

CHASING EUROPEAN UNICORNS

How to position the European
innovation ecosystem
to the forefront?
Solutions for Businesses
and Institutions

A collaborative initiative
of AmCham's innovation
working group members.

Co-authored by:
Mathilde Clauser,
Clyde Long de Lugo,
Laure Menant.

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Part of Capgemini Invent

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I. Executive Summary



The target audience of this White Paper is both public authorities and companies of all sizes. We believe the present recommendations will provide insights and tools for all innovation stakeholders to empower them to enhance and sustain the European innovation ecosystem. These recommendations work towards our vision of a unified, competitive, and sustainable European innovation ecosystem.

We believe EU public authorities are not the sole relevant actors in invigorating the innovation ecosystem. Companies can and must consolidate and boost their innovation strategies, particularly relevant for SMEs and mid-cap companies. As the European Economy's driving force, they hold immense potential in fostering innovation; however, they also experience some drawbacks in seeking out and implementing innovative processes (see section 4.1 and 4.1.3).

Our disruptive vision for businesses: Innovation is not a gimmick

For companies to succeed in a context of growing uncertainty, with complex and constantly changing markets, innovation must become a core driver of the business strategy. Innovative projects enable companies to develop new growth levers, anticipate market shifts, and build resilience.

a. Can you identify who is pushing your disruption?

From Chief Innovation Officer to Chief New Business Officer.

To innovate, companies must make exploration work together with the day to day operations of the company. However, it is difficult for many companies to reconcile these two approaches as they are fundamentally different. Offering the CIO a seat on the executive committee, ensures that innovation is discussed and indeed considered when building the strategy. But we believe this is not enough. To disrupt existing markets and create new ones, companies must empower their CIOs to become “Chief New Business Officer” (CNBO) in charge of systematically questioning and pushing the company strategy further, by providing potential vision and greater ambition based on a more profound knowledge of what is possible tomorrow. This role should be led by an innovation expert, who is sector agnostic and reports directly to the CEO. Additionally, the company CEO needs to be an Innovation Champion to help facilitate the adoption of an innovation mindset throughout the company and to legitimize the role of the CNBO.

b. Does your corporate mission enable self-disruption?

Corporate mission as a strategic innovation guide.

As businesses move away from the traditional sectorial silos, finding the right new markets to address and collaborations to pursue is becoming increasingly challenging. We believe that a corporate mission can act as a “compass” when making these complex innovation decisions. The mission needs to be ambitious enough to allow for a complete transformation and to open up new business opportunities. Ahead of launching a collaboration, companies can, at this point, question how their purpose fits in and serves the overall innovation strategy. When pursuing an innovative alliance, the corporate mission informs the appropriate partner according to business interests and to cultural fit. Targeted innovative projects unfold from the corporate purpose, ensuring smoother collaboration with external actors such as startups.

c. Are your CXOs equipped to lead startups toward scaling within your organization?

Empower your CXOs to define a strategic roadmap and settle KPIs to nudge their investment (budget, time, etc. in startups).

Today, collaborations between startups and large companies are critical for innovation but they often turn into failures. The complex processes in place in multinational companies tend to jeopardize the startup’s autonomy and unique work culture. Additionally, startups often lack direct access to the collaborating company’s top management and decision-makers. To ensure that these collaborations are successful, startup leaders should be considered as strategic players, directly reporting to an executive committee member or ideally to the CEO. This organization will provide startups with a clear understanding of how the company intends to evolve in terms of strategy and offer them opportunity to build trust-based personal relationships with key stakeholders – helping them to fast track specific projects, get adequate resources and generate more organic synergies. To ensure this investment is concretely achieved, we suggest setting KPIs for each executive committee member to measure their time spent with startups and how much they invest financially in startups (through partnerships/co-creation, procurement spending or funding). By three years, each business unit should aim to spend about 20% in procuring services from innovative startups – a significant commitment to drive impact.

Our disruptive vision for Institutions: Only at the EU level can we compete on innovation

In a global economic context characterized by the ever-growing relevance of tech and disruptive innovation, the EU fares poorly compared to its competitors. Many European startups are notably being bought out by international investors, or choosing to go public abroad. There are no European leaders in innovative sectors (e.g., e-commerce, technological hardware, etc.). To bolster its global competitiveness and the resilience and relevance of its companies, the EU must catch up on innovation, or else, it risks becoming insignificant on new up-and-coming markets.

a. Do we know what our priorities are?

Create key innovation fields: cybersecurity, climate, and health.

The lack of focus in the innovation strategy, paired with a significant disparity of regulation, adds complexity and hinders companies' development across the European Single Market. In identifying key innovation fields, the EU should harmonize innovation efforts, focus resources and investment thus bolstering their impact, and become a leading innovative actor in these fields. The working group has identified three domains which should attract the majority of innovation efforts: cybersecurity, climate change, and health. Given the current global context and challenges, these fields represent major business and innovation opportunities, while aligning with the EU's political agenda and overall positioning.

b. How do we scale our innovation investment strategy?

Position the European Investment Bank as a major direct investor in startups.

The EU lags considerably behind the US and China in the number of tech unicorns. This recommendation is inspired by the success of the French public investment bank, which invests directly in French startups. Similar dynamics at the EU-level would help bolster the creation of EU tech giants, which will subsequently sustain the European tech ecosystem by providing additional exit possibilities either by having the funds to acquire other smaller startups or by being big enough to go public. To match the budget and impact of Bpifrance at the European level, the working group suggests European investment reaches €50bn over four years (including €15bn in direct investment), to help fund 40,000 startups across the Union. This budget would work towards achieving the goal of 100 EU-based unicorns by 2025. Furthermore, empowering the EIF to participate in series C and D at higher levels would also help European startups attain the unicorn size.

c. What is Europe's area code?

Create a European Innovation Agency that coordinates EU collaborations

There are numerous European innovation institutions, yet they lack visibility and coordination. As a result innovation programs and opportunities currently appear to be dispersed. They would benefit from being clearly identified and gathered under a single entity to facilitate communication, outreach and publicity of innovation projects. Creating a strong European Innovation Agency, tasked with strengthening existing EU innovation networks and ensuring their compelling and effective governance, as well as with identifying and overseeing large-scale innovative projects, would ensure they can both benefit from EU innovation stakeholders' diversity and multiculturalism. The working group believes creating such an agency would strengthen European innovation's relevance and competitiveness globally. Furthermore, the agency would be aptly positioned to steer networks, investments, stakeholders, and projects towards the key innovation fields, to further unite the EU innovation landscape.

II. Editorial



Kat Borlongan, French Tech Mission Executive Director

Kat Borlongan is a specialist in open innovation and the international digital ecosystem. She is the director of the French Tech mission, a government-backed movement bolstering France as one of the best countries in the world to start and scale global tech champions. Beginning her career at Reporters Without Borders and the UN, she co-founded Five by Five in 2013. She also worked with many startups, including as a Techstars Paris and as a mentor in Google, Numa and Startup Bootcamp accelerators.

A new generation of European Covid-era startups is coming

One of my favorite things about the tech ecosystem, in France or elsewhere, is its culture of optimism. When under siege by a global health epidemic of epic proportions, before considering waving a white flag, we charge. Full on. A glance back at history shows several of today's tech empires were born from lesser crises. We've all heard the genesis stories of Airbnb, Whatsapp and Alibaba. Noteworthy examples closer to home include our very own Priceminister, Criteo and Blablacar.

In that same spirit of entrepreneurial optimism, let me say this: This crisis is Europe's chance to take on global startup leadership, and become home to the next generation of tech giants. Some reasons why:

- **Pre-Covid, the European startup ecosystem was already on a track to growth.** In 2019, European startups raised \$34bn in venture capital funding, a sharp 40% rise from the previous year. Even amidst the crisis, we've broken that record with \$35bn in Q3 of 2020.
- **Many European governments showed up for their startup ecosystems, absorbing a lot of the initial shock** by collectively putting nearly €9bn on the table, together with massive furlough schemes. In France, this was a no-brainer: Cedric O, our State Secretary for Digital Affairs, announced a €4.3bn startup emergency package barely a week after confinement. Across Europe, similar measures followed by Tech's prominent role in recovery plans, have given our startups solid foundations to grow.
- **The success of any ecosystem boils down to one thing: its talent pool.** The US would know; at least half of its unicorns were founded or co-founded by immigrants. Yet as American immigration policies have tightened over the past year, European countries have welcomed tech talent. The French Tech Visa for Talent is just one example of this trend: It allows any startup based in France to bring in talent (and their families) from anywhere in the world with a 4-year residence permit in a matter of weeks--even during the moratorium on travel. As remote work becomes the new normal, the European quality of life reels more talent in. Why work in Palo Alto, when the Tech capitals of Europe such as Paris, Lisbon or Amsterdam have their doors open?

Sources:
- Dealroom
- Pitchbook
- the French Ministry of Economy.

