreneurship Index, some of the variables on which the index is based are composite indexes themselves. In addition, certain pillars comprise sub-variables that, in some cases, have little in common and are difficult to interpret: for example, the networking pillar comprises a survey (to ascertain the percentage of the population that know an entrepreneur personally), statistics (the urbanization rate) and the infrastructure pillar from the WEF's Global Competitiveness Report. Furthermore, the selection of variables and their associated weightings depend on the authors' point of view. In most cases, the overall index is calculated as the simple average of sub-indexes after normalizing all the indicators. But do factors such as fiscal policy, growth rates, and attitudes towards globalization affect the entrepreneurial ecosystem in the same way?

Some authors take this difficulty into account and propose alternative weightings. For example, the weightings used to establish the Global Startup Ecosystem Ranking are determined on the basis of correlation analysis and various linear regression models. The European Digital City Index goes a step further, offering an option on its website to fully customize its rankings by altering the weightings for each of the indicators.

### THE USE OF OPINION SURVEYS CAN UNDERMINE THE OBJECTIVE NATURE OF RANKINGS

To compensate for a lack of quantitative data on certain aspects of entrepreneurship, such as culture and opportunity perception, most rankings make use of perception surveys with business executives. The predominant influence of opinion surveys on building indexes means that their results should be treated with caution. Such methods undermine the results and are often prejudicial to France, which is perceived as overly bureaucratic and reluctant to embrace globalization.

Often, France's poor rankings result from opinion survey data in stark contrast with economic realities, and it is easy to point to bias in the opinion surveys. As such, a number of perception indexes used in the Global Entrepreneurship Index to assess France's entrepreneurial culture result in particularly low values (opportunity perception, risk acceptance), in contrast with the results obtained in the European Digital City Index, in which Paris was one of the top 10 cities for willingness to take on risk and absence of negative perception of entrepreneurship.

### GLOBAL RANKINGS REMAIN A PRODUCT OF THE INDICATORS AND SOURCES CHOSEN BY THEIR AUTHORS

An economy's performance in a ranking can be read in two complementary ways: looking at its rankings relative to other economies, and looking at its strengths and weaknesses against each indicator.

**Disparities can sometimes be seen between France's ranking against an indicator and its relative performance**, since France's rankings also depend on other countries' scores. For example, in the Global Information Technology Report, France was ranked poorly for the number of mobile phone subscriptions (95th out of 139) and mobile network coverage (67th). However, in absolute terms, it performed well against both of these indicators: 101.2% of the population had a mobile phone and 99% of the population was covered by the mobile network. The difference between France's performance and its rankings is explained by other countries' even better results in these areas and the very small gaps between them. Consequently, the rankings do not systematically reflect the effectiveness of France's networks.

**Finally, the approach taken to rankings may vary greatly, depending on the indicators that are chosen.** For example, while the Global Startup Ecosystem Report highlights that few startups were listed on the stock exchange in Paris, CB Insights emphasizes the number of venture capital deals carried out and the significant increase in fundraising activities.



# AN ECOSYSTEM SUPPORTING INNOVATION, ENTREPRENEURSHIP AND STARTUPS

In recent years, the French government has been pursuing a major campaign to stimulate growth in startups and the digital sector in France, with the aim of making France an innovative, competitive and attractive business location.

## GOVERNMENT MEASURES AND INITIATIVES

Numerous initiatives have been launched to consolidate and promote the French ecosystem, as well as to coordinate innovation efforts between government, the private sector, universities and business incubators. There are a growing number of reforms and initiatives in this area.

### LA FRENCH TECH: BUILDING A STARTUP ECOSYSTEM

After a first year setting up a nationwide network of startup ecosystems through nine accredited “French Tech cities” in November 2014, and four more in June 2015, this major initiative has been expanding further, particularly internationally.

The three strands of the French Tech international strategy are:

→ **Building French Tech Hubs** to group French entrepreneurs in foreign countries into ecosystems to accelerate the foreign development of French startups, and to promote France as an attractive business location for entrepreneurs and local investors. Following a first round of accreditation in 2015 that created a number of official French Tech Hubs, including New York, Israel, Tokyo, San Francisco and Moscow, a further 10 were accredited in 2016, bringing the total number to 22.<sup>1</sup>

→ **Launching a €12 million French Tech international promotion platform** to support various initiatives, particularly by private-sector stakeholders, to highlight and showcase France’s innovation prowess.

