The French tech revolution

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How France's startups made it to centre stage







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The French tech revolution

How France's startups made it to centre stage

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The New French Revolution

Looking back, moving forward

Covid-19 could have very well spelled the end of days for the French startup scene in 2020. But instead, it proved that the French ecosystem is robust enough to not only roll with the punches but to fight back.

After a year that defies description (let's face it, "unprecedented" doesn't quite cut it), French startups raised a record €5.4bn, 7% more than in 2019. Making France the only country among Europe's three largest markets that managed to grow in 2020. France now counts among its ranks 10 unicorns — 4 of which sprang up last year — and has strengthened its IPO pipeline.

Covid-19 proved that the French ecosystem is robust enough to not only roll with the punches but to fight back

Not bad for a place that, less than a decade ago, was considered a tech backwater. It was a place where venture capital was scarce and foreign investors came for Fashion Week or to sip rosé along the French Riviera — certainly not to invest in startups! Many of our best founders fled to the US, convinced that staying would be suicide given the inhospitable environment created by anti-startup bureaucrats. We still have the scars to show for it: Snowflake, Datadog, Eventbrite, Tenable and Moderna to name a few, all billion-dollar companies founded by French entrepreneurs in the US.

Given this context, the milestones we have reached this past year aren't just markers of resilience but of the sheer relentlessness with which so many of us have worked to take the ecosystem this far in such a short period of time. It is also a reminder of how much work is still left to be done.

Fortunately, this work has a clear direction. Though we enter 2021 with a lot of uncertainty, there are three things that you can bet your hat on:

The French government, which Sifted has nicknamed the "very visible hand" (p. 34), is not about to let the ecosystem down now. Certainly not under President Macron and Cedric O's (p. 20) watch. I don't just mean funding — I'm talking about significant pro-startup policies, regulations, programmes and the continued commitment of our team and 50+ French Tech Government Correspondents (p. 23).

Diversity and inclusion will move front and center. This isn't about political







correctness, charity or "diversity washing" (p. 34). We can only surmount the crisis with the help of the very best entrepreneurs — and these don't only come from the privileged classes. Great innovators can be found in the inner cities, the countryside, among immigrants, refugees and the urban poor. Many of them will be women. This talent needs to be tapped if we are to succeed. In 2021, we are upping support of grassroots programmes like Les Déterminés, Station F's Fighters or Singa, and injecting 200+ founders from unlikely backgrounds into the ecosystem via our €15M programme, French Tech Tremplin (p. 23).

We will break whatever record we set for the next year. With the rest of Europe. France is proud of what we've achieved as an ecosystem, but we're also grounded in reality. We need all of Europe to mobilise change and to seize this moment in order to become an alternative tech powerhouse. If you watched President Macron's December interview with Niklas Zenstrom, then you know something is cooking.

The "French Tech Revolution" is well on its way, with entrepreneurs, investors, communities... and yes, even the government, helping to push the whole movement forward. The time is coming when values and valuations will go hand-inhand, and when innovation will be focused on solving humanity's most important challenges — and if things go right, with no heads rolling.



KAT BORLONGAN Director of La French Tech

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"We have a president who is willing to commit himself to technology, because tech is at the heart of international discussions today... (Macron) is fully aware we have to invest more and accelerate."



The entrepreneurial state

he French government has always sought to guide its economy and nurture strategic industries. Emmanuel Macron's presidency has upped the game when it comes to applying these principles to its digital sectors.

The French touch

French innovation carries its own distinct signature, from food and wine-tech to the AI pioneers drawing from the country's long history of excellence in fundamental mathematics. But the French touch is also about startups tackling some of France's deepest challenges, such as educational inequality.

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We asked French entrepreneurs and investors what they think 2021 has in store for the world of tech. Here are eight trends to watch out for.

Before you begin A primer on France

What is there to say about French tech? A decade or so ago, the answer to that question would've been a tough one. Silicon Valley enjoyed the near exclusivity of churning out tech champions, while Europe, which had largely missed the boat on the rise of the data economy, was struggling to move forward.

A lot has changed in 10 years. Economic reform and a trans-partisan effort to support startups and entrepreneurs, financially and otherwise, are paying off. Unicorns and brands with international reach are now coming out of France, and founders are outgrowing their national and regional ambitions. France is steadily figuring out how to capitalise on its world-class mathematicians and encourage wellestablished corporates and startups to work together — and international investors are taking notice.

The work isn't over though. Sparking interest for French tech on the global stage is a significant achievement, but it's still only step one. Attracting further capital from bigger financiers and for bigger rounds, unlocking the path to stock market listings for startups, and growing a more diverse pool of topnotch international talent are just some of the challenges that lie ahead.

Fast forward another decade and what's likely to matter extends beyond any single milestone. Instead, we'll probably be weighing up France's 'innovation DNA'. Silicon Valley's model was about disruption at all costs — breaking things didn't matter, if anything it was a measure of success. For a long time being a technology company meant adopting that approach. So what will the French way be? And can French tech emerge with a strong, distinct identity that differentiates its startups and influences innovation globally?

This report analyses the state of French tech as of 2020, zooming in on the particular context created by the Covid-19 pandemic and looking well beyond it too, to explore the achievements of French startups and pinpoint the early signs of what is still to come for the country's innovators and entrepreneurs.

We split our analysis into three parts: ecosystem growth, the government's role and strategy, and the 'French touch', which explores the distinct signature of the country's innovation. In the final chapter, we explore predictions for 2021, highlighting the trends to look out for. We hope you enjoy reading it.



MARIE MAWAD Journalist at Sifted

Geared for growth?

France has proven its mettle at producing startups that scale. Unlocking more capital, and building the talent pool to support rapidly growing companies, can take it to the next level.



What France has achieved

- → Unicorns and global brands are coming out of France
- → A change in mindset is giving rise to ambitious entrepreneurs
- → The previous generation of entrepreneurs are reinvesting and giving back
- → There is a growing pool of available capital for startups
- → An uptick in investment in 2020
- → Attention from international investors
- → More collaboration with corporates

What's next?

- → A chance to capitalise on deep tech as the next frontier
- \rightarrow Unlocking more capital, including financing for later-stage growth
- → More large exits through M&A
- → Converting a growing IPO pipeline into European stock market listings
- → Attracting more top-notch branding and product marketing talent
- → Firm up a growing influx of global tech talent
- \rightarrow Encourage smaller hubs in cities outside of Paris

rom health insurance and ride-sharing to insect food and cryptography, France's startups have proven their ability to build global brands. The country's unicorns have made headline news, from telehealth platform Doctolib's plans to hire 3,000 new employees to OVH challenging Amazon's cloud hosting services in 138 countries.

French-born technology companies are attracting the interest of international players like Sequoia and Tencent, and many are well positioned in sectors poised for growth, particularly in areas influenced by Covid, such as digital health, cybersecurity and enterprise software.

Each success feeds back into the ecosystem. Wannabe entrepreneurs take inspiration from national success stories, and a strong spirit of collaboration infuses the French startup community as winners help lift fledgling companies up the ladder.

"As we have more and more startups scaling and succeeding, we have more team members in those startups who can give the knowledge and learning back to others," says Sacha Lazimi, the cofounder and chief executive of Yubo, a friend-making social media app for youngsters.



Yubo

THE ELEVATOR PITCH: Europe's Snapchat for teens MARKET: Consumer tech TOTAL FUNDING: €51m YEAR FOUNDED: 2015

USERS: 40m+ in 40+ countries **FUN FACT:** Games help start a conversation. As ice-breakers Yubo

users often share a group game of Pictionary, or play "would you rather" or "let them guess".

A NEW BREED OF FOUNDERS

Under 30 years old, Lazimi is part of France's relève: a new generation of founders who are walking in the footsteps of earlier success stories entrepreneurs like Xavier Niel, Marc Simoncini and Jacques-Antoine Granjon, who have made a fortune, and are now in their fifties and reinvesting their winnings to support the next generation. Antoine Martin and Alexis Bonillo became seed investors after selling their locationsharing app Zenly to Snap for €300m. Pierre Kosciusko-Morizet became a business angel after selling his eBay competitor PriceMinister to Japanese internet giant Rakuten.

Telecoms billionaire Niel has arguably done the most to boost the ecosystem through the Station F startup campus, which has nurtured over 1,000 of France's up-and-coming businesses. Graduates include Stonly, Okarito and QantEv, which have each completed multi-millioneuro fundraising rounds. They're emblematic of how far France has come with regards to fostering ambitious entrepreneurship.

Like Lazimi, the new breed of French entrepreneurs are in it for the long haul — out to scale their startups into global champions. They say they are less tempted to cash out early,

French angel investors worth knowing





Founders Future, seed investor in Lydia, alma, memo and Mansa

VALENTINE BAUDOIN: partner at

THIBAUD ELZIERE: founder of eFounders, investor in Argent, Spendesk and PayFit

HUGUES LE BRET: founder of

Compte-Nickel (sold to BNP

Paribas), backed fintechs like

Pretto, Pixpay and Helios via his own consulting/investment arm

DIDIER VALET: former deputy chief executive at Société Générale, investor in Epsor, Leocare and Alma



DAMIEN GUERMONPREZ: chair of Lemonway, investor in Pumpkin, Trustpair, TacoTax, Buy Way and Personal Finance



GILLES SAMOUN: founder of Qualys and Salesmachine, investor in Spendesk, Shine and Payfit

CÉLINE LAZORTHES: founder of Leetchi / MANGOPAY, investor in Pumpkin and Tacotax



France's unicorns

DEEZER: online music streaming service for any device 2006 | Raised €480m | Employs 700+

BLABLACAR: connects drivers with empty seats with people looking for a ride 2006 | Raised €405m | Employs 600+

MEERO: a marketplace for professional photographers and clients 2016 | Raised €269m | Employs 1000+

DOCTOLIB: software for online appointments with doctors and dentists 2013 | Raised €237m | Employs 1500+

OVHCLOUD: providers of web hosting, cloud and dedicated servers 1999 | Raised €650m | Employs 2000+

VEEPEE: a members-only online shopping destination 2001 | Raised undisclosed private equity | Employs 6000+

MIRAKL: helps retailers launch their marketplace and manage their sales 2011 | Raised €357m | Employs 350+

CONTENTSQUARE: an optimisation platform for web and mobile user experience 2012 | Raised €302m | Employs 800+

IVALUA: web-based spend management solutions 2000 | Raised €121m | Employs 500+

VOODOO: casual games developer for mobile 2013 | Raised €182m | Employs 300+ less obsessed with valuations, less likely to move their company to the US and more confident that they can spawn the next Facebook or Amazon from their hometown.