Photography: Michele Young

- **The next tech giants will come from deeptech:** The world's most advanced technologies (ex. quantum computing, computer vision, robotics, nanotech) are now faced with some of the world's most urgent challenges (ex. food, health, energy, mobility.) As it so happens, deeptech is Europe's strong suit. Europe has the greatest number of PhDs per capita in the world, a third of the world's top 100 universities in engineering and technology, and a track record in deeptech. The European Innovation Council's push for a €10bn fund can only help.

Taking leadership of Tech isn't just a business opportunity either—it has a strong moral component. Europe has the chance to redefine Tech and create an alternative where values go with valuations, growth is as important as progress, and the most advanced technologies are dedicated to tackling the world's toughest problems. That's what we're building here. We hope you'll be part of this journey.



III. Introduction



Unicorns Everywhere

The past five years have witnessed the continuous development of startup companies valued at over \$1bn, also more commonly known as “unicorns.” As of October 2020, CB Insights registered 490 unicorns worldwide¹, while there were only 39 in 2013², when the concept first emerged. However, not all geographical areas seem to be created equal when it comes to expanding these statistical rarities.

In 2019, the US was home to around 235 unicorns, and China had close to 120³, when the European Union only accounted for 28 of the global 421 unicorns (excluding the 22 UK-based companies⁴). In terms of volume, the EU has ten times less unicorns than in the US, and only slightly more than a country like India which has 21 unicorns. The largest EU unicorn, Swedish Klarna, only ranks 22nd in terms of valuation (\$10.65bn) in 2020⁵, while the largest Chinese unicorn, Bytedance, is valued at \$140bn and the largest American unicorn, SpaceX, \$46bn.

Chasing EU Unicorns

Because the EU is clearly lagging behind, we believe that we are at a critical inflection point where the European innovation ecosystem is shifting and slowly accelerating – Europe’s unicorns’ cumulative value has increased by 28% in the last year⁶. Similarly, the number of EU-based unicorns, and contenders, is rising rapidly⁷. In 2019, the EU saw the arrival of 21 new unicorns (including UK-based startups⁸), 16 EU-based unicorns (excluding UK-based startups), and its unicorn count increased by 10 again in H1 2020⁹.

This dynamism is a signal of hope for the actors invested in Europe’s innovation competitiveness. French President Macron notably expressed his wish for France to have 25 unicorns by 2025¹⁰, instead of seven in 2019. France now claims nine unicorns (although some argue it can boast of having thirteen, depending on which criteria are taken into account¹¹) and there are about twenty potential candidates that could soon reach unicorn status¹². These trends are confirmed by the 2020 Digital Riser Report, which ranks France as the top “Digital Riser” out of the G7 countries¹³.

To bridge between the gap the US and China, the European Union as a whole should adopt a similar ambition as the one developed by the French government in terms of unicorn growth trajectory, and work towards turning the 28 EU unicorns to 100 by 2025.

1 – CB Insights, 2020. “The Complete List Of Unicorn Companies”. Available from: <https://cutt.ly/BgWpJGg>

2 – Fan, Jennifer S. “Regulating Unicorns: Disclosure and the New Private Economy.” BCL Rev. 57 (2016): 583.

3 – CB Insights, 2020. “The Complete List Of Unicorn Companies”. Available from: <https://cutt.ly/wgWpMAf>

4 – CB Insights, 2019. “The 50 European Unicorns Ranked By Valuation”. Available from: <https://cutt.ly/agWp2ir>.

5 – CB Insights, 2020. “The Complete List Of Unicorn Companies”. Available from: <https://cutt.ly/ugWp3C4>

6 – GP Bullhound, 2020. “Titans of Tech” report. Available from: <https://cutt.ly/3gWp455>

7 – Les Echos, 2019. “Startup: avec sept licornes, la France rattrape son retard”. Available from: <https://cutt.ly/3gWp5N2>

8 – Teare, G., 2020. “European Unicorns Break Out In 2019”. Crunchbase news. Available from: <https://cutt.ly/ygWaw2f>

9 – Bello Perez, Y., 2020. “Europe got 10 more unicorns in H1 2020 – but brace yourself for COVID-19 instability”. Growth Quarters. Available from: <https://cutt.ly/OgWatdw>

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11 – J’aimeLesStartups.fr, 2020. “Les 13 licornes Françaises en 2019”. Available from: <https://cutt.ly/ugWapRu>

12 – Eldorado, 2020. “Les 20 prochaines licornes françaises”. Available from: <https://cutt.ly/jgWadYr>

13 – European Center for Digital Competitiveness, 2020. “Digital Riser Report for 2020”. ESCP Business School. Available from: <https://cutt.ly/ugWagUc>

Zebra and Camels

Sustainable unicorns are few and far between. The metaphor is useful in terms of defining the valuation of a startup, however, this model also often suggests exceptionally rapid growth and access to large venture capital. Some unicorns grow so quickly that their attempts to follow traditional business routes and be listed on the stock market flop. 2019 saw the failed IPOs of both Uber and Lyft (both lost a third of their opening share price after six months), and the fallen ambitions of WeWork to go public¹.

As such, many innovation actors now turn to the metaphor of the zebra: these startups differ from unicorns because they are “not aiming to disrupt current markets”, instead “achieving profitability and demonstrating it for a while, and helping to solve a societal problem².” Another useful metaphor is that of the camel, which may be less showy, still, it implies resilience and sustainability as camels “adapt to multiple climates, survive without food or water for months, and when the time is right, can sprint rapidly for sustained periods of time”; startups adopting this model “prioritize sustainability, and thus survival, from the get-go by balancing strong growth and cash flow³”.

The concepts of zebras and camels tends to fit better with the European business culture aracterized by steady and sustainable (sometimes even risk-averse, see section IV.A). growth habits and the resilience of its industrial fabric of SMEs and mid-cap companies⁴. However, because the EU already tends to produce resilient and sustainable companies, we believe it should be aspiring toward building more disruptive innovation, thereby leveraging the idea of unicorns.



1 – Powell, J., 2019. “The Problem Is Bigger Than WeWork. Why Wall Street Realized Unicorns Aren’t so Magical”. Time. Available from: <https://cutt.ly/4gWah7b>

2 – Oron, Y., 2018. “Forget Unicorns. We Need More ‘Zebra’ Startups.” Entrepreneur. Available from: <https://cutt.ly/ZgWaklk>

3 – Lazarow, A., 2020. “Forget Unicorns. Startups Should Be Camels.” Entrepreneur. Available from: <https://cutt.ly/HgWazyY>

4 – Arnold, M., and Sciorilli Borrelli, S., 2020. “Europe’s resilient manufacturers bounce back from virus”. Financial Times. Available from: <https://cutt.ly/qgWacGh>

Unicorns, who cares?

Europe has many industry leaders in the field of financial services (e.g. Deutsche Bank, Banco Santander, BNP Paribas), insurance (e.g., Axa, Allianz, Generali Group, Aegon¹), energy (e.g. Shell, Total²), and even retail (e.g. Schwarz Group, Carrefour, Ahold Delhaize, Aldi, Ikea, Auchan³). However, Europe missed the opportunity of the 2000 technological revolution, which was taken over by American and Asian actors. There are no European leaders in hardware⁴, search engines⁵, AI⁶, e-commerce⁷, or social networks⁸. The world leaders in these fields are all American (e.g. Apple, Dell, in tech hardware; Google, Microsoft Bing, Yahoo, in search engines; Amazon Web Services, Google Cloud, IBM Cloud, Microsoft Azure, in AI; Amazon and eBay in e-commerce; and Facebook, Youtube, Twitter, in social media) or Asian (e.g., Samsung, Hon Hai Precision Industry, Sony, in tech hardware; Baidu in search engines; Alibaba Cloud in AI; Jingdong and Alibaba in e-commerce; and WeChat and Tiktok in social media).

Bolstering the creation of unicorns in Europe would help ensure that in the next 20 years, some European companies are amongst the world leaders in new and innovative industries, therefore boosting Europe's relevance and leadership amongst global innovation actors. Beyond the creation of billion dollar companies, we believe the development of unicorns also represents a relevant metric to measure the vibrancy of an innovation ecosystem. For instance, we note a relative correlation between the number of unicorns a country has produced⁹, and their ranking in the Global Innovation Index¹⁰. The US and the UK, which have generated respectively the most and third most unicorns worldwide, are ranked third and fourth in this year's Global Innovation Index rankings. Similarly, South Korea, which is the sixth country in terms of unicorns, is also ranked tenth most innovative economy.

Furthermore, a large number of unicorns shows that the economy is devoting significant capital to innovation, and able to provide growing companies with significant investment quickly¹¹. Indeed, while the essence of a unicorn is to reach a \$1bn valuation, by attracting venture capital, it can only do so in an economic context which provides such opportunities. Levels of investment in R&D similarly mirror the number of unicorns a country produces. Seven countries out of the ten biggest investors in R&D¹² have also made the top ten of countries having produced the most unicorns. Finally, some of the countries with the most unicorns (notably the US, China, the UK) also rank in the top ten of countries with the most job opportunities¹³, thus proving the dynamism of their economies.