1 New York, Israel, Tokyo, San Francisco, Moscow, Abidjan, Cape Town, London, Barcelona, Hong Kong, Montréal, Seoul, Berlin, Dubai, Shanghai, São Paulo, Los Angeles, Milan, Beijing, Shenzhen, Taiwan and Vietnam.

→ **Introducing French Tech Tickets**, a bespoke support package to attract overseas entrepreneurs to France by providing a welcome pack (residence permit, individual grant, accommodation, and customized advice) to help them set up and expand their business.

### FRENCH TECH TALENT: FRANCE WELCOMES FOREIGN TALENT

Paris remains a welcoming destination for foreign talent, and the French capital is endeavoring to boost the attractiveness of its ecosystem, with the aim of Paris-based incubators having 30% foreign startups by 2020. The Paris Landing Pack, closer international cooperation in the area of innovation, and the creation of Paris&Co, Paris's economic development and innovation agency, should all play a part.

In its first incarnation, the French Tech Ticket was also part of this initiative, and 50 international entrepreneurs were welcomed into partner business incubators in 2016. Building on the initiative's success, the landing pack has been extended nationwide, with 41 partner incubators in French Tech cities ready to welcome 70 international startups.

### THE "NATIONAL INVESTMENT PROGRAM": ENCOURAGING INNOVATION TO BOOST FRANCE'S COMPETITIVENESS

The "National Investment Program", launched in 2010 under the name *Grand Emprunt* (National Loan Scheme) and managed by the General Investment Commission (*Commissariat général à l'investissement* – CGI), aims to boost France's competitiveness by encouraging innovation. Initially, a budget of €47 billion was drawn up to **finance innovative and promising investment**

**in France**, under the principle that each project would be co-financed. The budget for the National Investment Program was confirmed in two stages:

- In 2010, €35 billion was allocated to a first wave of investment in higher education and research, the manufacturing sector, SMEs, sustainable development, and digital technology.
- In 2014, an additional €12 billion in funding was added to the program to finance new world-class initiatives, new cutting-edge research and key technologies.

In March 2016, the French government announced a third phase of the program for 2017, with a budget of €10 billion to finance a third series of innovative investments.

### FAST-TRACKING STEPS TO BUILD A DIGITAL SOCIETY

Launched by the French government in 2012, **the "Digital Transition" project helps micro-businesses and SMEs** boost their competitiveness by appropriating and integrating new digital technologies. Entrepreneurs can receive support from several hundred public-sector digital advisers located all over the country, together with private-sector consultants. These advisers provide microbusinesses and SMEs with information, documentation and training in digital best practice.

To go even further, a **'Digital Republic' Act of October 7, 2016**, created with input from internet users, seeks to fully seize upon the economic opportunities offered by the digital era. The Act addresses issues such as **data portability, the right to be forgotten, open data, confidentiality of private correspondence**, verification of online notifications and electronic sports.

Meanwhile, **local councils are also committed to digital integration**. For example, in an initiative seeking to drive the city of Paris forward together with its citizens, ‘**Paris Open Innovation**’ meetings have brought together innovators to discuss a variety of topics, including open data, smart and sustainable cities, the circular economy, revegetation, new local businesses, citizen participation, and digital services. ParisData, the **open data website run by Paris city council**, provides the public with free access to all data released by city departments, so that developers can analyze this information, improve certain services and propose new ones.

The French government has also been looking at infrastructure, launching a **Very High Speed Internet Plan** in 2013 with the aim of ensuring nationwide very high speed coverage by 2022, and in 50% of households as soon as 2017. Local authorities and telecoms firms are set to invest €20 billion over 10 years, particularly in fiber-optic technology.