President Emmanuel Macron has set a target of having more than 25 unicorns in France by 2025, from about half of that number in 2020. And while such targets are not easily reached, entrepreneurs still called him out for not being ambitious enough.

Voodoo's Alexandre Yazdi and Alan's Jean-Charles Samuelian responded that France should stop counting its unicorns. Samuelian pitched the idea of aiming instead to build five companies worth €50bn each. To that, Macron's response was: "jackpot, you're on".

A CHANGE IN MINDSET

That's a far cry from the talk common among and about French tech a decade ago.

"When my cofounder and I started out, entrepreneurship just wasn't sexy," says Pierre Dubuc, who cofounded online education platform OpenClassrooms in the early 2000s, which he started when he was 11 years old. When he turned 18 in 2006, it was hardly any better. "There were practically zero support structures at that point and it was really hard to raise any money at all. Friends and family looked at us with question marks in their eyes," he says.

In fact, like most of Europe, France fell behind with the emergence of the digital and data economy. It spent years moping about not having its own Google or Facebook, all the while struggling to support its homegrown success. Failing to keep up with new consumer service offerings, it saw its



OpenClassrooms

THE ELEVATOR PITCH: Education for anyone, anywhere MARKET: Edtech TOTAL FUNDING: €62.7m YEAR FOUNDED: 2013 USERS: 2.5m+ NORTH STAR METRIC: 1m individuals placed in the workforce every year by 2025 TOP THREE COMPETITORS: Galileo, Coursera, Udacity FUN FACT: Cofounder Pierre Dubuc was 11 years old when he went online searching

for a how-to guide on coding a website from scratch. That led to the launch of the first iteration of the OpenClassrooms project the same year.

once innovative national telecoms giant turned into a mere provider for the 'dumb pipes' of Netflix's data. It completely fell out of the mobile handset market and sold off assets that were former national glories, like Alcatel's mobile phone brand, to name just one example.

Early waves of French technology entrepreneurs struggled too. Flash sales website Veepee ventured into the US only to pull out shortly after over fears it would be crushed by bigger rivals with deeper marketing budgets. For years, music streaming app Deezer's motto was complete global expansion — except the US. And when online ad placement startup Criteo one of France's most symbolic early successes — sought a stock market listing in 2013, it turned to the Nasdaq.

Over the years, however, successive governments began to promote entrepreneurship by pumping investment into startups through a variety of structures. The successes of some founders started to inspire others to take up the baton and push further. "Today is completely different; there's all this talk about entrepreneurship all the time, incubators at every corner and founders' programmes in universities," says Dubuc. "At the beginning, we used to dream of making a hundred grand and we thought that was the ultimate success. If we set up shop today, we'd have an incubator and a million euros in seed money."

MORE MONEY, FEWER PROBLEMS

A changing mindset has translated into concrete success. The average startup size at acquisition is growing steadily each year, a sign that founders are holding on for longer. They're expanding internationally, faster and more aggressively than ever before, and they are tapping investors for sizable sums.



EcoVadis

THE ELEVATOR PITCH: A ratings agency that's more interested in impact criteria

MARKET: Greentech

TOTAL FUNDING: €213m

YEAR FOUNDED: 2007

USERS: 450+ enterprise companies NORTH STAR METRIC: Reach of their network impact, measured by the number of companies that engage in sustainability TOP THREE COMPETITORS: Sedex, RBA

and Higg

FUN FACT: EcoVadis awards companies a score — and a medal (the top one is platinum)

Tehtris, a cyber startup, raised a whopping €20m Series A in November 2020. EcoVadis, a sustainability metrics software firm, raised \$200m (€165m) in January 2020 to support its global expansion. Mirakl, a cloud-based e-commerce company, raised \$300m (€247m) in September to build out its engineering, sales and marketing capabilities.

French corporates are also bringing their firepower as they look to harness startup innovation.

"The French ecosystem has so profoundly evolved over the past five years. Startups are more mature and have ready-to-deploy solutions that bigger companies can pick up quickly," says Julie Ranty, the managing director at Viva Technology, the organiser of the VivaTech conference, which aims to bridge the gap between startups and corporates in France and Europe. "As a result, collaboration between startups and corporates has developed a lot. And existing leaders in various industries are also more conscious that they need to keep innovating, and that startups can help."

International venture funds and technology giants are placing their bets: Tencent led a \$45m (€37m) raise in fintech Lydia, Sequoia is ramping up its European network, which includes a scout role for Roxanne Varza, Station F's chief, and US venture fund Accel has picked up local talent for its scouting network, including Doctolib's Agnès Bazin.

And while corporates in France aren't as acquisitive as they could be (Société Générale's acquisitions of Qonto and Treezor in recent years and BNP Paribas' takeover of neobank Compte-Nickel in 2017 are notable exceptions), France's bigger startups are increasingly becoming acquirers in their own right — carpooling app BlaBlaCar has expanded by taking over bus ticketing platforms, while Doctolib has consolidated by buying one of its rivals.

Corporate innovation, French style

SCHNEIDER ELECTRIC has a corporate venture capital arm with a €500m fund and an Internet of Things (IoT) accelerator.

L'OREAL is the official sponsor of Station F's beauty accelerator with partners including Sillages Paris, a startup developing personalised fragrances based on machine learning.

DANONE runs their own Manifesto Innovation Accelerator.

Paris public transport operator **RATP** runs an accelerator programme that has supported startup LifeAZ, a first aid training platform that uses games to teach first aid to people on public transport.

"There's not enough M&A and exit perspectives for French startups, but having bigger startups on the market and more acquisitions by these startups could be a factor that accelerates market consolidation," says Viva Technology's Julie Ranty. "French startups are also seen more and more as attractive targets for international companies, whether in tech or more traditional players. That will also keep bringing dynamism to the market."

Perhaps the greatest testament to France's growth dynamics is its performance through the pandemic year. Of Europe's three largest markets by invested venture capital, France grew the most, at 7%, ahead of the UK and Germany. Over the past decade, funding raised by French startups has been on a spectacular growth path, and the country has been able to both attract more global investors and deliver bigger funding rounds for its tech ecosystem.

Thanks to the uptick in investment in 2020, France exceeded €5bn in capital invested on an annualised basis for the first time. Paris is now Europe's number two hub for startup investment, behind London, and in the continent's top four destinations in terms of startup network density, talent pool and investor sophistication, along with London, Berlin and Stockholm.

CATCHING THE NEXT WAVE

While France's startup community is diverse, growth momentum is proving especially strong in businessto-business (B2B) software, biotech, digital health, clean tech and agri-tech, according to Paul-François Fournier, executive director in charge of the innovation division at Bpifrance, the state-owned investment fund and a major startup investor. Fournier is confident about France's positioning in deep tech, a category comprising complex engineering and science-based fields like AI, robotics, quantum computing and biotech, thanks to the country's exceptional technical talent pool. "The last 20 years have been about digital, but the next decade will be about deep tech and we have something to offer in this new era," says Fournier.

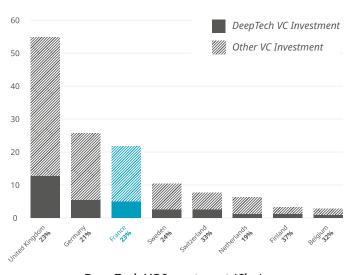
"The last 20 years have been about digital, but the next decade will be about deep tech and we have something to offer in this new era"

Deep tech startups are often described as the bridge between fundamental scientific research and the potential applications deriving from it concrete products and services that can be sold to consumers or businesses. These startups will typically take an innovative stance on longterm challenges like reducing our carbon footprint, using data science to power better healthcare, and how humans can cope with the impact of climate change. They'll typically develop breakthrough technology in anticipation of future potential.

Recently, Covid-19 and the race to come up with a cure and engineer the first vaccine has heightened interest in deep tech, and biotech more specifically.

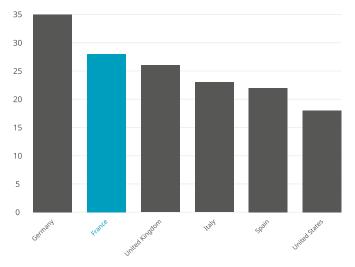
"Covid has served as an accelerator in some markets," says Christophe Tallec, general director of Hello Tomorrow, a technology conference that launched out of Paris and focuses on deep tech innovation. "In digital health for instance, the virus is helping knock some barriers down and it has freed up access to a lot more data."

But beyond the current context, what deep tech is about essentially runs on a clock with an entirely different rhythm. "Deep tech is all about long-term trends," says Tallec. "It targets today the kinds of segments that will have tremendous economic weight and influence [over] our lives in the coming decade."



DeepTech VC Investment (€bn), 2015-2020

Source: europeanstartups.co, dealroom.co



Portion of graduates in science, technology, engineering and mathematics by country (%), 2018

Source: europeanstartups.co, dealroom.co

Four French deep tech startups to know

France is home to dozens of deep tech startups ranging across fields from AI to robotics, space tech quantum computing to biotech. Here are four names worth knowing:

EXOTEC: Founded in 2015, it has raised €100m to build intelligent robot fleets that operate in 3D to enhance warehouse automation.

KINEIS: Founded in 2018, it has raised €100m to launch IoT nano-satellites into orbit.

ALEDIA: Founded in 2011 as a spin off from French atomic energy agency CEA, it has raised €171m and achieved world-first breakthroughs in silicon chips that enhance microLED displays.

OWKIN: Founded in 2016, it has raised €68.2m and built a virtual lab — a portfolio of AI models and solutions — where pharma companies and academics can access the best models and datasets to accelerate medical research.

Sometimes, that means fundamental research 20 years in the making in a geek-only lab can translate into tomorrow's business goldmine. "In that respect, France's strong suit is undeniably its talent pool of technology and science super brains," says Tallec.

France ranked 7th in a 2018 global study of AI startup formation. Moreover, its engineering talent pool is deep and comparatively cheap compared to the now-comically overpriced Silicon Valley, thanks in part to tax incentives for innovative projects.

"We can keep our R&D and tech in France because we have good engineers who are far cheaper than the West Coast," says Pierre-François Thaler, chief executive of EcoVadis.

Talent is the first reason cited by Tony Fadell when he talks about why he left Silicon Valley and moved to Paris a few years ago to set up a deep tech fund called Future Shape. The inventor of the iPod, a former Apple executive and founder of smart home pioneer Nest, which he sold to Google for \$3.2bn (\in 2.6bn), Fadell is one of the famous names of tech that has helped draw attention to France.