The EU as a whole has the potential to increase its competitiveness on these issues. Aiming to increase the number of unicorns will drive up the overall level of EU innovation and contribute to putting the EU at the forefront of the global innovation ecosystem. In such a dynamic context, EU industry leaders and SMEs would act as key players, by challenging their strategies, collaborating and leveraging the ecosystem's assets, to further develop new growth opportunities.



1 – Murphy, A., Tucker, H., Coyne, M., and Touryalai, H., 2020. “Global 2000, The world's largest public companies”. Forbes. Available from: <https://cutt.ly/sgWabdn>

2 – S&P Global Platts, 2020. TOP 250 Global Energy Company Rankings 2020. Available from: <https://cutt.ly/WgWaQ3F>

3 – Gaul, R., 2020. “2020 Top 50 Global Retailers”. NRF. Available from: <https://cutt.ly/rgWaELN>

4 – Johnston, M., 2020. “10 Biggest Tech Hardware Companies”. Investopedia. Available from: <https://cutt.ly/JgWaYoY>

5 – Chris, A., n.d. “Top 10 search engines in the world”. ReliableSoft. Available from: <https://cutt.ly/AgWaOBw>

6 – Patrizio, A., and Maguire, J., 2020. “Top 100 artificial intelligence companies 2020”. Datamation. Available from: <https://cutt.ly/ggWaAGx>

7 – Pajovic, S., 2020. “8 Largest eCommerce Companies in the World and No, Alibaba is Not the Largest Chinese eCommerce”. Anxiomq. Available from: <https://cutt.ly/LgWaDE7>

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9 – Armstrong, M., 2020. “The Countries With the Most Unicorns”. Statista. Available from: <https://www.statista.com/chart/6696/the-us-is-home-to-the-most-unicorns/>

10 – Dutta, S., Lanvin, B., and Wunsch-Vincent, S., 2020. “GLOBAL INNOVATION INDEX 2020, Who Will Finance Innovation?”. 13th edition. Available from: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020.pdf

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12 – UNESCO, n.d. “How much does your country invest in R&D?”. Unesco Institute for Statistics. Available from: <http://uis.unesco.org/apps/visualisations/research-and-development-spending/>

13 – Visa First, 2020. “Top 10 Countries with Highest Job Opportunities In 2020” Available from: <https://www.visafirst.com/blog/top-10-countries-with-highest-job-opportunities/>

Our ambition

In January 2020, AmCham France – with the drive of Fahrenheit 212, an innovation and strategy consulting company and Konsey advisory, a public policy consulting company – decided to bring together the expertise and insights of different innovation leaders including investment funds, directors of innovation from European and American multinational companies operating in various economic sectors, startup and scale-up as well as representatives of the academic world to develop impactful recommendations to bolster the European innovation ecosystem and position Europe at the forefront innovation. Beyond the discussions held twice a month among working group members, this white paper also draws its observations and conclusions from interviewing key innovation actors whose expertise ranges from the American and European ecosystems.

AmCham France decided to take a stand on the issue of innovation because European and American innovation ecosystems are profoundly intertwined. US companies spend around \$31.3 billion in R&D in Europe, and European companies spend roughly \$43.8 billion on R&D in the US¹ The transatlantic economy is prosperous and impacts innovation in both the US and the EU. Cross-investment in innovation by American and European companies thus lends them legitimacy in devising recommendations for improving and strengthening the European innovation ecosystem.

Moreover, as will be explored throughout this paper, the US has built a distinct and exemplary innovation ecosystem and culture, rooted in dynamism, expertise, and performance. This ecosystem is notably embodied in Silicon Valley, and the numerous successful startups launched there over the past few decades. While it would be foolish to aim for strict and absolute reproduction of these dynamics in Europe, they are a definite inspiration for what processes could be successfully transferred to the European stage, while valuing and encouraging the strengths and characteristics that make the European ecosystem unique.

The division of this white paper into four sections follows the four central themes and obstacles identified by the working group in the current European innovation ecosystem, namely the culture of innovation in Europe, the European market fragmentation, issues of financing and lack of available capital, and the need to collaborate to develop more competitive innovation.

Covid-19 and economic recovery

The working group began looking into this topic in January 2020, before the Covid-19 outbreak in Europe and the US, and the economic crisis which has ensued. The Covid-19 pandemic has made this issue all the more pressing and has illustrated the importance of coordinated innovation efforts in the EU. We believe that innovation can and must serve as a vehicle for economic recovery, sustainability and prosperity.

Europe is, therefore, facing a double challenge in succeeding to position itself as an innovation leader, not only for its competitive role and international relevance, but also to boost its economic recovery and ensure the longevity of its companies. With this white paper we want to seize on the momentum by proposing pertinent recommendations on how to generate long-lasting innovation by leveraging some of Europe's key assets – such as its large legacy industries, its SMEs and mid-cap companies, emerging startups, highly skilled workforce and its unique addressable market.

¹ – Hamilton, D. S., and Quinlan, J. P., 2019. "The Transatlantic Economy 2019: Annual Survey of Jobs, Trade and Investment between the United States and Europe". AmCham EU. Available from: <https://cutt.ly/GgWaK5r>



IV. Developing an innovation culture and competences

A. Developing the innovation leader's mindset and skills

The EU benefits from the most highly skilled workforce, academics and technologies globally, yet it lags in business innovation compared to the United States, Israel, or China¹. One of the reasons explaining this gap between level of skills and the ability to create innovative businesses, **turning into successful scale-ups and market leaders, is related to peoples' mindset and culture.** Research shows that “cultural support for risk-taking is one of the key requirements for entrepreneurship to thrive².” Yet, in Europe, fear of failure is prominent. Data shows that 57% of European entrepreneurs “would not invest money in a business managed by someone who has failed in the past³.” Similarly, a 2019 study conducted by the OECD showed that “44.5% of youth in the EU viewed fear of failure as a barrier to entrepreneurship” while the global average is only 39.2%⁴. Some even go as far as arguing that the European culture is historically “unfriendly to entrepreneurs, valuing prudence, professionalism and leisure time over flamboyant risk-taking⁵.” As John Brockland argued in his interview: “willingness to take risks, in a smart way, is crucial” for innovation, and entrepreneurs or employees seeking to innovate should have the “freedom to fail”, so they can draw lessons and learnings from this failure. As Christophe Liénard, Director of Innovation at Bouygues also noted in his interview, when comparing innovation in France and the US, the notion of risk-taking is much more present in America, which may in part explain its innovative superiority.



To address this issue, we focused mainly on the team leader's spirit within an innovation project or a startup – as he or she acts as a catalyst – by building a team, providing a vision and maintaining working dynamics. Throughout interviews, commonalities indicated two main areas of improvement for innovation leaders: **improving their relationship to risk – especially at the beginning of a venture; and then the ability to change management style during the growth stage of their projects.**

1. Act as explorers: embracing while limiting risk

When discussing success factors to innovate, “risk” is often presented as a critical business feature to embrace. Innovating implies addressing new business opportunities, which are by definition riskier than existing and well-known ones. Yet, some European innovation actors are coming to increasingly recognize that being a risk-taker – i.e. embracing the risk of failing and learning from failures – can be a favorable personality trait to innovate and that risk-taking should be fostered. The EU has notably launched the LIFE initiative: Learning from Failure in a collaborative Entrepreneurship network, which aims to “generate and grow awareness that failure is an inherent part of the process of entrepreneurship and innovation” and “celebrate the success stories that were built on incremental learning⁶.”

We challenge this approach with the belief that no one enjoys failing. Entrepreneurs are regarded as risk-takers, since they build new ventures – yet, they do not just “take” risks: they accept risk as inherent to a business and try to “minimize” it. This approach to risk can also be compared to the explorers' journey, as explains Bruno Martinaud, Director of the Master “Innovation technologique & entrepreneurship” at Polytechnique and author of the article “Enseigner l'entrepreneuriat: exercice vain ou indispensable en 2020?”. The explorer **defines an ambition, evaluates opportunities and tries different options, some of which will work while some won't.** Failing is not the end of the

1 – According to the 2020 Global Innovation Index, the top economies worldwide for innovations are, in order, Hong Kong, the USA, Israel, Luxembourg, and China. Source: Dutta, S., Lanvin, B., and Wusch-Vincent, S., 2020. Global Innovation Index, 2020. 13th edition. Available from: <https://cutt.ly/zgWaB1K>

2 – Hernandez, C., 2015. Europe needs to rise from its fear of failure. Medium.com Available from: <https://cutt.ly/dgWa1yK>

3 – Interreg Europe, 2017. “REBORN and the ‘fear of failure’ in European. Available from: <https://cutt.ly/fgWa008>

4 – OECD, 2019. “The missing entrepreneurs 2019.” Available from: <https://cutt.ly/SgWa9P2>

5 – Fairless, T., 2015. “Europe Is Struggling to Foster a Startup Culture”. The Wall Street Journal. Available from: <https://cutt.ly/ZgWa8vo>

6 – Life, 2020. “About”. Available from: <https://cutt.ly/ZgWa7cb>

7 – B. Martinaud, 2018. “Le startuper, cet explorateur des temps modernes”. Media-Paris Saclay. Available from: <https://cutt.ly/rgWa6iH>

exploration. Instead, it is fully integrated within a larger pool of trials and errors regarded as an opportunity to learn during the journey¹. At this point, the company is a team of passionate people undertaking an exploratory process. Once the prospect is confirmed, the entrepreneur turns his exploratory adventure into a company – with the structure, organization, and processes².