#### TAX ARRANGEMENTS GEARED TOWARD INNOVATIVE COMPANIES

**France’s research tax credit offers Europe’s most beneficial tax treatment for R&D expenditure. Created in 2004, the status of “innovative new company”** (*jeune entreprise innovante* – JEI) supports the formation of innovative companies through a special status that grants them tax and social security relief (exemption from corporate and capital gains tax, total exemption from various employer social security contributions, etc.). The JEI status has been extended to “new university companies” (*jeune entreprise universitaire* –

JEU) to encourage **new business creation by students** and people involved in research (research professors).

#### A LEGAL FRAMEWORK ENCOURAGING CROWDFUNDING PLATFORMS

France was the first country in continental Europe to adopt a legal framework for crowdfunding, in 2014. At the end of the first half of 2016, there were over a hundred crowdfunding platforms operating in France. Under French law, project owners can now borrow up to €1 million through a crowdfunding platform (compared with €300,000 before the reform). There are two statuses: crowdfunding intermediary (*intermédiaire en financement participatif* – IFP) for lending-based platforms; and crowdfunding investment advisor (*conseiller en investissement participatif* – CIP) for equity-based platforms. Donation platforms are only subject to light-touch payment services regulations, and may declare their operations under the IFP status.

### “COME BACK, LÉON: WE’RE INNOVATING AT HOME!”

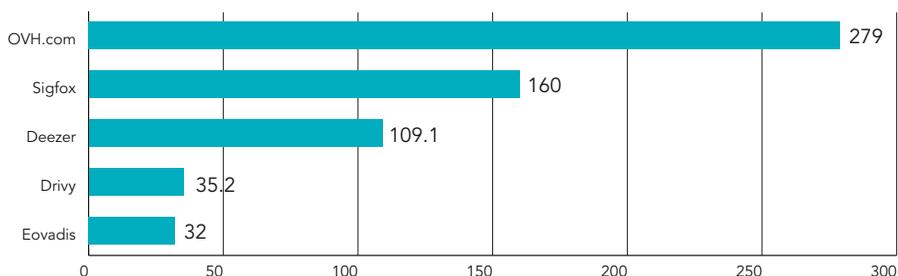
Initiated by iconic startups and scaleups from France’s entrepreneurial ecosystem, BlaBlaCar, Captain Train, Chauffeur Privé, Dataiku, Drivy, iAdvize, La Fourchette, Showroomprive.com and Sigfox, *Reviens Léon* (“Come back, Léon”) is a program to promote the French ecosystem internationally and attract talent to it, with the aim of valuing international experience and fostering skills circulation. The program, initially positioned as an initiative to recruit French expatriate talent, is now being opened up to international talent. Its objective is to attract talented profiles to both French and European

companies. International experience is very valuable in helping such young companies grow and expand internationally.

The program focuses on two key initiatives:

- **Centralizing “Léon” job offers** on a single website.
- **Helping people return to France** by providing assistance with administrative and tax procedures, relocation arrangements, looking for homes and schools, etc. Once recruited by a startup included in the program, an expatriate can be put in touch with public- and private-sector experts in accordance with their needs.

### FRANCE’S TOP FIVE FUNDRAISERS IN 2016 (US\$ MILLION)



Source: CB Insights

## PUBLIC STAKEHOLDERS

France has a number of public stakeholders supporting startup growth, including the Ministry for the Economy and the Ministry of Finance (Businesses Directorate, Treasury Directorate), the Ministry of Foreign Affairs (Directorate for Businesses and the International Economy), the National Investment Commission, the French Government Investment Fund (CDC), France's public investment bank (Bpifrance) and Business France.

Their roles are to:

- Coordinate their activities to boost startup growth as part of the 'La French Tech' initiative.
- Identify and nurture innovative startup projects.
- Help entrepreneurs develop their projects.

### BPIFRANCE: FRANCE'S PUBLIC INVESTMENT BANK

France's public investment bank plays a key role in supporting innovative startups and is involved at every stage of their development.

The main sources of funding offered to fledgling companies by Bpifrance include:

- **i-LAB:** A national competition organized annually by the Ministry for Higher Education and Research in partnership with Bpifrance to help create innovative tech companies, with 60 to 150 winners a year.
- **The French Tech grant:** Aimed at entrepreneurs supported by accelerators and at fledgling companies in their first year across all business sectors. Capped at €30,000, the grants can cover up to 70% of eligible expenditure (costs of support, studies and training, project owners' expenses, personnel costs, etc.).
- **Seed capital loan:** Launched in 2005 and aimed at companies less than five years old,

before they embark on a fundraising operation. Bpifrance provides subsidized loans requiring no security or guarantees, ranging from €50,000 to €100,000, or up to €300,000 if regional authorities agree to stand as guarantor.