THE CAPITAL CONNECTION

French startups have momentum, and are positioned in all the right areas, but the community still faces its share of challenges. It needs to further deepen its financing pool, and to catch up to much bigger markets for startup capital such as the UK and, farther ahead still, the US.

Financing for later-stage growth is a dominant worry.

"We have pretty good early-stage investors but for later stage, say €50m to €150m, it doesn't happen enough"

"What is missing is the next-stage companies, with five or 10 billion of revenue and at international scale," says Alan founder Jean-Charles Samuelian. "We have pretty good early-stage investors but for later stage, say €50m to €150m, it doesn't happen enough."

Access to funding from bigger, laterstage investors is important on several levels. Bigger funds can connect founders to a bigger network of other entrepreneurs and partners, to share notes with and cooperate. When you get big investors on board "you are joining a family, and that access to entrepreneurs can be helpful".

EcoVadis chief executive Pierre-François Thaler also notes the late-stage financing gap in terms of mergers and acquisitions. "What's missing in France is this M&A ecosystem," he says. "You can go quickly from Series A to Series B but then many companies look at M&A and the acquirers are still in the US. You tend to see companies going to million-dollar revenue and then having to turn to American companies." There were no French firms in the top 10 acquisitions by value at exit, according to Atomico's 2020 State of European Tech report, although there has been a positive trend of private equity-led buyouts and majority ownership transactions, as with Mirakl, EcoVadis, Contentsquare and Sendinblue.

There are also signs of protectionism that could limit startups' access to outside finance. In June, the government created a fund to invest in home-grown companies if they receive unsolicited approaches from foreign investors. The country faces a challenge in seeking international capital for its startups and remains suspicious of rival nations poaching its best and brightest.

IPO CHALLENGE

The IPO route could be stronger. While France reportedly wants to attract unicorns from across the continent to list their shares in Paris, the reality is that European tech flotations have been subdued of late, compared to the phenomenal procession of IPOs over the Atlantic.

There were no French companies appearing among the top 10 European IPOs of 2020, and Europe as a whole had a dud year, with only 16 tech flotations through to September, the lowest rate in over a decade.

Startups could benefit from a European 'NASDAQ' to give them greater capital access, according to Bpifrance's Paul-François Fournier.

"We are going to build stronger and stronger companies that need an exit strategy and, for some, going to NASDAQ is not going to be effective if they are not in the US market," he says. "It is one thing if one or two startups go to NASDAQ, but if we are creating 20 or 30 in Europe, it would be unfortunate not to find a European solution, therefore we are trying to push the debate on this."

"It is one thing if one or two startups go to NASDAQ, but if we are creating 20 or 30 in Europe, it would be unfortunate not to find a European solution"

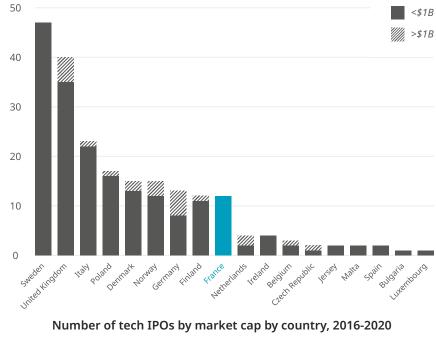
While European tech companies tend to list on the continent, hyperscalers do not — those valued at over \$1bn are five times more likely to list on a US exchange, according to Atomico.

The coming year looks set to be better both for Europe and France given bullish stock market trends and the amount of money looking for opportunities after a dire 2020. A number of French startups are rumoured to be considering an IPO, including OVH, Doctolib and Swile. European investors are also aligning with what is the biggest trend in startup financing: special-purpose acquisition companies or SPACs, shell companies that raise money through IPOs to buy other companies. Xavier Niel recently launched 2MX Organic, which will focus on organic food and sustainable consumer goods, although the jury is still out on whether SPACs will help the startup economy.

ATTRACTING TALENT

A second growth constraint is the talent pool, which is unbalanced. While France performs strongly in technical and engineering skills, it is weaker in branding and product marketing, as well as those individuals who have experienced this hyper scaling in the past and aren't faced with it for the first time, a chicken-and-egg conundrum for any emerging ecosystem.

"We lack people that have experience, huge scale and that are creative and have worked in a big company at the



Source: Atomico

beginning, like Snapchat employees, Instagram employees," says Yubo's Sacha Lazimi. "The engineering part is strong, but in creative, marketing and branding, we don't have that many people."

"The engineering part is strong, but in creative, marketing and branding, we don't have that many people"

He adds that one downside of the country's tight-knit and collaborative community is a hesitance to poach talent from domestic rivals, leading companies to hire more from foreign countries or remotely.

The permanent changes wrought by the pandemic could, of course, play into France's hands here. The forced transition to remote work has changed how some companies look at talent acquisition and opened up their geographic horizons.

"Recently we've started to see a massive influx of global tech talent, including experienced entrepreneurs leaving some of the more mature ecosystems like Silicon Valley, New York and London," says Roxanne Varza, the director of Paris startups campus Station F. "Today, the Station F community is one-third international, with the US, China, Morocco and South Korea amongst the best represented countries on campus."

A stronger talent pool is likely to accelerate the development of tech hubs across France too, away from the capital city.

"[Already] the growth of the French ecosystem has been in cities all across France: Bordeaux, Marseille, Lile, Nantes," says Bpifrance's Paul-François Fournier. "Out of 4,000 startups a year, 25% of them are not in Paris. Startups have access to talent from all over the country. This is one of the key assets of the French ecosystem: it will not remain on a single front of Paris".

"Out of 4,000 start-ups a year, 25% are not in Paris. Start-ups have access to talent from all over the country"



Four French tech hubs outside of Paris

BORDEAUX: This regional digital health cluster in the south west of France boasts several prominent e-Health startups including DESKi, which develops AI analysis of medical imagery, and Lucine, which creates digital solutions to relieve chronic pain. Many Paris-based startups have set up their "second office" here, including Back Market and ManoMano.

TOULOUSE: The Airbus BizLab, an aerospace accelerator, brings together startups and Airbus 'intrapreneurs' to explore innovations including satellite imaging, unmanned aerial vehicles and cybersecurity. It has since expanded to Hamburg, Bangalore and Madrid.

RENNES: This cybersecurity and military intelligence hotspot combines research facilities, multinationals, SMEs and the French military, with an estimated 4,200 ICT firms. Rennes is also the home of ComCyber, France's cyber defence command system.

NANTES: Launched in 2017, The University of Nantes' Disrupt Campus Nantes programme has fostered the startup ecosystem in the city, along with local network and NGO initiatives that offer resources to young entrepreneurs. Successes include La Cantine Numérique, which facilitates interaction between digital companies and students, and Atlanpole, the regional accelerator promoting startups in the deep tech field.

For additional notable hubs, have a look at the map on the next page.

oulouse

54.1%

Caen

0.4%

Rennes

Nante

Bordeaux

THE SIFT

Where are France's startups based?

France's startups are concentrated in Paris, but there are many ecosystems outside of the capital

Source: europeanstartups.co, dealroom.co. French companies that raised €1m+ as of Jan 2021



2020 highlights

- → €5.4bn raised in 2020 across the ecosystem
- → That's 620 VC deals
- → +7% growth in total raised vs 2019
- → VC money has grown x7 since 2014
- → 75% of investments focus on Paris and its region
- → IoT, healthtech and AI are the most common categories of French startups

2020 milestones

15

JANUARY: France broadens stockoptions and tech visa rules to make itself more attractive for international talent.

The FT120 startups programme is launched, featuring 120 laureates and extra handholding measures across France.

EcoVadis raises €165m.

MARCH: As the Covid-19 crisis hits, France unveils a €4.3bn emergency liquidity support plan dedicated to its startups, stepping in to address the cash and other concerns.

MAY: ContentSquare raises about €155m.

AUGUST: Voodoo raises money from Tencent for an undisclosed amount and becomes a unicorn at a valuation of €1.4bn.

SEPTEMBER: A stimulus package of €100bn is unveiled, including a €7bn direct commitment to digital. Mirakl raises €247m.

OCTOBER: Ynsect raises €190m.

DECEMBER: France exceeded €5bn in capital invested on an annualised basis for the first time in 2020. Paris became Europe's number two hub for startup investment, behind London.





The FT120

Every year, 120 French tech startups are selected to take part in the La French Tech FT120 support programme. This is the 2021 cohort, sorted by their year of foundation.

1999

MEILLEURTAUX: mortgage loan financing broker OVHCLOUD: webhosting, cloud and dedicated servers

2000

GEOSAT: land surveyor, underground network detection, 3D scanning, MMS

IVALUA: web-based spend management solutions

2001

HR PATH: human capital management technology VEEPEE: membersonly online shopping destination

2005

BELIEVE: digital distributor and label services provider for artists and labels BIOLOG-ID: identification technology to manage and trace sensitive health products EXOTEC: mobile robots to help in warehouse

management

2007

BLABLACAR: connecting drivers with empty seats to people looking for a ride ECOVADIS:

sustainability Rating and Performance Monitoring

FINALCAD: mobile apps and predictive analytics for construction LEMONWAY: payment service provider for marketplaces MICROPHYT: solutions to industrialise the production of unique microalgae-based bioactives OPENCLASSROOMS: online education

platform **SELECTRA:** online utility comparison for domestic and SME customers

SENDINBLUE: all-in-one marketing platform for growing businesses **TALENTSOFT:** HR software solutions for talent management and learning

2008

DEVIALET: high-end audio hardware manufacturer **ENTEROME:** developer of pharmaceuticals and diagnostics tests **EYEVENSYS:** platforms for long acting non-viral gene therapy for ocular diseases

JOBTEASER: jobs portal for students and fresh graduates WITHINGS: developer of digital health and wellness smart devices

2009

AB TASTY: helps marketers tailor UX and increase conversion rates

DEEZER: online music streaming service available on any device **EVANEOS:** tailor-made tours and travel with local travel agents

FLEXFUEL: environmentally friendly engine depollution technology MISTERTEMP': chain of

recruitment and temp agencies **MWM:** designs and

markets mobile apps and connected objects dedicated to music **OKWIND:** designs, manufactures and delivers smart and connected solar trackers

RECOMMERCE: trade in, refurbishment and resale of smartphones and electronics **REUNIWATT:** solutions for cloud observation and cloud cover forecasting

ROBOCATH: solutions for the treatment of

cardiovascular diseases **SCALITY:** allows businesses to easily manage their databases in the cloud **VESTIAIRE COLLECTIVE:** marketplace to buy and sell luxury, pre-owned fashion products **YOUNITED CREDIT:** Online platform to facilitate financial transactions between lenders and borrowers