Also, as Covid-19 reminds us, it is impossible to avoid risk altogether and sometimes an unprecedented threat can impose itself on companies without any notice. Therefore, it is important to **consider risk not as something to avoid nor as something to embrace fully, but on the contrary, as a permanent feature to accept, requiring the adoption of a pragmatic approach in regard to it.**

Similarly to that of an entrepreneur, the role of an innovation leader in a company is to continually produce new creative ideas, solutions and products, either by optimizing existing solutions or by developing new ones. Yet, in contrast with startup founders, they are often constrained by existing and often complex internal company processes, corporate objectives and budgets³ – and are accountable for producing innovation while fitting into those corporate objectives. **These constraints require innovation leaders to (1) calibrate their innovation projects and (2) explain how they fall within a company’s global strategy, (3) without generating additional risks.** Accommodating those three factors often requires either constraining innovation projects, or otherwise, not being given full capacities to innovate.

One approach to minimizing risks associated with innovation projects is to “de-risk”⁴ – as suggested by the innovation consulting company Fahrenheit 212 – the innovation process itself. A tailored set of experimentation, for instance, is an effective starting point⁵, as “experimentation allows us to ‘fail’ quicker, without building the whole answer, thereby de-risking innovation⁶.” Innovation leaders should constantly be thinking beyond the innovation process, for example, thinking specifically about how to also **de-risk integration processes within BUs subsequent to an experimentation phase.**

Despite all the different methodologies enabling innovation leaders to optimize their risks and develop more secure innovations – **the cornerstone to developing successful projects is for innovation leaders to be supported and incentivized by top executives.** Indeed, even though a growing number of executives at the enterprise-level show interest in innovation projects, less than 25% said they were involved in setting innovation targets and budgets⁷. This data shows that the company leaders’ mindset does **not offer the necessary flexibility and tools to allow for the development of innovations.**

To solve this paradox, there is a necessity for **top executives to clearly set the cursor on the importance they want to give to existing business versus future businesses** – and how they could commit to it. This requires organizations **to internally and externally articulate their projected cultural and business transformations.** Companies must rethink their growth model⁸ to clearly stipulate “where and how the company expects to source growth and what role innovation should play in securing it.”



1 – B. Martinaud, 2020. “Enseigner l’entrepreneuriat: exercice vain ou indispensable en 2020?”

2 – Puri, R., 2016. “Navigating Corporate Constraints and Innovation: Interview with Legal at Cisco”. RocketSpace. Available from: <https://cutt.ly/9gWsw6z>

3 – Davis, T., n.d. “Is strategy dead? Fail fast and the value of experimentation”, Fahrenheit 212. Available from: <https://cutt.ly/IgWstkW>

4 – Thomke, S., 2020. “Building a culture of experimentation”. Harvard Business Review. Available from: <https://cutt.ly/tgWsulH>

5 – Davis, T., n.d. “Is strategy dead? Fail fast and the value of experimentation”, Fahrenheit 212. Available from: <https://cutt.ly/pgWsold>

6 – McKinsey, 2019. “The innovation commitment”. Available from: <https://cutt.ly/FgWssYh>

7 – McKinsey, 2019. “The innovation commitment”. Available from: <https://cutt.ly/IgWsgiy>

 Recommendation 1: As a first step to address this problem, companies could be incentivized to formulate and communicate the importance they give to innovation. With this in mind, we suggest that the American Chamber of Commerce looks into generating a **European Barometer to measure EU companies' and governments' rates of investments in innovation**: by measuring their investments in startups (for instance the share of revenues dedicated to the startup ecosystem), along with the budget dedicated to innovation training for executives (agile leadership, de-risking projects, open innovation basics, etc), the budget dedicated to experimentations, and the number of innovation projects in which executives are involved (for how long and in which ways).



2. Constantly change and adapt management style in accordance with a company's continuous transformation: be able to act as a leader of a commando unit (startup), as well as a corporate leader (scale-up)

To pave the way for the growth and scale of an organization, an innovative leader must display a broad array of management competences: **he or she must be able to move from “being the head of a commando unit”** (startup manager, dealing with new challenges every day on a concise term and with a close non-hierarchical team) to **“becoming a corporate leader”** (scale-up manager, dealing with more common challenges, on a more extended period and with a strong delegated hierarchical team).

As a business grows, it must continuously change its structure and develop necessary processes. Among others, growth implies hiring more staff, expanding client base, upgrading facilities, and redefining both strategies (marketing, communication) and internal processes (delegating tasks, creating new divisions, etc.), all of which require time-consuming and sometimes expensive investment¹. **These changes strongly impact startup founders' daily and weekly tasks and increase their level of responsibilities.** While some competencies will be relevant throughout the entire innovation journey (e.g., communication, creativity, leadership, and strategic orientation), some steps of the process will require new specific skills: “scaling and growing innovation require leaders and employees who are more “implementers” than “conceptualizers,” who are entrepreneurial and business builders, anchoring their approach on market demand and customer needs².” Meeting those requirements requires an ability to assess change, embrace uncertainty, learn, and apply new management mindsets and skills.

Leaders and organizations' ability to adopt new management and cultural changes, following company growth is highly valued. This approach to organization development is the cornerstone for a startup to become a scale-up in the entrepreneurial community. In particular, both private and institutional Venture Capitalists give great importance to this ability. When leaders are not able to achieve this evolution, they are replaced by more skilled corporate leaders. Venture Capitalists replace 20% to 40%³ of their founders with more “professional” managers at critical transition points in a startup's growth.

According to a study from Noam Wasserman: out of 1000 American startups, 50% of startup founders leave before the 4th year and in 73% of those cases, the founder has been dismissed from the position. As explained by Bruno Martinaud, the 4th year corresponds to substantial organizational shifts and changes⁴. As mentioned above, taking a startup from the initial stages of growth to the scale-up stage requires different skills and mindset. Because one person will rarely be able to mobilize these various skills throughout the process, it is often the most strategic and sensible solution to reassess the managerial team at every step.

Given this context, a key recommendation would be to foster corporate leadership culture for scale-up leaders and commando culture for corporate leaders developing internal projects. **Yet, we believe that behind this need for constant management change, there is a stronger call for tomorrow's leaders to establish a strong business acumen – to understand “a business situation” and how to respond to it by adapting the business and management accordingly.** Based on a study, 77% of French people believe to lack financial knowledge and about 43% think they lack of information to manage their budget⁵. Business acumen in Europe, and more specifically in France, is significantly lower than in other countries, such as the United States.

To address this issue, the working group suggests a two-fold approach: first, to reinforce general business acumen and second, to accompany startup CEOs in finding the right people at the right time.

1 – Segal, C., nd. “The 6 stages of a startup: where are you?” Cox Blue. Available from: <https://cutt.ly/MgWscZA>

2 – Bruno Martinaud, 2020, “Enseigner l'entrepreneuriat: exercice vain ou indispensable en 2020?”

3 – Ashkenas, R., 2019. “How are you adapting your leadership strategy as your startup grows?” Harvard Business Review. Available from: <https://cutt.ly/AgWsnaj>

4 – Capgemini, 2020. “What's the big idea?” Report available at: <https://cutt.ly/rgWsQ71>

5 – Banque de France, 2019. “77 % des Français estiment avoir un niveau de connaissance moyen ou faible sur les questions financières, selon une enquête Audirep réalisée pour la Banque de France”. Report available from: <https://cutt.ly/6gWsRvD>



Recommendation 2: The working group is aligned with Banque de France’s commitment to offering simple and free information regarding economic and financial knowledge (mainly through a website offering basic understanding for people to make better investment and manage their wallets¹). Yet, we suggest going one step further, providing business training in schools, allowing teenagers to develop business acumen from the early years. As recommended by Bruno Martinaud in his article “Enseigner l’entrepreneuriat: exercice vain ou indispensable en 2020?,” even though there is no precise recipe enabling to develop business acumen – there are methodologies and sets of questions related to building and managing a business that can be taught. Opening teenagers’ mindsets to pragmatic business and innovation related questions would allow them to develop a new perspective on what they learn and how they could leverage this learning to create value.

1 – Banque de France, 2019. “La Banque de France et les membres du comité opérationnel « EDUCFI » réaffirment collégialement leur engagement de proposer au grand public des informations neutres, simples, pédagogiques et gratuites facilitant une meilleure compréhension des sujets économiques, budgétaires et financiers, notamment au travers du portail internet grand public Mesquestionsdargent.fr. Ils s’appuient pour ce faire sur les cinq piliers de la stratégie nationale, avec des engagements précis de moyens.” <https://cutt.ly/HgWsUId>

 Recommendation 3: Second, considering that the team surrounding startup founders is vital for driving growth, we suggest that accelerators, like those launched by Station F, Paris&Co, Schoolab or others, provide help to new ventures in finding the right people to work with, at the right time, and at a reasonable cost. Their advice and guidance would be particularly meaningful during vital growth phases by helping CEOs recruit new “delegate” roles, ensuring they align with the latest cultural and business needs (innovating on its model to scale-up, looking for investors and partners, etc).