→ **Seed capital investment loan:** Once investors have been found, Bpifrance proposes a second type of finance, again in the form of subsidized loans requiring no security or guarantees. Such loans range from €100,000 to €500,000 or, in exceptional circumstances, €1 million.

→ **Innovation advance:** innovation development assistance (*Aide pour le Développement de l'Innovation*) comes in later, helping companies with fewer than 2,000 employees develop and complete an innovative product or service prior to its industrial and commercial launch. Bpifrance provides an advance that is repayable if the innovation proves successful, or an interest-free loan. The assistance provided can cover 25 to 65% of eligible expenditure.

Bpifrance is also involved in growth acceleration programs and initiatives such as:

- **Bpifrance Le Hub,** which hosts startups from all over France at its 1,000 sq. m. Paris site. Firms supported by Bpifrance Le Hub are hosted at the site and receive customized support for six to 18 months (help establishing links with potential clients at major corporations and mid-size companies, support with financing strategy, ongoing relationship with an investor and a Bpifrance financier, individual advice on fundraising, access to a partner network, etc.).
- **Bpifrance Le Lab** is an ideas laboratory launched in March 2014 with the aim of building a bridge between the worlds of business and research. It helps improve Bpifrance's financing and support practices, stimulates business leaders' strategic thinking and boosts the growth of their companies.

→ **Bpifrance Université** runs short, targeted, expert-designed online courses on a wide range of topics (strategy, finance, international, innovation, legal, etc.).

→ **Bpifrance Excellence** is the network of high-growth businesses supported by Bpifrance. It aims to put firms in touch so that they can work together to boost their businesses.

## BUSINESS FRANCE, THE NATIONAL AGENCY HELPING STARTUPS GO GLOBAL

Business France is the national agency supporting the international development of the French economy, responsible for fostering export growth and facilitating international investment in France. As a founding member of 'La French Tech', Business France is also fully committed to developing startups internationally.

Business France offers an international support program specifically for French Tech startups. The aim of its three-phase program is to introduce fledgling businesses to markets in accordance with their level of maturity:

→ For early-stage startups seeking clients and publicity, as well as partners and investors, Business France organizes French Tech's presence at the main international tech shows (CES, SXSW, IFA, Web Summit, Slush, etc.).

→ Business France has developed two-week immersion programs in the main business ecosystems abroad (French Tech Tours of North America, China, Russia, India, South Korea/ Japan). These programs are ideal for companies seeking to assess the suitability of potential markets for commercial development in the medium term.

→ For more mature startups, in partnership with Bpifrance, Business France has developed Impact, an ambitious growth acceleration program to enable startups to become established in the tech world's two largest markets: the United States and China. Running over several weeks and following a rigorous selection process, participating startups are immersed in the ecosystems of San Francisco and New York in the United States, and Beijing, Shanghai, Shenzhen and Hong Kong in China.

Every year, in partnership with Bpifrance, **Business France** takes French startups to Silicon Valley as part of the **Impact growth acceleration program (formerly Ubi I/O)**. Under this program, French companies considering an imminent move into an American market receive 10 weeks of intensive business development, coaching and networking. The aim is to enable French startups selected for their innovation potential to forge close and lasting links with global leaders in ICT.

An equivalent program, Impact China, has been developed for the Chinese market. Impact China is an immersion program designed to acquaint French companies with the specific features of the Chinese market. While 'La French Tech' companies targeting China need to establish whether the market is interested in what they have to offer, they also need to get a feel for the country they have heard so much about.

Impact China is therefore designed in two stages, introducing the selected companies to the Chinese market in a manner appropriate to their level of maturity.

→ 10 days of immersion: This first phase aims to expose participants to the Chinese high-tech environment so that they can understand its specific features, rules and practices.

→ 4 weeks of acceleration: The second phase is intended to enable the most mature companies to deepen the ties they forged during the first phase and to develop partnerships.