2010

IADVIZE: conversational marketing platform connects customers with experts via realtime messaging PLATFORM.SH: automated, continuousdeployment highavailability cloud hosting solution

SIGFOX: service provider for IoT

2011

ALEDIA: develops and manufactures lightemitting diodes **CORWAVE:** implantable blood pumps based on a breakthrough membrane tech **HAPPN:** mobile dating app using real-time geolocation **HOPPEN:** multimedia services dedicated to the medical industry LEDGER: security and infrastructure solutions for cryptocurrencies and blockchain applications LYDIA: enables users to

get accounts, payment cards, loans, insurance and gift cards MIRAKL: online marketplace platform and dropship solution **S4M:** connect brands with consumers by bridging digital advertising and the real-world **QAPA:** connects job seekers and recruiters with a matching algorithm **YNSECT:** farms insects to make natural ingredients for aquaculture and pet nutrition

2012

AFYREN: microbiology and bioprocess engineering **AMARISOFT:** provides LTE and NR software that runs on standard hardware **CONTENTSQUARE:** helps brands create customer experiences on web, mobile and apps **COOPTALIS:** assists companies with talent acquisitions and candidates with their mobility projects **FLYING WHALES:** environmentally friendly cargo transport aircraft LUMAPPS: social intranet for collaborative suites MANO MANO: online marketplace for DIY, home improvement and gardening products

UBITRANSPORT:

intelligent transportation systems for public passenger sector **WORLDIA:** online travel agency

2013

AKENEO: Product Experience Management (PXM) solutions ALL MOL: ticketing network BIOSERENITY: smart

clothing that monitors the health of people with epilepsy **CYBELANGEL:**

intelligence solution designed to detect data leaks on the internet **DOCTOLIB:** online booking for medical appointments **INOTREM:** develops immunotherapies for the treatment of inflammatory diseases HAPPYTAL: digital platform for patients and services in health institutions **HEETCH:** ride-sharing app targeting late night transportation seekers SHIFT TECHNOLOGY: fraud-detection technology for the insurance industry **TISSIUM:** biodegradable sealants and adhesives for wound closure **ULTRA PREMIUM**

DIRECT: food brand for dogs and cats, distributed online **VADE SECURE:** security features against sophisticated email scams **VOODOO:** casual games developer for mobile **WYND:** develops unified commerce platforms

2014

AGRICONOMIE: e-commerce website for all farming needs BACK MARKET: online marketplace dedicated to refurbished products **CITYSCOOT:** electric scooters rental **DNA SCRIPT:** synthetic DNA through natural enzvmes **DREEM:** headband to improve sleep **ENYO PHARMA:** clinical stage biotech **MADBOX:** mobile games **MISTERFLY:** online

travel agency MOLOTOV: TV streaming service ORNIKAR: online driving school

2015

CERTIDEAL:

marketplace for second-hand electronic **EKWATEUR:** renewable electricity and gas provider FRICHTI: home-made food production and delivery GOJOB: digital temporary work operations **ILEK:** electricity supplier IMCHECK **THERAPEUTICS:** immunotherapy for cancers and

autoimmune disease **KERANOVA:** instruments for ophthalmic surgery **KLAXOON:** facilitates interactivity within a group **OCTOBER:** SME lending platform **PAPERNEST:** contract management platform to simplify administration **PAYFIT:** allows SMEs to easily and quickly pay their employees shapow: high-end computer accessible from any online device TALENT.IO: recruitment platform for tech profiles **VIRTUO:** digital car rental service **YUBO:** social platform for Generation Z

2016

ALAN: digital health insurance platform **DYNACURE:** treatments for patients affected by serious orphan disorders **INNOVAFEED:** produces insect-based protein for the feed industry JOONE: hygiene and care products **KOVERS:** ethical health insurance LUKO: smart device to improve home safety and reduce electricity hills MEDADOM: videoconsults with doctors through web apps and tele-connected kiosks

MEERO: matches

professional

photographers with clients PERFECTSTAY: B2B tour operator **SPARINGVISION:** emerging therapy against central vision loss SPENDESK: smart spend management software for finance teams and employees **SWILE:** digital solutions for employee rewards and benefits OARE: on-demand, online-to-offline virtual medical practice **QONTO:** online banking services for small businesses TRUSK: last mile delivery marketplace

2017

BRUT: creates short-form video content

IGYXOS: pharmaceutical products for human reproductive health PHARMEDISTORE: B2B marketplace for pharmacists

<mark>201</mark>8

ALMA: guaranteed and simple split payment IZIWORK: interim jobs platform KINEIS: IoT network connectivity

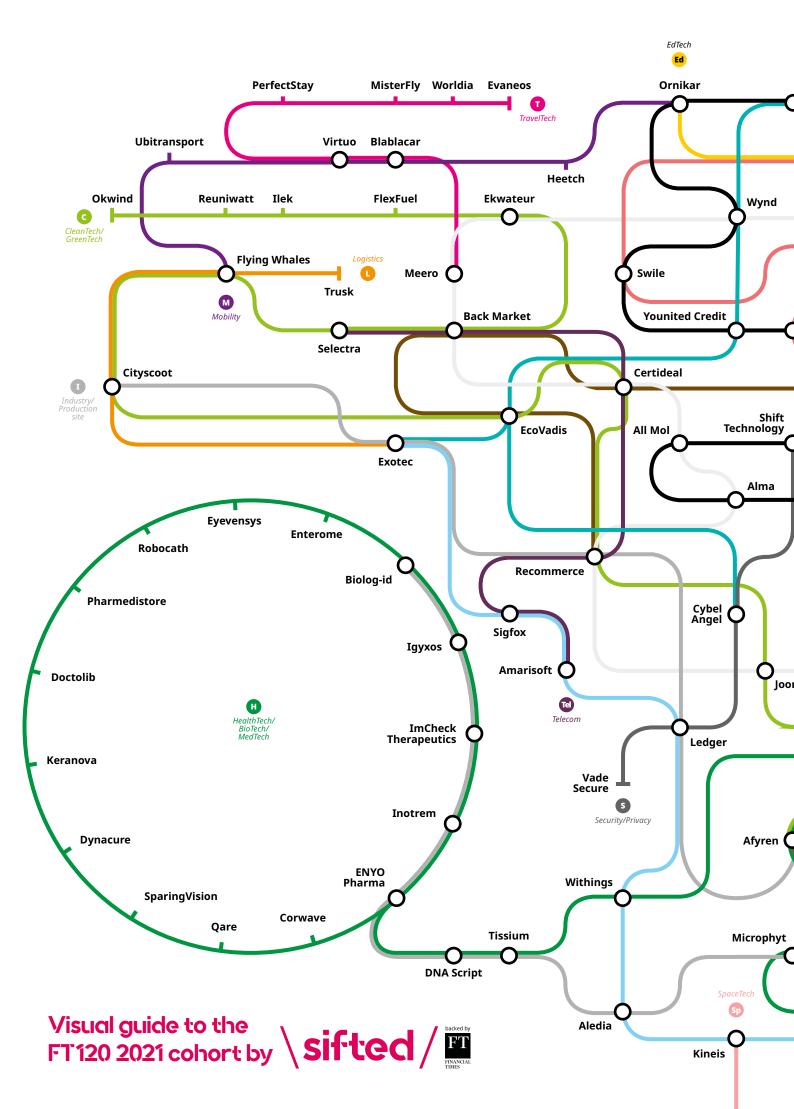
2019

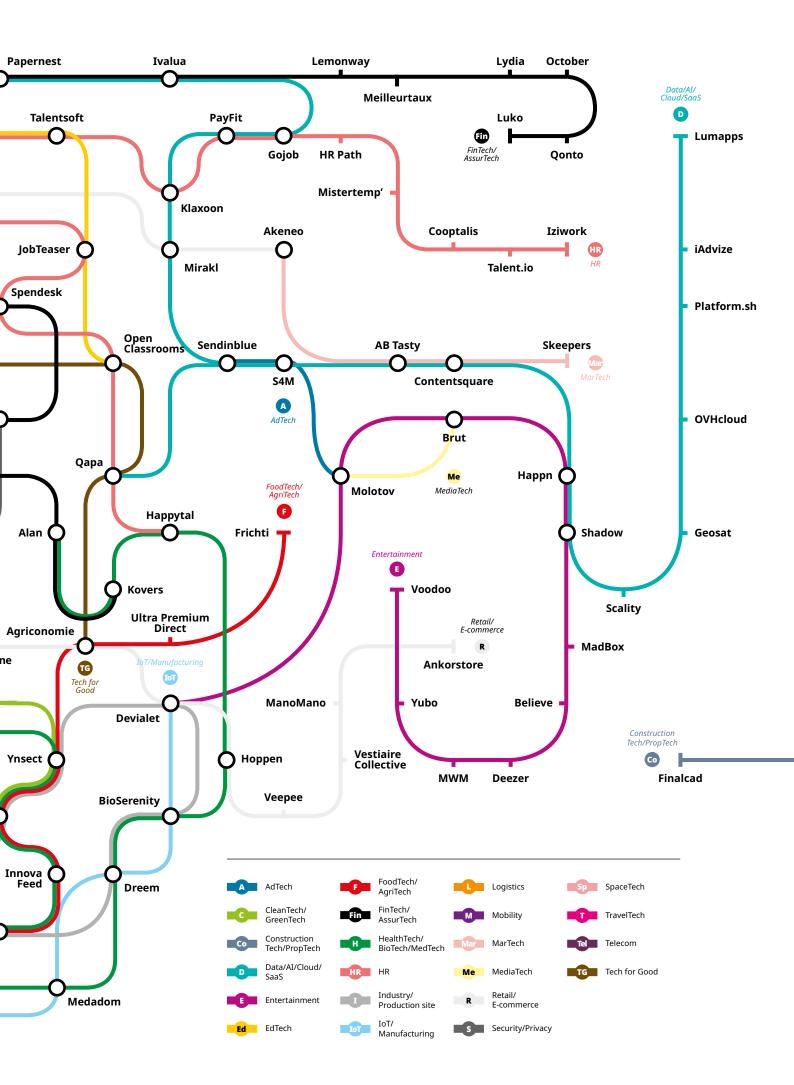
ANKORSTORE: online B2B marketplace connects independent shops and specialist brands with neighbourhood retailers SKEEPERS: collection and publication of customer reviews



The FT120 in numbers

- → 37,556 people are employed by companies from the FT120 listing
- → 30% of those employees are based outside France
- → And 62% are running fully on remote work
- → FT120 companies plan to hire 10,000 people in 2021
- → 4 in 10 of all the FT120 current employees are female
- → But 7 out of 10 executive committee members are male
- → 70% have some presence or office abroad
- → US, Germany, UK and Spain are top 4 foreign markets
- → 38% of sales generated away from home on average





The next battle

An interview with Cédric O, minister of state for the digital transition and electronic communications

we're reaping the fruits now," says Cédric O, the French junior minister for digital affairs. "There are a few things we have to unlock still, but the underlying trend is really good. There are no deal-breaker obstacles."