B. Leveraging available expertise

As innovation projects grow in complexity, they increasingly require the ability to mobilize various of skills and competencies – both internally and externally. To overcome these challenges, we are convinced by the importance of two potential levers: building a strong corporate culture of innovation and leveraging remote working to tap into global internal expertise.

1. Build a strong corporate culture of innovation

While innovation within a corporate context provides a unique opportunity to leverage various skills, getting support from internal sponsors can prove to be pragmatically complex, especially at the middle management level.

One approach to this challenge is to motivate people to invest in creative work. One way to do so, is by inspiring and stirring people's imagination, while providing intellectual challenge and independence¹ – more than in any other type of project. In contrast with strategies that aim at enhancing an existing business, **innovation strategy is “standing between hopeful intent and realization”² adding uncertainty that can both drive motivation and aspiration, as much as lack of motivation and visibility.** Consequently innovation strategies don't only need to “inform and choose,” they have to “inform, choose and ignite³.” Beyond merely setting a vision, innovation strategies should generate a form of fascination and an impression of the ability to affect real change.

In addition to setting aspirations, corporate structures have to solve practical issues, such as providing time to employees to work on projects that are not always related to their business objectives. As discussed above in section IV.A.1 – organizations must clearly stipulate the weight they want to give to innovation (current business vs. innovation). From that point, they can launch initiatives to free time from employees, put in place controlled processes and methodologies to distribute work across departments, or simply provide innovation leaders with enough power within the structure to mobilize the necessary resources when needed.

A variety of innovative models already exist within enterprises. For instance, some companies, such as Google and Schlumberger, dedicate specific times in the year for employees to work freely on innovation projects.

Schlumberger has set up an in-house program dedicated to innovation. **Pierre Ferron, TechCenter Software Métier Manager at Schlumberger**, explained during his interview for this white paper, every quarter “engineers can self-organize by blocking [one] week to define the [innovative] project they want to work on.” The only requirements are that “they have to present their project in a three-to-five-minute pitch at the end of the 5 working days.” Employees are given full control on how they want to organize these “Innovation weeks”: “we will also have some small teams working on things related to sustainability or CSR. They can then intervene in schools to promote scientific careers, for example. Some teams will use these weeks to improve their skills and work on a technology they haven't had the opportunity to learn about and improve their knowledge.” Moreover, to encourage participation and rewards, Schlumberger also set up “a platform on which all employees can vote for the projects they like” and “buy shares on projects with virtual money (inCoins).”

A large multinational group of the catering sector similarly encourages employees to co-innovate within the company instead of growing innovation in silos. It has set up “mastermind groups” made up of employees, managers and engineers from different business units and countries, to encourage exchange and discussion around strategic topics and upcoming innovative projects. This cross-sectoral dialogue ensures a diversity of viewpoints when tackling pain points, and a broad diffusion of innovation across the entire company.

Through those processes, they **provide opportunities to communicate and build excitement, and engage a large pool of stakeholders within a company in a transparent way.**

1 – Amabile, T., and Khaire, M., 2008. “Creativity and the Role of the Leader”. *Harvard Business Review*. Available from: <https://cutt.ly/wgWsPoz>

2 – Payne, M., nd. “Why is innovation strategy horribly broken and what to do about it?” *Fahrenheit 212*. Available from: <https://cutt.ly/TgWsSKh>

3 – Payne, M., nd. “Why is innovation strategy horribly broken and what to do about it?” *Fahrenheit 212*. Available from: <https://cutt.ly/XgWsFER>

Other similar forms of innovation engagement could be put in place. One opportunity could be to develop an internal market-place for a few key innovation projects for which any employee could vote. According to the spread of votes, a share of the dedicated budget and average sponsors' hours could be allocated. By endorsing innovation projects with a collective corporate approach, **executives could identify inspiring projects, drive engagement, and more readily assess the 'innovation appetite' within a company.** The employees working on innovative projects would provide visibility within the company and legitimize their time spent on the project.

Those initiatives are a powerful starting point – but going one step further would be to **empower innovation leaders to mobilize the right resources, when necessary. Doing so, requires an innovation function to be directly affiliated with a – or several – strategic business units within a company.** This allows for mobilizing essential resources on innovation subjects when necessary. It sends an external and internal message that innovation is regarded as a strategic business driver, fully integrated with its strategy.

🗨️🗨️ **Recommendation 4: In a context that is increasingly changing and uncertain, putting innovation at the core of a business strategy, to develop new growth levers and anticipate market shifts, is a necessity. Building a strong corporate innovation culture starts at the COMEX level. One of the most commonly accepted suggestions would be to have a Chief Innovation Officer's position coupled with a strategic business unit (as Marketing or CTO, depending on the industry). However, considering that this role requires to continuously challenge the "status quo", while keeping a transversal perspective on the company's business, the working group would further suggest another position. The Chief Innovation Officer should be part of the COMEX, taking the role of a Chief Disruptive Officer – to provide a provocative touch: to constantly question and test the company's strategy, while identifying new growth opportunities. This position – close to the CEO – would imply to also coordinate strategic growth projects through a network of correspondents within BUs.**



2 Take advantage of remote working to leverage global internal expertise

We acknowledge that remote working is increasingly perceived as an accepted option – and Covid-19 has accelerated the adoption of remote working tools and habits for companies of all sizes and stages of growth.

Remote working has several benefits, such as enabling diversity within a team: it enhances the accessibility of work for employees who may have disabilities, its flexible nature can accommodate employees with care duties, and it means people can work from anywhere, thereby facilitating the inclusion of people from other communities or countries¹. These factors are beneficial for innovation because increased diversity is directly correlated to more significant innovation. It fosters “nonlinear novel thinking”, creativity, and adaptability, key qualities to boost innovation². A recent ranking of the Wall Street Journal that examined diversity and inclusion among S&P 500 companies highlighted that “companies with above-average diversity produced a greater proportion of revenue from innovation (45% of total) than from companies with below-average diversity (26%)³.”

Remote working could be an opportunity to attract and retain employees by addressing new work-life balance issues. For instance, remote working may make it easier to care for family members manage medical appointments because less time is spent in a separate office⁴. And yet, many teams are less motivated and are eager to return to the office (perhaps this is generational or it is still too early to tell). For younger generations, having the option to work remotely increases a company’s attractiveness – it is growingly regarded as a new standard, at least in the USA. In a Gallup survey from January 2020⁵, “54% of office workers (in the USA) say they’d leave their job for one that offers flexible work time.”

Remote working provides a unique opportunity to leverage diverse talents and mindsets from worldwide offices, providing solutions to talent mobility – often regarded as a challenge due to cultural habits and preferences. Indeed, employees are sometimes wary of international mobility as it implies personal and professional dislocations⁶. Remote working facilitates global mobility. The opportunity to access expertise regardless of geography can allow for a diversity of ideas and inputs and indirectly foster innovations. Knowing how to manage projects with remote workers and a highly diverse workforce requires new management skills from existing teams and managers. Remote working also instills a sense of responsibility and independence in many employees that encourages the development of an entrepreneurial mindset beneficial for innovation.

GitHub illustrates that a large organisation can manage a remote team and to implement a successful working strategy. Headquartered in San Francisco, GitHub’s team of 335 people works across the globe. It stays in contact by relying on mobile technologies and dedicating time every year for a Summit where the whole company comes together and connects face-to-face, and mini-Summit hosted by teams quarterly⁷. Remote working is successful because it is integrated into the company’s strategy and vision.



1 – Richmond, J., 2020. “How remote work can enhance workplace diversity”. Forbes. Available from: <https://cutt.ly/3gWsJPm>

2 – Levine, S. R., 2020. “Diversity confirmed to boost innovation and financial results”. Forbes. Available from: <https://cutt.ly/NgWsLaf>

3 – Ibid.

4 – Richmond, J., 2020. “How remote work can enhance workplace diversity”. Forbes. Available from: <https://cutt.ly/DgWsVoK>

5 – Hickman, A., and Robison, J., 2020. “Is working remotely effective? Gallup research says yes.” Gallup. Available from: <https://cutt.ly/ggWsB7V>

6 – Ibid.

7 – Meunier, J., 2020. “How GitHub Manages Hundreds of Remote Employees, Thousands of Miles Apart”. Alliance Virtual Offices. Available from: <https://cutt.ly/1gWsMB1>



Recommendation 5: To participate in developing this new corporate culture, we strongly encourage companies to establish an internal assessment to understand potential barriers to remote working and adopt a few solutions applicable to addressing these barriers. The working group also underscores the need for new processes and training regarding how to manage remote workers, and in particular those with geographically and culturally diverse teams; as well as how to maintain vital human interactions of a team or workforce, such as recruitment, onboarding, providing networking and training opportunities and developing relationships remotely.