Business France also offers the opportunity to take part in internationally renowned programs such as Medstartup, the fruit of a partnership between Business France and the Galien Foundation, which rewards innovative trans-Atlantic partnerships between startups in the pharmaceuticals, biotech, medtech and healthcare industries. In this context, Business France also works with the World Economic Forum (WEF) to support companies and startups attending this internationally renowned event, as well as associated regional events.

As part of its promotional responsibilities, Business France has also been mandated by the French government to support the **'French Tech International Attractiveness Platform'**. The purpose of the platform is to facilitate promotional and influencing activities internationally to broaden the reach and increase the attractiveness of the French startup ecosystem.

## THE FRENCH GOVERNMENT INVESTMENT FUND (CDC)

The French Government Investment Fund is an institutional investor acting in the public interest, supporting local authorities in equipping their communities with digital technology and helping to develop innovative digital services and applications.

The fund plans to support the ***Arc de l'innovation*** (Arc of Innovation) project by creating over 150,000 sq. m. of tertiary real estate (for incubators, co-working spaces, teleworking centers and business service centers) on the edges of Paris and in participating neighboring municipalities. Out of the €600 million of investment already identified for Paris alone, the French Government Investment Fund will be able to consider providing up to €300 million in savings fund loans, which can then be topped up through equity capital investments.

## MORE AND MORE FABLABS AND INCUBATORS

Various types of business incubators have sprung up all over France supporting the development of startups, which can receive guidance, tailored advice and assistance from a network of professionals.

### DIGITAL FABLABS

The rise of the mobile office has brought with it a move towards shared applications, embodied by the phenomenon of fablabs, which help developers acquire skills so that they can quickly put ideas into action. LeFabClub, Usine IO, NUMA and Le Petit FabLab de Paris all provide, among other things, workstations and self-service 3D printers. They also offer young entrepreneurs advice and expertise.

### STATION F

This project, created in partnership with Paris City Council and co-financed by the French Government Investment Fund (CDC) and Xavier Niel, is now home to a thousand innovative startups. Occupying more than 30,000 sq. m. in Paris's 13th *arrondissement*, Station F will be the world's largest startup campus.

### LE CARGO

The Le Cargo building, which was completed in November 2015 and hosts innovative young companies on the edge of Paris, is Europe's leading startup incubator. This 16,000 sq. m. building, built by Icade, represents a €66 million investment financed jointly by the French Government Investment Fund (CDC), Paris City Council and the Ile de France Regional Council. Initiated by Paris City Council, the project forms part of the *Arc de l'innovation* ("arc of innovation"), a network of premises hosting innovative startups (designed for incubators, co-working spaces, remote working

centers and business centers) on the edge of Paris and in its inner suburbs.

### NUMA

Previously known as Silicon Sentier, NUMA is a global innovation network that supports the development of startups, businesses and communities. With a presence in Paris, Moscow, Casablanca, Mexico, and more recently New York, it brings together a wide variety of mutually reinforcing activities: co-working, startup acceleration, community formation, digital transformation, and open innovation programs. With the aim of showcasing young French startups, NUMA is partnering with international consulting firm Roland Berger to produce an overview of the startup landscape in France. This research, based on two surveys of 375 startups that have applied for NUMA's acceleration program, reveals that 60% of startup founders are aged between 25 and 34, and that engineering and business school graduates are equally represented (23%). According to the research, the top two needs expressed by startup founders are market expertise and technical expertise.

### '42' CODING SCHOOL

Xavier Niel's coding school, '42', which offers free classes with no teachers, was exported to Silicon Valley in 2016 and has its own startup accelerator program, reserved for projects launched by the school's students.

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**Business France is the national agency supporting the international development of the French economy**, responsible for fostering export growth by French businesses, as well as promoting and facilitating international investment in France.

It promotes France's companies, business image and nationwide attractiveness as an investment location, and also runs the VIE international internship program.

Founded on January 1, 2015 through a merger between UBIFRANCE and the Invest in France Agency, Business France has 1,500 personnel, both in France and in 70 countries throughout the world, who work with a network of public- and private-sector partners.

**CONNECT – FAST-TRACK – SUCCEED**

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