Soon after Macron was elected in May 2017, he started putting forward ambitious targets to make France a 'nation of unicorns', while digital minister Cédric O wants his country to bounce back from its failure to produce its own Ubers and Airbnbs by positioning itself to, as he says, win the next technology battle.

"We shouldn't be stuck on competing in the previous battle, we should aim



instead for the next one," says O. "Yes, there are areas where we're lagging behind, but in others we're on par with the US and China."

Where Macron really differentiates from previous French leaders has perhaps been in his pragmatic approach; he has an ability to turn the page on previous tech debacles and missed opportunities and look instead to what lies ahead.

Predecessors focused on how France, like most of its European neighbours, fell behind with the emergence of Google, Facebook and the data economy. Instead, Macron has made it clear that he's keen to not let history repeat itself. His view is that technology isn't just about innovation or even economic growth, but also about the sovereignty of nations. One of his main concerns is that France and Europe could once more be left behind, consuming technology that is designed and built elsewhere — and giving up their data in the process.

With that in mind, he has announced plan after plan, each aimed at federating talent, money and efforts around a key theme: artificial intelligence, the development of quantum technologies and cybersecurity.

"We have a president who is willing to commit himself to technology, because tech is at the heart of international discussions today and because otherwise Europe faces the risk of being kicked out of history," says O. "He's fully aware we have to invest more and accelerate."

When Covid-19 hit France in early 2020, the government quickly signalled that it wasn't going to sit idly by and watch startups struggle.

After years of pumping state money into growing the startup ecosystem, France rushed to pour in more and create a pipeline of support for entrepreneurs.

Mid-March, less than 24 hours after Macron announced school closures and a host of other measures that would lead to a full lockdown, O was on a live Facebook event with founders, answering questions and promising a boost from the government. Days later, the government unveiled a \notin 4.3bn liquidity support plan dedicated to its startups, stepping in to address the cash concerns brought about by the coronavirus crisis, as well as to propose a furlough scheme and other exceptional measures.

"The power of big tech in the US was built during the 2008 financial crisis," says digital minister O. Now, there's Covid-19 and France wants "to use the stimulus package to build the French economy in the long term, to make it more competitive in two priority sectors: environment and digital".

The entrepreneurial state

The French government has always sought to guide its economy and nurture strategic industries. Emmanuel Macron's presidency has upped the game when it comes to applying these principles to its digital sectors.

What France has achieved

- → Tech has been a trans-partisan priority for over a decade, and it's paying off
- → France has turned the page on the previous decade's tech debacles and is looking ahead
- → Macron's commitment to technology is an economic driver and sovereignty weapon
- → R&D tax credits have been maintained, helping attract international research investment
- → Administrative reforms, dedicated schemes like the French Tech Visa and a revised stock options regime, are supporting startups
- → Hard cash has been dedicated to startups to support Macron's vision
- → Visibility and handholding for founders through the La French Tech network
- → Generous Covid-19 bailouts have helped to keep the ecosystem on course

What's next?

- → Entrepreneurs want more simplification and further reform
- → Calls for change to France's procurement strategy to favour local startups
- → Intention to make more of France's €100bn stimulus package accessible to startups
- → A clearer regulatory line for tech in Europe
- → Deployment of government's digital budget, including for AI, quantum, cybersecurity and deep tech more broadly

France's Covid-19 relief for startups

France was one of Europe's more generous countries when it came to shielding its startups from the economic fallout from Covid-19. Here is what it offered:

- A €4.3bn injection for startups aimed specifically at addressing cash concerns, including a short-term refinancing scheme (€160m), the early payment of some tax credits (€1.5bn), the accelerated payment of alreadyplanned investments in the sector (€150m) and guarantees over cash flow costs (€2bn)
- → Social charges and tax payments were pushed back
- → Mediators on offer to help recover funds from customers
- → State-backed credit mediators ready to intervene for companies that couldn't make debt payments or loan insurance fees to their bank
- → Government loans specifically adapted for startups and directly on offer via state-backed investor Bpifrance, and backing from Bpifrance as a guarantor to get a loan from a bank
- → Rent, electricity, gas and water bills deferred or cancelled
- → Temporary unemployment measures

rance's government is famous for its economic interventionism — dirigiste, deriving from the French 'to direct', became an economics textbook shorthand for state-led development models — but it took its time to apply those ideas to its own startup ecosystem.

"When Emmanuel Macron came to power, he said, 'we're late and need to invest in tech ecosystems or we will lose the better part of the century and all the value will go to the US or Asia'," says Thibaud Hug de Larauze, cofounder of Back Market.

And while Macron wasn't the first to pump money into startups and facilitate entrepreneurship — measures including tax breaks aimed specifically at innovation have been around for several presidencies — startups and founders view the younger, tech-savvy president as more engaged in their world than his predecessors.



Back Market

THE ELEVATOR PITCH: Why buy new when you can buy refurbished MARKET: Consumer tech TOTAL FUNDING: €158m YEAR FOUNDED: 2014 USERS: 1,000+ verified sellers FUN FACT: Used laptops and Playstations

were best sellers during Covid-19

PUT YOUR MONEY WHERE YOUR MOUTH IS

In 2020, France unveiled a stimulus package of €100bn, pointing to industrial and technological development and ecological transition as major targets. The budget included a €7bn commitment to digital, with artificial intelligence, cybersecurity and quantum computing as central priorities for public spending.

Of that, €3.7bn will go to strengthening startup financing, in particular through Bpifrance, the French national investment bank created in 2012 by former president Francois Hollande that has brought patient capital to the French market.

It's not just Covid that's accelerating financing; there has been hard cash on the table for a while to support France's vision. Most notably, Bpifrance has invested over €20bn across sectors including digital, life sciences, energy transition, medtech, fintech and agritech. Its importance is clear when you consider that Bpifrance contributes 18% to 19% of France's total startup financing either directly or indirectly through contributions to investment funds and other schemes.

Bpifrance takes between 4% to 5% return on investment, compared to the 10% or more typical for regular investors. While 50% state-owned, it is staffed by private sector experts, ensuring more commercially astute choices.

Executive director Paul-François Fournier positions the bank in the context of a broader shift in innovation from large corporates, who once dominated the landscape, to startups. "The digital world changed the paradigm," he says. "In this era, where everything is connected, a small group is more agile to manage the innovation process."

Bpifrance built its strategy on supporting startups through study tours to Silicon Valley and Israel and now funds around 2,000 startups a year, up from 800 in 2013. It is backing critical startup communities essential to France's comparative strengths like AI, which it pumped €368m into in 2019.

The state-backed financier has access to enormous pools of capital — in early 2020, it raised €4.2bn from investors including Abu Dhabi's Mubadala Investment Company along with large international and French institutional investors such as Covea and Axa, as well as family offices such as Orange. Through this fund, Bpifrance plans to invest in large and mid-sized companies in France's CAC and SBF indexes.

The government has also created its own financial war chest. In September 2019, President Macron secured a pledge from institutional investors to direct €6bn of capital into late-stage venture funds and listed tech equities. These funds will participate in growth rounds for tech companies.

Support programmes are also in place to make France a scale-up nation. La French Tech's Next40/120 programme supports 120 startups a year through measures including enhanced access to government ministries, greater visibility through access to official French delegations overseas and help in connecting with public sector opportunities. Founders get handholding from a group of more than 50 dedicated correspondents from government agencies, ministries and public services.

REFORMS

There have also been legal and regulatory reforms. Key changes in recent years include eliminating a wealth tax outside of property, introducing a flat tax on dividends, simplifying the process of winding down businesses and introducing a special tech visa for non-EU startups, founders and investors. "The French government has created a more pro-business environment and worked hard to simplify the visa process for foreigners," says Station F's Roxanne Varza. "While the visa is easier to obtain, arriving in a foreign country is never easy. This is perhaps where more can be done to improve the experience."

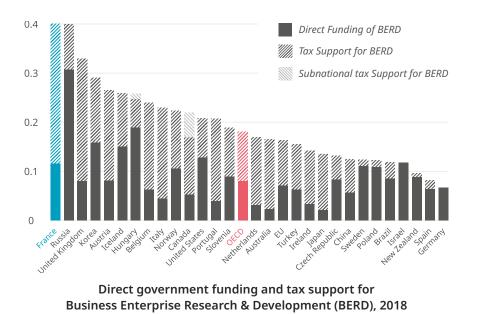
Meanwhile, Macron has maintained the R&D tax credits that have proved extremely popular with entrepreneurs over the years and even helped to attract research investment from international giants, convincing companies from Huawei to Facebook to set up labs in France. Tax credits cover around a third of the cost of subcontracting with research institutes and can lower the cost of hiring PhDs. "It is important to maintain these rates, they are working well," says Ÿnsect cofounder Antoine Hubert.

There is an 80% discount on taxes for engineers, according to Yubo's Lazimi. France has the highest direct government funding and tax support for business R&D of all OECD countries and the generosity of its incentives increased significantly between 2000 and 2019.

The French Tech Visa

- → A simplified, fast-track scheme for non-EU startup employees, founders and investors to obtain a residence permit for France
- → Aims to encourage tech talent to join, launch or invest in a French startup
- \rightarrow Valid for four years
- \rightarrow No diploma requirements
- → Costs a few hundred euros in administrative fees
- → As of 2020, eligible companies don't have to be headquartered in France

In 2020, France changed its stockoptions rules to expand the existing fiscally advantageous scheme (socalled "BPSCE") to foreign businesses with employees based in France. The change came as entrepreneurs across Europe, in a bid to help startups attract talent on the global stage, rallied behind the "Not Optional" campaign for a new pan-European stock options



As a percentage of GDP. Source: OECD R&D Tax Incentive Database

framework. For startups, attractive stock options schemes are often a way to compete with the more generous salaries of bigger companies to hire the best talent.

Regulatory tweaks have also helped stimulate specific segments, such as a 2018 law that allowed medical diagnosis and treatment to be provided online, helping the digital health sector.

Even regulations that appear reminiscent of old-school European labour markets can have entrepreneurial effects. For example, France's unemployment benefit payouts give 80% of your salary for two years, which can be released as a lump sum if you wish to start a company, according to EcoVadis chief executive Thaler.