3. Facilitate procurement from startups and scale-ups to leverage external expertise

Companies could also leverage innovative solutions from startups through procurement channels. That would provide access to new types of solutions – often more competitive – but would require a more collaborative mindset and an extensive rethink of procurement processes¹.

Despite representing new opportunities, EU companies are reluctant to buy from startups irrespective of industry. Based on an EIB and World Economic Forum report from 2019, “European companies and organizations are hesitant to buy new products from innovative young firms and often go for established logos. EU firms are twice as likely to focus on adopting existing innovations, while only 8% can introduce new products to their markets. The result is that young firms turn to the US, where established companies are more willing to test new products and experiment with new technologies.”²



Recommendation 6: There are several barriers to rethinking procurement processes, mostly related to a lack of internal leadership pushing to shake things up. To foster this approach, we suggest simplifying companies’ procedures and requirements to work with startups and scale-ups (within a predefined framework), developing a KPI that would measure companies’ share of investments in young EU tech companies, through their procurement spending which would be openly shared at an EU level.

1 – Mocker, V., Bielli, S., Haley, C., 2015. “Winning together, a guide to successful corporate-startup collaborations”, Nesta, p11. Available from: <https://cutt.ly/vgWs92k>

2 – Tsanova, I., Havenith, R., 2019, “Europe is no longer an innovation leader. Here’s how it can get ahead” World Economic Forum. Available from: <https://cutt.ly/ugWs8bk>

V. Overcoming Market Frag- mentation

One of the biggest obstacles facing the European innovation ecosystem is market fragmentation. **Because there is no large and unified market readily available for companies looking to expand, market fragmentation puts Europe ‘at a structural disadvantage’ in terms of innovation compared to large homogenous markets (e.g., the US, China, etc.¹). Additionally, Europe’s governance structures generally make “heavy public investment and intervention more challenging or slower²”.**

Member states each have their regulatory framework, which hinders innovative businesses’ ability to grow and expand. **The European Parliament itself notes that “although the EU market is the largest in the world, it remains fragmented and is not sufficiently innovation-friendly³.”**

Market fragmentation generates increased costs that companies do not face when seeking to expand in large unified markets instead (e.g. in the US). The World Economic Forum suggests that many innovative European companies never grow beyond the startup phase, partly due to market fragmentation⁴: rules, regulations, taxes, and standards vary across European member states, thus hampering cross-border investments and business expansion. However, startups require access to large unified markets before they can develop the financial capacity to expand beyond their borders to countries with different regulatory frameworks:

They need to establish a sufficiently large pool of potential customers before they can scale up their business. Only then can they build up the financial resources, resilience and innovation power to expand internationally and globally. However, fragmentation of the local customer base in terms of law and regulation will hold them back: aspiring global service providers in the EU have to deal with different legal and regulatory frameworks already across the internal market, i.e., the (fragmented) laws of all Member States⁵.

Market fragmentation imposes different rules depending on the sector in which companies operate. For instance, FinTech startups struggled to scale up in the EU because there are different Know Your Customers (KYC) rules, business conduct rules (e.g. financial promotion, disclosure requirement, complaints handling), or different rules on IBAN format, etc⁶. **These variations across countries suggest that innovative companies cannot reap the benefits of the Single Market to their fullest extent, as they cannot have access to a large pool of consumers before having to deal with different regulatory frameworks, and that they have to limit their ambitions because they do not have the room to expand and grow before they encounter regulatory obstacles.** They comply with the



regulation in other countries, which adaptation costs linked to changes in contracts and other practices, modification of standards and equipment or training of personnel, and additional administrative burdens due to different information obligations required by national legislation⁷.

Market fragmentation also engenders non-regulatory additional costs (i.e., development of distribution networks, advertising, transport, personnel training, etc.), and additional costs linked to intellectual property rights, such as filing, maintenance and protection of patents diverge across countries⁸.

The EU currently fares poorly in comparison to its global competitors. A 2018 McKinsey survey shows that the EU lags behind the US investment in innovative issues such as intellectual property or computerized information. Its digitization is also less advanced than that of the US⁹. Furthermore, McKinsey’s report also shows that for the past 20 years, Europe’s share of “superstars” (i.e. the top 10% of companies, whose share of investment in R&D is generally more than double that of other firms) has fallen by around 50%, despite remaining constant for the US and Canada and increasing significantly for the Asia-Pacific region¹⁰.

1 – McKinsey, 2019. Discussion Paper: Innovation in Europe, Changing the game to regain a competitive edge. Available from: <https://cutt.ly/CgWs7GS>

2 – McKinsey, 2019, p.14

3 – Gouardères, F., 2020. Fact Sheets on the European Union: Innovation policy. European Parliament. Available from: <https://cutt.ly/EgWs64o>

4 – Tsanova, I., Havenith, R., 2019, “Europe is no longer an innovation leader. Here’s how it can get ahead” World Economic Forum. Available from: <https://cutt.ly/sgWdeTm>

5 – Expert Group on Regulatory Obstacles to Financial Innovation (ROFIEG), 2019, Report to the European Commission, “30 Recommendations on regulation, innovation and finance”. Available from: <https://cutt.ly/egWdtgh>

6 – Ibid.

7 – Maroulis, N., Zoboli, E., Kably, N., Maier, F., Otte, S., Bougas, K., and Gkogka, A., 2018. “Regulatory barriers and cross-border commercialisation of innovation”, Business Innovation Observatory. Available from: <https://cutt.ly/QgWdy43>

8 – Ibid.

9 – McKinsey, 2019. Discussion Paper: Innovation in Europe, Changing the game to regain a competitive edge, p.8.

10 – McKinsey, 2019. Discussion Paper: Innovation in Europe, Changing the game to regain a competitive edge, p.11.

A. The EU must prioritize efforts to take the lead in a few key innovation domains



We believe the EU can achieve a leading global role in the innovation ecosystem. It has already successfully built its leadership and set international data management standards through the 2018 GDPR (General Data Protection Regulation). The GDPR guarantees unified rules across the whole of the EU (and foreign companies targeting EU citizens) in terms of data governance and privacy protection, making it “a global benchmark for privacy regulation”. By implementing this significant measure, the EU has positioned itself as a global leader, to such an extent that large tech companies have been pressuring the US government to take similar steps². Following the implementation by the EU of the GDPR in 2018, the state of California similarly took steps towards more significant protection of citizens’ data, with the California Consumer Privacy Act (CCPA), which was passed in 2018 and became effective in 2020. Although the CCPA differs from GDPR in various aspects, it still extensively draws inspiration from the European regulation (e.g., the right to “be forgotten³”). This legislation significantly impacts not only the State of California, but the whole of the US: because of “the sheer number of Californians,” the vast majority of American businesses, regardless of whether they originated in California, will have to comply⁴. Similarly, Japanese regulators strengthened data protection requirements to be recognized by the EU as providing an adequate level of protection⁵. This decision subsequently facilitated the implementation of the EU-Japan Economic Partnership Agreement. These examples illustrate the EU’s potential influence when it acts in unison, and the global positioning it can adopt.

However, generally speaking, while the EU has an ambitious innovation strategy, it lacks clear and attainable goals and a considerable political momentum to make innovation an imperative and unifying cause.

In 2010, when the EU was criticized for its lack of efficiency with regards to innovation, the Commission launched the Innovation Union strategy; the governance of innovation was notably critiqued because of its complexity. A 2010 CEPS report⁶ noted that **the overlap between funding instruments and the multitude of decision-makers hindered the European innovation system**. This report also highlighted the fragmentation of the European market, the funding tools, and institutional competencies as clear obstacles to a more competitive place in the global innovation ecosystem.

The Innovation Union, aimed at improving “conditions and access to finance for research and innovation in Europe so that innovative ideas can be turned into products and services that create growth and jobs,” and sought to create an actual single European market for innovation, “which would attract innovative companies and businesses⁷.” The



1 – Benady, D., 2018. “GDPR: Europe is taking the lead in data protection”. Raconteur. Available from: <https://cutt.ly/rgWdsWe>

2 – Foster, A., 2019. Tech giants urge the US to adopt GDPR laws. IBC.org. Available from: <https://cutt.ly/mgWdhfd>

3 – Singh, N. K., 2020. “What You Need to Know about the CCPA and the European Union’s GDPR”. American Bar Association (Online). Available from: <https://cutt.ly/vgWdlIE>

4 – Sirota, D., 2019. California’s new data privacy law brings U.S. closer to GDPR. Tedcrunch.com. Available from: <https://cutt.ly/4gWdcwH>

5 – Healey, R., 2020. “How the Japan APPI compares to GDPR Are you Compliant?”. Foriniti (Online). Available from: <https://cutt.ly/dgWdndd>

6 – CEPS Task force, 2010. “A new approach to innovation policy in the European Union. Innovation Policy: Boosting EU competitiveness in a global economy.” Available from: <https://cutt.ly/RgWdWto>

7 – Gouardères, F., 2020. Fact Sheets on the European Union: Innovation policy. European Parliament. Available from: <https://cutt.ly/ugWdYzt>