Macron's labour market reforms, a central plank of his presidency, have helped to address some of the rigidities that previously held startups back, adds Alan's Samuelian.

"The direction is really good, although we could simplify more," he says. "One example is the three months notice period to leave a company; why should



Alan

THE ELEVATOR PITCH: The next generation of health care

MARKET: Healthtech

TOTAL FUNDING: €125m

YEAR FOUNDED: 2016

USERS: 140,000+

NORTH STAR METRIC: members delight, measured by NPS (73 for individuals, 78 for companies)

FUN FACT: Alan's mystery animal mascot has prompted speculation online about what kind of creature it really is you have to keep employees that want to leave? If they want to go, shortening that period can help you replace them more quickly and move forward."

EUROPEAN RULES

Of course, the regulatory context is also a product of wider changes in the EU, and the relationship of French entrepreneurs with the European regulatory environment has consistently been mixed.

The EU-wide healthcare passport, for instance, helped Alan to build its business far more efficiently than if it were required to set up a license to operate in each country, says founder Samuelian. But other areas like taxing digital giants and data privacy have received criticism.



OVHcloud

THE ELEVATOR PITCH: European-born cloud hosting, to rival AWS MARKET: Cloud TOTAL FUNDING: €250m DEBT FUNDING: €400m YEAR FOUNDED: 1999 FUN FACT: Measured by surface area, OVH owns the world's largest data centre

Michel Paulin, chief executive of OVHcloud, says that more clarity is needed on pan-European cloud rules. In the past, there has been controversy over a French health data centre set up to serve hospitals, clinics and healthcare sectors, because the data itself was stored in the Netherlands, not France, and, due to Microsoft's involvement, a lot of data was transitioning to the US.

"There was a bit of a black box in terms of how the data was stored. It illustrates how we should have regulation at a European level and on top of that, a national level for certain domains," says Paulin. A landmark ruling in July 2020, Schrems II, put an end to the EU-US Data Privacy Shield, which allowed companies to outsource data processing from the EU to the US.

PROCUREMENT IS THE NEXT PIECE OF THE PUZZLE

Expectations from entrepreneurs visà-vis Macron are evolving. There's little debate over the role of government investment in creating a buzzing ecosystem and attracting investors from all over the world. But now, the view from founders is that what the ecosystem needs most isn't necessarily more state funding. Expectations are focused instead on the idea that more business and contracts should be handed out to French and EU startups.

A change in France's procurement strategy, to favor local startups a little more and global technology providers like Microsoft or Google a little less, is something founder grouping France Digitale, among others, is calling for.

"It's important to get not just funding money, but also contracts," says Frédéric Mazzella, cofounder of BlaBlaCar and co-president of France Digitale. "That's money that boosts startups in more than one way, by helping them build a better product too — France needs to buy more European solutions."

This is something that Macron has promised to address. Part of the answer lies in the fact that the digital sector spans across industries. With that in mind, the intention is to make a lot of France's €100bn stimulus package far more than just the €7bn dedicated to digital — accessible to startups.

The French touch

French innovation carries its own distinct signature, from food and wine-tech to the AI pioneers drawing from the country's long history of excellence in fundamental mathematics. But the French touch is also about startups tackling some of France's deepest challenges, such as educational inequality.

What France has achieved

- → A distinctly French innovation DNA is emerging, one that is more consultative and collaborative than Silicon Valley's disruption at any cost approach
- → Turning unique maths credentials into tech opportunities
- → Focused investment plans on key areas, including AI, cybersecurity and quantum computing
- → Seizing on food and the environment as growth engines for French innovation
- → Attracting global talent and interest from corporates thanks to the 'tech for good' movement

What's next?

- → Bringing talent closer together through specialised clusters that hold their own on the global stage
- → Using more innovation and tech to overcome existing inequalities in French society
- Create additional opportunities for underprivileged and underrepresented talent



"A startup never comes out of thin air," says Nicolas Brien, head of France Digitale, Europe's largest startup advocacy group. "It relies on longstanding forces in the economic environment."

That's true for France too: the country's startup community reflects, and is responding to, distinctive features of the French economy and wider society. The country's maths and engineering prowess, built over decades of sustained investment and focus from its leading academic institutions, provides the know-how driving its success in areas like AI, deep tech and clean-tech.

Culturally, French business is more consultative and collaborative, making it slower paced than Silicon Valley, but with benefits in terms of partnershipbased business models and idea sharing.

CREATIVE COMMUNITY

French startup culture is less aggressive and combative than in the US. Silicon Valley mottos, from Facebook's 'move fast and break things' to Uber's 'always be hustling', colour a world view centred on overturning established industries and powering ahead with new ideas without the need for a green light from the government. While some of this disruption ideology percolates into the French startup scene, many of the most successful cases are working with, rather than against, wider governance. Doctolib, for instance, crafted an innovation model that is consultative, helping doctors improve their ways of working rather than overturning the entire healthcare model.



Doctolib

THE ELEVATOR PITCH: A lot of what your doctor does can be done online MARKET: Healthtech TOTAL FUNDING: €237m YEAR FOUNDED: 2013 USERS: 42m patients and 140,000 practitioners NORTH STAR METRIC: Video Consultations — they hit 8m in 2020 FUN FACT: Doctors are actually the paying subscribers, patients can use the platform for free

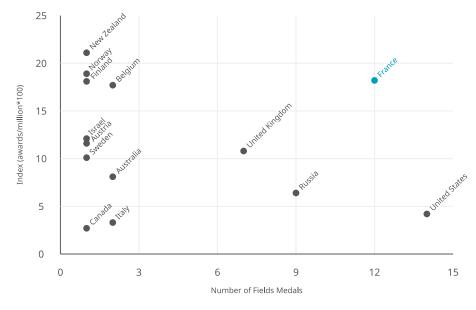
"Something very specific to our innovation model is that we partner with doctors, so we spend a lot of time in doctor practices, co-creating our product," says Agnès Bazin, Doctolib's chief development officer. "We don't want to do 'tech for tech's sake' or crazy innovation, we just want to provide useful technology for them to be able to focus more on the human aspect."

There is lots of peer sharing and idea exchange too. France's consumer tech community has its own Slack channel to share best practices and mutual aid, says Yubo founder Sacha Lazimi. "That is how we scale companies, by listening to advice from other founders that have done the same," he says.

A NATION OF MATHEMATICIANS

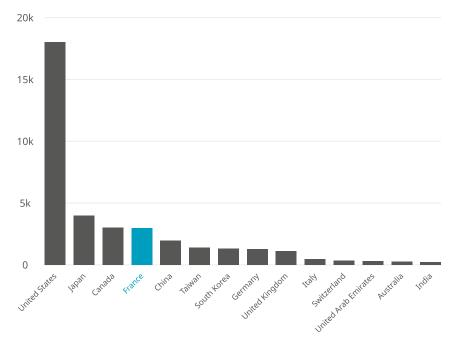
While the French talent pool is still maturing, it is world leading in the domain of mathematics and engineering. France has among the highest number of Fields Medal winners — the Nobel Prize equivalent for mathematics, awarded to young researchers for outstanding achievement — on a per capita basis.

Paris-Saclay University is on par with Princeton as the world's best-rated mathematics school, according to



Fields Medals per capita, 1936-2018

Source: International Mathematical Union and United Nations Population Division



Total volume of published AI patents, 2015-2018 Source: AI Index

the Academic Ranking of World Universities. French institutions Pierre and Marie Curie University, part of the Sorbonne ensemble, and PSL University Paris are also featured in the top 10.

This institutional heft, and the skilled graduates it has created, are critical to the country's edge in deep tech, artificial intelligence and clean-tech.

Further demonstrating its technical prowess, France ranks fourth globally by total volume of AI patents registered between 2015 and 2018 (see chart). The number of AI-related French startups grew to 432 in 2019, from 180 back in 2016.

The country is also favoured by US titans building their European AI presence — Cisco and Facebook both set up local AI operations in Paris. France's technical talent also positions it favourably in the transformative but early-stage field of quantum computing, with Paris ranking second in Europe for startup density in quantum.

In early 2020, the government issued a national quantum plan to bring together its heavy-hitting academic institutions: CEA, INRIA and the French National Centre for Scientific Research (CNRS) with the state's financial firepower via Bpifrance and the General Secretariat for Investment (SGPI).

France Digitale's Nicolas Brien believes the country missed the tech boom of the 1980s and 1990s because academic institutions focused on fundamental maths at a time when UK and US universities shifted resources to applied maths and computer science. While this left France on the sidelines of the digital revolution so far, "we might have a revenge on history now, because in AI, applied maths is not enough. AI is about huge data sets trained by powerful algorithms," he

Four French quantum computing startups to know

ALICE&BOB: Builds quantum computers with proprietary selfcorrecting technology to help researchers solve some of the hardest problems across industries 2020 | Raised €3m

QUANTFI: A team of PhD researchers builds quantum computer algorithms for the financial services industry 2019 | Bootstrapped

PASQAL: Builds highly scalable quantum processors with huge calculation power to solve complex problems across industries 2019 | Raised €7.3m

CRYPTONEXT SECURITY: Uses next generation cryptographic standards to make technology infrastructure resilient to quantum computers 2019 | Undisclosed funding

says. "We have the knowledge to create and implement powerful algorithms because of this long-standing expertise in fundamental maths'."

"France has top-notch mathematicians and AI experts, but it also has world-renowned medical experts and scientists more broadly," says Christophe Tallec, general director of the Hello Tomorrow technology conference, which hosts several thousand entrepreneurs, executives and scientists at its events each year to talk about deep tech and breakthrough innovation.

"In fact, what we've seen over the years is that France is really good at a lot of things," says Tallec. "The problem is it's not really extraordinarily excellent at one of those things. What we need going forward is to bring talent more closely together in specialised clusters that can really stand out on the global stage — that's something that's starting to emerge in some areas."

Getting more out of France's assets, to position the country at the forefront of futuristic breakthrough technologies, is something Emmanuel Macron's government has been pushing for. Macron designated AI, cybersecurity and quantum computing as primary areas of focus for France's future.

"These segments have in common the massive economic weight that they will represent in the coming decade, and they're all key to sovereignty concerns," says Hello Tomorrow's Tallec.

Bpifrance and Kima Ventures are major venture backers of the deep tech sector, with early stage venture capital funds also setting up shop in recent years, for example Quantonation, launched in 2018 to focus on 'deep physics'. There has been a 20% to 30% annual increase in the number of deep tech startups in France.