Innovation Union proposed measures for increased coherence between European and national research policies. It also implemented several instruments to monitor progress towards the 2020 target of 3% of EU GDP being invested in R&D, such as the Innovation Union Scoreboard and the Regional Innovation Scoreboard. However, the 3% target has not yet been reached¹. While some countries, such as Sweden and Austria, indeed spent above 3% of GDP on R&D in 2016, nine other member states limited R&D spending to below 1%. The diverging national policies are a large contributing factor to the European market's fragmentation and hold back the EU's global effort². **While the Innovation Union has fostered improvements in mitigating the consequences of market fragmentation on innovation, it remains comprehensive in terms of scope. Still, it lacks strong impetus to truly make a difference and become a global leader in innovation.**



As the end of Horizon 2020, the Innovation Union's financial instruments, is approaching, the EU has presented Horizon Europe as its replacement. This research and innovation program will run from 2021 to 2027 and proposes an additional €30 billion from Horizon 2020. **While Horizon Europe does identify specific missions, it remains dispersed and aims to tackle a wide variety of sectors and issues at once. This divides effort and investment, and therefore may reduce the impact and efficiency of the policy.** Horizon Europe is divided into three pillars: Excellent Science, Global Challenges and European Industrial Competitiveness, and Innovative Europe. Compared to Horizon 2020, this new strategy identifies 'mission areas,' common to all pillars: adaptation to climate change, healthy oceans, climate-neutral and smart cities, soil health and food, and cancer³. The first pillar focuses on science and scientific research. In the second pillar, the policy further identifies 'clusters': health; culture, creativity, and inclusive society; civil security for society; digital, industry and space; climate, energy and mobility; food, bioeconomy, natural resources, agriculture and environment. The third pillar supports the innovation ecosystems and includes the European Innovation Council which aims to support startups and SMEs.

1. Be selective

To successfully implement a renewed innovation strategy, the EU must identify and rally behind key strategic sectors that would benefit most from increased investment. However, the EU currently lacks focus when it comes to innovation. The EU has introduced the innovation principle in its policymaking to "ensure that EU legislation is analyzed and designed to encourage innovation to deliver social, environmental and economic benefits and help protect Europeans⁴". This principle suggests that **although innovation has been identified as a priority, that priority is diffused throughout all areas of the EU's expertise, rather than firmly focused on specific domains.**

The EU's current innovation strategies for smart specialization, as part of the Cohesion Policy for 2014-2020, RIS3, encourages member states to identify the "knowledge specializations that best fit their innovation potential⁵." **While there are common sectors amongst regions (e.g. energy, health, tourism, sustainable innovation, etc.), some regions have developed different sets of priorities than others⁶. Consequently, the global European innovation strategy lacks focus, as each member state focuses its efforts on different domains.** As previously mentioned, member states also put varying investment levels in their innovation strategies, which further dilutes global efforts.

The EU's innovation policy is also split across several systems and financial instruments, which all set diverging priorities⁷:

- The Innovation Union carries the target of investing 3% of GDP in R&D by 2020 and is part of a broader effort to promote a smart, sustainable, and

1 – Eurostat, 2020. Europe 2020 indicators – R&D and innovation. Available from: <https://cutt.ly/1gWdlZz>

2 – Tsanova, I., Havenith, R., 2019, "Europe is no longer an innovation leader. Here's how it can get ahead" World Economic Forum. Available from: <https://cutt.ly/2gWdPZc>

3 – European Commission, 2019. « Horizon Europe, the next EU research & innovation investment programme (2021-2027) ». Available from: <https://cutt.ly/rgWdDmk>

4 – European Commission, 2019. The Innovation principle. Available from: <https://cutt.ly/ugWdGjP>

5 – European Commission, 2014. NATIONAL/REGIONAL INNOVATION STRATEGIES FOR SMART SPECIALISATION (RIS3), COHESION POLICY 2014-2020. Available from: <https://cutt.ly/BgWdJY9>

6 – Ministère de l'Enseignement Supérieur, 2013. « Cartographie des priorités d'innovation et des modèles de spécialisation en Europe. » Horizon 2020. Available from: <https://cutt.ly/jgWdLY3>

7 – All following examples and quotes from Gouardères, 2020.

inclusive economy. Horizon 2020 is the “financial instrument which provides for the implementation of the Innovation Union”, and it notably focuses on “real challenges facing society, simplifying access, involving SMEs, strengthening financial instruments, supporting public procurement of innovation, facilitating collaboration, and supporting research on public-sector and social innovation”.

– Meanwhile, the Cohesion policy also influences innovation through the European Regional Development Fund, allocating resources for member states, focusing on the low-carbon economy and competitive SMEs.

– Additionally, the Commission has partnered with the European Investment Bank Group, to implement “a series of integrated and complementary financing tools and advisory services offered by the EIB Group, covering the entire value chain of research and innovation in order to support investments from the smallest to the largest enterprises.”

– In 2014, the Investment Plan for Europe was created and unlocked around €315 of public and private investment. The key areas targeted by these funds are “infrastructure, research and innovation, education, renewable energy and energy efficiency, as well as risk financing for SMEs.”

This multitude of instruments fragments innovation efforts across the EU, leading to spreading resources and dynamism across many fields, consequently preventing the EU from unequivocally taking the lead in any of these domains.

The 2020 budget accord led to the cut of a Commission-backed health initiative and research programs, decreasing the innovation-focused part of the next 7-year budget¹. The Horizon Europe program is also facing severe cuts², which may further challenge the EU’s struggle to build its innovation leadership.

1 – Herszenhorn, D. M., 2020. “Von der Leyen laments ‘regrettable’ cuts in budget accord.” Politico EU. Available from: <https://cutt.ly/FgWftCv>

2 – Euractiv, 2020. “L’UE conclut un pacte de relance historique, mais coupe dans son budget et recule sur l’État de droit”. LesFrançais.press. Available from: <https://cutt.ly/XgWfu4g>





Recommendation 7: To address this issue, the working group encourages the EU to identify a limited number of priority innovation fields on which it should focus efforts and resources. **The working group identified three key innovation fields representing major business opportunities while aligning with the EU political agenda: Cybersecurity, Climate, and Health.**

– **Firstly, the working group highlights cybersecurity as a priority target for innovative investment. The EU has a dedicated Agency for Cybersecurity, which was strengthened by the 2019 European Cybersecurity Act¹. This act also established the European cybersecurity certification framework which oversees the governance and rules for EU-wide certification of ICT products, processes and services. The EU thus possesses a solid cybersecurity framework that would be able to carry strong cybersecurity innovation efforts. In a global context, where large digital corporations are less and less trusted, and where data has become a valuable asset, the EU can position itself as a leader for data protection and earn its citizens’ trust by advocating for further accountability and traceability in the digital sector. Furthermore, because confidence and security are already at the core of the European Digital Strategy, the EU has a legitimate voice and expertise on these issues².**

– **The working group also advises that European innovation efforts target climate innovation, in line with the Commission’s Green Deal. Breakthrough innovation will be key to a successful ecological transition, and to reach the 2050 carbon neutrality target that the EU has set. As the Delors Institute predicts, policies tied to the EU Green Deal will “generate a wave of climate-related opportunities and risks that only companies that innovate will be able to ride³.” Yet, EU investment in clean energy R&D has decreased since**

1 – Digibyte, 2019. “The EU Cybersecurity Act brings a strong agency for cybersecurity and EU-wide rules on cybersecurity certification”. European Commission. Available from: <https://cutt.ly/3gWdVof>

2 – European Commission, 2020. “Strengthening trust and security”. Available from: <https://cutt.ly/WgWdNxI>

2015¹. The EU must embrace climate innovation, and focus its efforts on supporting such innovation, in order to assert its global leadership.

– Finally, the working group identifies health as a strategic sector for European Innovation. In the wake of the Covid-19 crisis, independence and self-sufficiency in the health sector have proven crucial, and the EU has proven to lack some agency in that area. Moreover, the health sector presents vast innovative business opportunities: for instance, artificial intelligence is predicted to largely impact businesses' competitive advantage, with a €105 billion impact potential on smart health, so long as companies are efficiently supported in their transition². EU-wide innovation efforts should therefore also focus on the health sector and the opportunities it presents.

1 – Pellerin-Carlin, T., and Sweatman, P., 2020. WHAT BUSINESSES CAN DO FOR THE EUROPEAN GREEN DEAL. Institut Delors. Available from: <https://cutt.ly/UgWd73e>

2 – Cunliff, C., and Hart, D. M., 2019. The Global Energy Innovation Index: National Contributions to the Global Clean Energy Innovation System. Available from: <https://cutt.ly/ngWfqSX>

3 – European Commission, 2020. “Strengthening trust and security”. Available from: <https://cutt.ly/QgWfrw4>

2. Build a mythology

The US has historically been very successful at building powerful narratives around specific causes, proving and reinforcing its global leadership role. The US' innovation leadership can be explained partially by their ability to create powerful storytelling. Once the EU identifies key priority innovation fields, it should draw its inspiration from the US to implement similar communication strategies and build its own mythology.