Hello Tomorrow's Tallec says that this trend is set to continue. Covid-19, for one, is boosting interest in digital health. But beyond the current context, there's also unexplored potential in agriculture that can be tapped if more innovation makes it into that space and well-established industrials work hand in hand with deep tech startups.

THE GREEN TRANSITION

Food and the environment are a second growth engine for French innovation, built on the country's renowned food sector as well as the cultural and social premium placed on the environment. France's gastronomical prowess is one of the reasons behind the country's tasty food and wine-tech boom.

"I don't think we could have been from any other country other than France," says Antoine Hubert at Ÿnsect, which, like another player Jimini, is creating edible insect products for the consumer snack market.

"[France] has a mix of different factors," he says. "It is one of the largest food and agro-producing countries in the world, so we had very strong players from the French farmer co-ops to food processors like Danone, Food Sodexo and so on — and we have Michelin star chefs, so the food chain is one of the most well-known, advanced and sophisticated."

France has also produced a crop of agri-tech pioneers like Naïo Technologies, which makes robots for farmers, Agricool, a vertical agriculture company, and Sencrop, a connected farming ag-weather startup. The



Ynsect

THE ELEVATOR PITCH: Growing bugs as food, guaranteeing food security for everyone MARKET: Foodtech TOTAL FUNDING: €360m YEAR FOUNDED: 2011 NORTH STAR METRIC: Number of vertical farms FUN FACT: Ÿnsect have built the world's biggest automated bug farm software-climate nexus also birthed Sterblue, a Y Combinator graduate, which builds software to help drones inspect energy assets like wind turbines.

Equally on-brand are the agri-tech players emerging in Bordeaux, the wine region in south-west France. It is home to a bustling community of wine-tech startups, from drones to marketplaces and crowd-funding to product tracking.

More broadly, France's sustainability agenda has produced a platform for innovation in areas like ESG performance software. The French government was an early mover in creating pressure for corporations to better manage their sustainability, introducing mandatory extra financial ESG reporting requirements in 2001 and a 2015 law requiring investors to report performance, which prefigured the EU's sustainable financing framework and became a benchmark for other European nations.

One of the global brand names in sustainability software, EcoVadis, was born in 2007 out of the confluence of governance reform and the demand from corporates for tools to help them raise their game.

There is also heightened concern about sustainability among the French public and the government has taken a strong policy approach in response. Former environment minister Nicolas Hulot spearheaded reforms that included a commitment to end the sale of new gas and diesel-powered cars by 2040 and an official pledge to achieve carbon-neutrality by 2050.

France's government has further committed to achieving 100% plastics recycling by 2025 and ending oil and gas production by 2040, and has issued additional aspirational targets, such as making Paris a capital of 'green finance'. It was the first country in the world to ban food waste and a new circular economy law will be rolled out in February to incentivise product reuse and prohibit single-use materials.

The sustainability and circular economy agenda has provided momentum to support a range of startups, from BlaBlaCar, which is battling excess pollution and congestion, to Back Market, a refurbished electronics retailer. And France has produced its share of food waste apps too, including OptiMiam and Graapz.

Pierre-François Thaler, chief executive of EcoVadis, says that thanks to Europe's vibrant 'tech for good' ecosystem he sees a growing number of North American engineers who now want to work for European companies, including in France, and that the French diaspora is more keen to come home, partly to deploy their talents solving social and environmental problems.

Tech for good is also helping to attract corporates to the startup world.

"There's an increasing trend we're noticing in terms of collaborations between startups and corporates around impact projects and solutions," says Viva Technology's Julie Ranty. "It's a typical case where collaboration will help startups scale much faster."

INCLUSION, FAIRNESS AND DREAMS OF THE REPUBLIQUE

Equality was one of the three pillars of the French revolution, and can still, along with liberty and fraternity, be found emblazoned on everything from coins to parking fines. But the country is struggling to realise its aspirations, providing a stimulus to startups.

Industrial unrest, racial tensions, a perceived gap between Paris and the rest of the nation, and a growing concern about women's equality and safety are some of the social issues rising in prominence in recent years, and have been further underscored by the pandemic.

France has made moves to fix these issues within its own cultural approach, which is very different from what goes on in the US or other parts of the

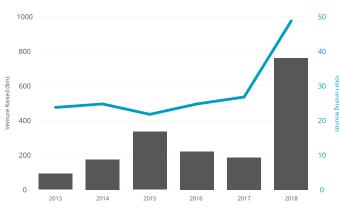
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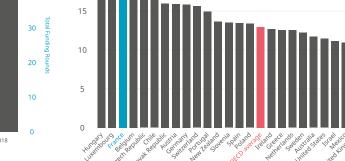
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world. "We don't talk about diversity in the same way in Europe and the US," says Roxanne Varza, Station F's director. "For example, in Europe, it is not legal to collect census data in the same way and we don't talk about race — instead we talk about socioeconomic or cultural background."

As a prime example, the French education system is highly unequal, and seriously failing many students. Around 40% fail to achieve the baccalauréat, the foundational academic qualification. France also has the highest proportion of low achievers in maths in the Erasmus+ network of countries, at 40%, on par with Turkey, a country with nearly half of its per capita income. It's been determined that, in France, social background is more closely tied to academic success than any other factor (see chart).

The government is taking some steps to address the issue. President Macron has vowed to abolish the elitist Ecole Nationale d'Administration (ENA), and pledged to overhaul the baccalauréat and introduce more specialisation in computer science and coding. Educational reforms include reducing class size, changing the starting age





Variation in science performance (PISA scores) explained by student's socio-economic status, 2015

cleantech startups, 2013-2018 Source: Cleantech.com

Venture investment into Paris region

La Grande Ecole du Numérique

- → An estimated 1.3m people in France are not active in education, employment or training (NEET), with 100,000 school dropouts every year
- → There will be an estimated 200,000 vacant positions in the digital sector by 2021-22
- → Launched by the French government in 2015, Grande École du Numérique provides digital training, especially for disadvantaged students
- → By 2018, GEN reached 750 certified training courses across the country

of compulsory education from six to three and enhancing skills beyond the national curriculum. The government is also investing €15bn in upskilling via the Plan Investissement Compétences and working with Grande École du Numérique, a digital training scheme set up by the French government in 2015, and the French Tech Tremplin (or "Springboard") to cultivate talent from diverse backgrounds.

French startups and entrepreneurs are also trying to tackle education inequality. Most famous is École 42, a free coding school in Paris created by business angel Xavier Niel. Competition for places is fierce and merit-based, with 1,000 students a year accepted from an estimated 40,000 applications. Its mode of delivery is unique: École 42 eschews teachers, instead relying on project work and peer-learning, an approach tied to a 21st century skills agenda. Despite scepticism in its

French Tech Tremplin

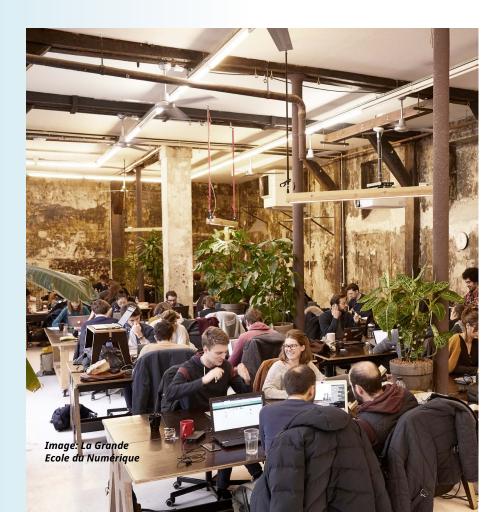
- → Helps founders overcome socio-economic barriers to become tech entrepreneurs
- → The programme is backed by the government and run by La French Tech
- → Includes a financial boost of as much as €42,000, access to desk space, experts and mentors
- → About 345 startups have participated so far

early days, the school has reportedly achieved a 100% employment rate among graduates.

Improving life outcomes for disadvantaged children also requires challenging the preconceptions of French corporates, says Samia Ghozlane, director of la Grande École du Numérique, adding that they are still too wedded to conventional diplomas from prestigious business and engineering schools. Ghozlane is working with corporates to highlight the merits of competencies over paper qualifications. "French companies have to shift their way of looking [for talent] and open themselves up to diverse backgrounds," she says.

PROMOTING FIGHTERS

The entrepreneurial ecosystem also bears the signs of inequality. France is not alone here, with all of Europe struggling. Last year, 85% of startup funding went to entirely male founding teams, and people from less privileged backgrounds are less likely to become



entrepreneurs. Black founders made up only 1% of the 1,200 entrepreneurs surveyed last year, and 2% of this year's respondents in Atomico's European ecosystem report. Black founders received just 0.24% of venture capital in the UK in the last decade.

But France has some cause for optimism. It is one of the world's best-performing nations in female authorship of AI papers, for instance, and there is "great awareness about the need for more diversity within the ecosystem — gender diversity has been a central topic and a lot of progress has been made," says Varza. "In 2019, almost all French VC funds signed an agreement to increase the amount of funding allocated to femalefounded companies by 2025."

But only 10% of startups are founded by women. One incubator, WILLA, founded in 2005, has accelerated over 550 startups founded or cofounded by women. French telecom giant Orange has also formed a women founder accelerator to connect innovative ideas with Orange's market lines and partner network.

To tackle the imbalance in entrepreneurship between the affluent and the disadvantaged, Station F created a "Fighters" scheme focused on supporting disadvantaged founders.

"There are still far too few initiatives to support underprivileged and underrepresented founders, but this problem is not unique to France, it is a problem that is present throughout the global ecosystem," says Varza. "Funds are beginning to diversify their teams, which will contribute to diversifying their networks and funding practices as well.

"At Station F, we are doubling the size of the Fighters Program for underprivileged founders to work with even more teams. We believe our Fighters have the hacker mindset that entrepreneurs need to succeed, and we hold the Fighters to the exact same standards as all our other startups on campus."

"Fighter" startups worth knowing

Here are three startups that came out of Station F's Fighters programme for founders from underprivileged backgrounds:

DIGITALL Founded by Tally Fofana



DigiTall makes anti-theft technology for cars that works through a connected device controlled by a mobile application, which allows car owners to switch their anti-theft device on and off remotely. Founder Fofana is himself a former professional car thief with 15 years of experience.

LE FALAF' Founded by Khadija Salomon

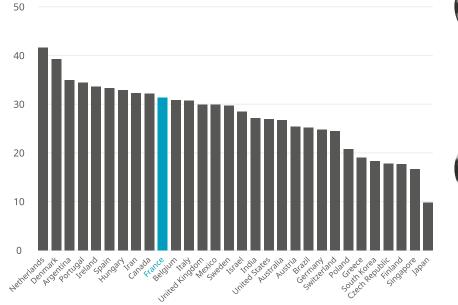
A social enterprise selling takeaway 'brunch boxes', as well as 'happy hour' snack boxes, prepared by cooks who are refugees.

> CHEZ VOS PRODUCTEURS Founded by Antoine Pineau

Chez Vos Producteurs is an online marketplace that sells fresh foods from local producers and farmers. Its objective is twofold: to allow farmers to make a better living from their work; and to make sure that consumers have high-quality products on their plates.

FIBRANY Founded by Andy Cleraux

Fibrany is a monthly beauty subscription box for an underserved community: women with kinky, curly or frizzy hair. The boxes don't include the usual sample-sized bottles, but rather full-sized products and goodies. The startup has the ambition of becoming the leading hair care brand for textured hair.

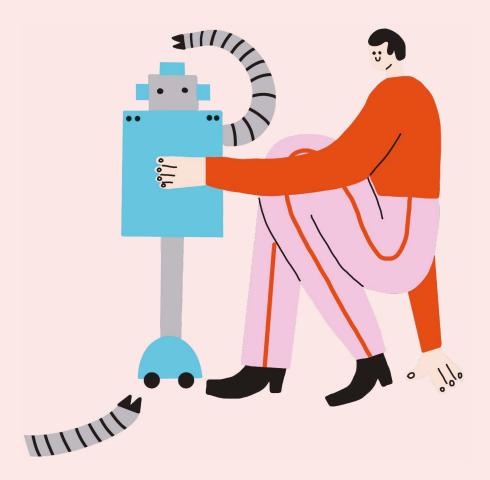


AI papers by % of female authorship by country, 2018

Source: AI Index

Predictions for 2021

We asked French entrepreneurs and investors what they think 2021 has in store for the world of tech. Here are eight trends to watch out for.



1. CLEAR ROAD AHEAD FOR FRANCE

Call it self-serving or wishful thinking, but it's clear French entrepreneurs are enthusiastic about their prospects in the coming months.

Yubo's Sacha Lazimi, for one, sees the acceleration of the French and European ecosystem as proof of the kinds of opportunities that are up for grabs for startups in this part of the world. "The environment is favourable for the growth of a 'third way' and the emergence of new champions competing with the US and China's leading companies," he says.

"The tech ecosystem will continue to grow ever faster with the investments President Macron is making here in France," adds Back Market's Thibaud Hug de Larauze.

"The tech ecosystem will continue to grow ever faster with the investments President Macron is making here in France"

That echoes predictions by Station F's Roxanne Varza, who thinks that the rise of tech in France and other European countries will contribute to a further shift of power away from Silicon Valley.

"As far as France is concerned, I think we'll also continue to see more and more foreign investors waking up to the local opportunities," says Varza. "In the past few years, we've seen more and more tier one funds investing in France-based companies. I'm expecting this trend to continue and competition to heat up."



2. 'TECH FOR GOOD' FOR EVERYONE

Tech with a purpose, including more environmentally friendly innovation, is gearing up to be the most popular trend of 2021, based on predictions by entrepreneurs.

The Covid-19 pandemic has boosted support for a greener, fairer and more equal society, says Back Market founder Thibaud Hug de Larauze.

"The refurbished tech industry is thriving in France and we will see it rise across markets, and other countries follow in France's footsteps — for instance, the UK is driving towards a green recovery in 2021," he says. "In France, the government is making advancements on tackling the ever-growing e-waste problem by introducing a 'repairability index' for electronic products and incentives to shift spending habits to used electronics. We predict that other governments will follow suit." As a result, there will be more 'tech for good' startups joining the ranks of France's biggest and fastest growing companies, especially as they emerge as winners even amid Covid-related economic turbulence, predicts Ÿnsect's Antoine Hubert.

"In 2021, more companies will realise that making a tangible impact is not possible unless they reduce emissions across the value chain," says Pierre-François Thaler, chief executive of EcoVadis. "The trend will be accelerated by corporate and social initiatives, new regulations and increased constraints on fossil fuels."

"More companies will realise that making a tangible impact is not possible unless they reduce emissions across the value chain"

3. MORE HEALTHTECH... BUT ALSO MORE SCEPTICS

It's not surprising amid Covid-19 to hear predictions that health will be at the heart of people's preoccupations in 2021.

Bpifrance's Paul François Fournier says that there will be increased appetite for "healthcare technologies, whether they are innovative therapeutic solutions or devices, or transformative digital technologies". It's also a trend that Christophe Tallec, the head of deeptech conference Hello Tomorrow, is betting on.

What is perhaps less obvious is whether greater interest translates into further changes in behaviour from consumers. Tallec's warning: brace for the sceptics.

"When you take into account that France has one of the highest anti-vax levels in the world, it's an important point our ecosystem should keep in mind," says Tallec. "Innovators have a responsibility to handhold people into these new trends, because there are also techno-sceptics and taking time to explain what we're doing has never been so important."

4. AGRICULTURE IS THE NEXT HOT TECH TREND

Agriculture is one of the sectors that will see significant innovation this year. Technologies for "agricultural precision" and leaps in the kinds of equipment used for production as well as product control — for organic products for instance — will get a lot of attention, says Bpifrance's Paul François Fournier.

Ÿnsect's Antoine Hubert expects we'll see "more regenerative and ecological agriculture that includes a strategy for soil conservation, and the emergence of large-scale carbon-neutral vertical farms to produce more and better with less resources".

And while bugs from Ÿnsect's insect farms today are used to feed animals, Hubert predicts that the industry more broadly will move towards new markets, including feeding humans.

5. AFTER GREENWASHING, "DIVERSITY-WASHING"

In 2021, "diversity-washing will become the new greenwashing," says Pierre-François Thaler, chief executive of EcoVadis.

And just like greenwashing — in short, making eco-friendly announcements and investments only for show, not as a reflection of a sincere, deeper change — "diversity-washing" just isn't going to cut it.

And just like greenwashing — "diversity-washing" just isn't going to cut it.

"Consumers, investors and stakeholders will focus less on surfacelevel diversity issues and require companies to provide complete transparency into workforce and supply chain practices and behaviors," says Thaler. "Minority ownership labels will become less important in sourcing and investment decisions — emphasis will be placed on workforce diversity, how employees are treated and commitments to diversity, at both the brand and supplier level."

6. THE YEAR OF THE VERY VISIBLE HAND

Entrepreneurs expect that the role of government and regulators will become more important in the coming months. Part of that comes from the need to cope with the fallout from Covid-19, for which governments are doing a lot of the heavy lifting with stimulus plans of all sorts. But it's true beyond Covid too.



"2021 will be a pivotal year from a regulatory perspective, as the European governments and the EU Commission work together to improve the online safety and data protection of every European citizen, and to allow a fair competition within the sector," says Yubo's Lazimi.

For EcoVadis chief executive Thaler, "the visible hand will return". He expects more environmental regulation and policy geared towards sustainability targets in 2021, and in the rest of the decade to come.

"The visible hand will force the sustainability laggards to change to survive"

"The tone will be set in Europe with the EU Green Deal, and in North America with the US's expected return to the Paris Agreement," he says. "The visible hand will force the sustainability laggards to change to survive, while further propelling leaders forward and opening up new doors around investments, M&A, growth, earnings and more."

7. MORE DEMANDING EMPLOYEES

"We are going to see individuals asking more of their companies in terms of what they are going to do to support their mental and physical health," says Jean-Charles Samuelian, chief executive and cofounder of Alan.

EcoVadis chief executive Thaler adds: "The economic fallout of Covid-19 will put social practices to the test." Last year, employers had trouble sticking to the strict guidance on worker safety that they implemented at the beginning of the pandemic.

"Next up is the economic hangover, with many industries looking at multiyear recoveries and immense pressure to perform," says Thaler. "Large, global companies, especially those in slower recovering sectors, must be extremely attentive to their suppliers and increase focus on human rights and social issues to ensure corners aren't cut to survive."

8. DATA LOCALISATION AND SOVEREIGNTY GAIN GROUND

In recent years, data storage has become critical for companies' business imperatives and costs, as well as managing risks related to compliance, says OVH's Michel Paulin. "Data is the new goldmine, as it allows organisations to improve operations with predictive analytics, to build new added value services or products," he says.

"Data is the new goldmine"

As a result, in 2021, data localisation and sovereignty will become a major strategic factor for businesses, feeding into the demand for a trusted and sovereign European cloud, says Paulin.

"The European DNA is very strong on data protection and individual rights," he says. "In Europe, we want to have an open IT ecosystem, where we control the location of data but also its portability and interoperability. There is a strong push towards local innovation to avoid being dependent on external sources for the most sensitive data."



Sifted would like to extend special thanks to France's minister of state for the digital transition and electronic communications, **Cédric O**, for agreeing to be interviewed for this report.

We would also like to thank the following people for their participation:

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Antoine Huber, cofounder and chief executive, Ÿnsect

Thibaud Hug de Larauze, cofounder, Back Market

Sacha Lazimi, cofounder and chief executive, Yubo

Frédéric Mazzella, founder, BlaBlaCar

Michel Paulin, chief executive, OVHcloud

Julie Ranty, managing director, Viva Technology

Jean-Charles Samuelian, cofounder, Alan

Christophe Tallec, general director, Hello Tomorrow

Pierre-François Thaler, chief executive, EcoVadis

Roxanne Varza, director, Station F

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La French Tech is France's startup movement, powered by its ecosystem and bolstered by its government. They bring together these two radically different worlds bound by a single mission: make France a great home for global mission-driven tech champions. President Macron set the objectives: 25 unicorns by 2025, but not at the price of inclusion, gender equality and the planet.

At the grassroots level, La French Tech is brought alive by its 15,000 startups and its growing network of 114 entrepreneurial communities around the globe. They strive to promote a culture of giving back and openness, while propelling the French startup scene forward both locally and internationally.

Inside government, under the wing of the Minister for Digital Affairs, La French Tech wields a specific arsenal: public policy (ex. French Tech Visa), funding (ex. €4.3bn Emergency Fund for Startups), national programmes (ex. French Tech Tremplin) and international promotion of its startups (ex. Presence at CES). It counts a core team of 15 headquartered at Station F, and over 50 correspondents across all key ministries and government agencies.

Questions? Feedback? Would you like to partner with Sifted on the <u>next report</u> into your sector?

Or help us profile your emerging tech hub?

Get in touch with Christopher Sisserian, head of Sifted Intelligence via **chris@sifted.eu**



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