The Space Race and Silicon Valley are two instances where the US government succeeded in initiating a myth around innovation, which enabled various actors' cooperation and informed the international recognition of their expertise. The space race and the domination of the Internet are both based on the myth of the frontier, which in the mind of Americans is "tied to a drive to create, to go forth, to become, to make and do," i.e., to innovate¹. Both the Space Race and the Silicon Valley were proof to most Americans that cooperation between the government, academic actors, and private industry enabled American technology's superiority².

Starting in 1955, in the Cold War era, the space race became the embodiment of America's dominance, through the pre-eminence of its technological capabilities and innovations³. The US government heavily invested in NASA, more so than any other scientific program⁴, thus contributing to the narrative around American innovation's superiority. The Apollo mission is a powerful illustration of this narrative⁵. Conquering space was yet another frontier that the US would successfully tackle. Frederick Jackson Turner's 1893 essay on the Frontier⁶ was indeed heavily referenced during the space race era, as **spaceflight was paralleled to the conquest of new land and improved society. These dynamics enabled the creation of a mythical dimension to the space race and drove support for aeronautic innovation.** The space race was even a catalyst for American innovation as a whole: for instance, in 1900, the ratio of scientists and engineers per US citizens was 1:2,000; but by the 1970s, it drastically increased to 1:120⁷. This emphasis on communication can also be attributed to the fact that in the US, government-funded agencies rely on public support. NASA is accountable to US citizens who may vote out public funding for such agencies⁸. Thus, NASA must communicate efficiently on its innovations in order to convince US citizens of its importance. EU agencies and programs are not bound to such a level of direct accountability, and the accountability arrangements that do exist are underused⁹.

Alongside NASA, Silicon Valley also became a global symbol of innovation, and helped launch the US at the forefront of the global digital and tech revolution. Businesses and universities rallied alongside the government to create a unique ecosystem, where public authorities, private investors and academics came together to innovate. Silicon Valley started truly soaring during the Cold War era, as the US government investment was flooding in. The previously unheard of continuous investment targeted at the tech companies implemented in Silicon Valley fostered "a culture of risk-taking and innovation¹⁰". The development of the Internet was also equated to the myth of the frontier: "the contemporary version of the frontier myth presents the Internet as a freewheeling space crafted by wily pioneers and ingenious scientists¹¹". **Successfully building and communicating the myth of Silicon Valley, allowed the US to attract increasing investment and researchers, thus producing ever-better innovation and technology in a snowball effect.** Good communication of an innovation appealed to further investment, which strengthened the innovation, and hence the surrounding myth.

The US's investment in innovation was also in part successful because it was often protected, and the technology stayed within the territory. For instance, the Defense Advanced Research Projects Agency (DARPA), which is part of the Department of Defense and whose task is research and development of new technologies for military use, played a large role in building the infrastructure that steered efforts during the Space Race¹². DARPA played a similarly important role in developing the modern internet and all related technologies, such as speech recognition, touchscreen displays, acce-

1 – Shuler, J., 2005. "Ever Onward: The Frontier Myth and the Information Age". *Fast capitalism*, 1(1). Available from: <https://cutt.ly/mgWfwpwy>

2 – Wuthrich, B., 1999. "The U.S. Space Program and the National Interest". Available from: <https://cutt.ly/NgWfaUr>

3 – Ibid.

4 – Ibid.

5 – Launius, R. D., 2005. "Perceptions of Apollo: Myth, nostalgia, memory or all of the above?". *Space Policy*, 21(2), pp. 129-139.

6 – Turner, F. J., 1893. "The significance of the Frontier in American History". Excerpts from the National Humanities center. Available from: <https://cutt.ly/fgWfs8J>

7 – Jastrow, R., and Newell, H. E., 1972. "The space program and national interest". *Foreign Affairs*.

8 – Nasa Headquarters Library, 2019. "Public Opinion of the American Space Program". *Nasa.gov*. Available from: <https://cutt.ly>

9 – Busuioic, M., 2010. *The Accountability of European Agencies: Legal Provisions and Ongoing Practices*. Available from: <https://cutt.ly/qgWfkW8>

10 – Loeffler, J., 2019. "The Origin Story of Silicon Valley—and Why We Shouldn't Try to Recreate It". *Interestingengineering.com*. Available from: <https://cutt.ly/rgWfzF2>

11 – Shuler, J., 2005. "Ever Onward: The Frontier Myth and the Information Age". *Fast capitalism*, 1 (1). Available from: <https://cutt.ly/tgWfvRr>

12 – Weinberger, S., 2008. "Cyberwarfare: Darpa's New 'Space Race'". *Wired*. Available from: <https://cutt.ly/IgWfnEP>

lerometers, wireless capabilities and artificial intelligence¹. The innovation investment driven through DARPA is developed only by American actors because it is initially targeted towards military use. This protectionist measure catalyzes resources and enables the US to retain innovative technology, giving them a head start on other countries.

Innovation does not necessarily best flourish in the place of its invention, but rather where it is best marketed and where actors best communicate and capitalize on it. Many innovations that are today accredited to the US and which show their highest potential and best performances in the US were invented in Europe. The World Wide Web, which paved the way for the modern internet, was born in Switzerland, at the CERN (European Organization for Nuclear Research²). Yet the internet truly gained traction and fulfilled its innovative potential in the US. Similarly, Britain had developed a digital computer in the 1940s, but it never achieved global traction and recognition to the same extent as American innovations did³.

A more contemporary example that communication is often as important as the technology to ensure an innovation's success and its outreach is that of Tesla. Tesla is far from being the only company producing electric cars or developing self-driving vehicles: Toyota has an extensive range of electric vehicles. Both Waymo and Cruise develop self-driving vehicles with higher autonomy than Tesla cars⁴. Yet, Tesla is by far the most renowned brand: in June 2020, its shares hit over \$1000, making it the most valuable car company in the world (before its share price dropped again⁵). **What differentiates Tesla from other companies is its mythology and the communication it has built surrounding the brand.** From its beginnings, Tesla has promoted an innovative narrative, claiming to initiate global change in transportation and positioning electric (and potentially self-driving) vehicles as the future for many populations. **Tesla's story contributed to the universal reporting on the brand and attracted investors and consumers. Tesla is proof innovation's success does not always rely solely on its technology and that the global public perception of that technology plays a crucial role⁶.**



1 – DARPA, nd. “Paving the Way to the Modern Internet” Available from: <https://cutt.ly/ggWfQE6>

2 – Evans, A., 2012. “Where the web was born”. National Geographic (Online). Available from: <https://cutt.ly/fgWfWTU>

3 – Ibid.

4 – DeBord, M., 2020. “Tesla has made a huge bet on self-driving technology that's different from its rivals. This is how it works.” Business Insider India. Available from: <https://cutt.ly/9gWfFb0>

5 – Morris, J., 2020. “How Did Tesla Become The Most Valuable Car Company In The World?” Forbes (Online). Available from: <https://cutt.ly/mgWfHit>

6 – Mitchell, R., 2020. “Tesla's insane stock price makes sense in a market gone mad”. La Times (Online). Available from: <https://cutt.ly/hgWfKns>



Recommendation 8: The working group recommends that the EU intends to replicate this critical leadership driver by developing compelling and inspiring narratives around the selected key innovation domains: cybersecurity, climate, and health, while articulating this narrative around the key value of trust. Such communication initiatives should be evident and engage all types of audiences, from public and private researchers and innovators, to representatives of the business world and the public. It is also crucial that the EU communicates adequately on these efforts, their motivation, and their aim, and how they serve European citizens, to foster their faith and public support. In this way, the working group was pleased to witness the space-race analogy used by Ursula von der Leyen when presenting the Green deal as Europe's man on the moon moment.

We suggest that where the US built a narrative around the frontier myth, the EU should position itself as an institution acting for trust and efficiently communicate on this purpose to establish it as a founding innovation myth. The narrative of trust fits the EU's ongoing efforts to protect and defend its citizens. In opposition to other international actors, such as China, the EU has continuously aimed to position itself as a truthful institution, acting to protect its citizens and fighting against false reporting and disinformation¹. The EU has chiefly presented itself as an institution which citizens can trust on cybersecurity: taking several steps to protect citizens' data, climate: positioning itself as a global leader on climate change and rooting its actions on science-based claims and health: facilitating cooperation between member states during the Covid-19 pandemic and accurately reporting the number of cases.

1 – European Commission, 2020. "Tackling online disinformation." Available from: <https://cutt.ly/pgWfZl5>

3. Focus resources

Ensuring the targeted use of financial resources has been a critical success factor in the US innovation strategy. However, as previously mentioned, the EU lacks a focus on innovation, and this lack of focus also shows in the allocation of funding.

The European Commission proposed but later retracted a €100 billion budget for Horizon Europe, cutting down the budget agreement with member states to around €80 billion¹. Many dissenting voices have come forward to argue that this budget is not sufficient, such as the budget team of the European Parliament².

In 2018, EU member states' total investment in R&D amounted to €318,1 billion³, when the US total budget for R&D was €495 billion (\$580 billion)⁴. **The EU innovation budget is not only lower than the US innovation budget, but it is often even lower than some individual companies.** When looking at specific investment sectors, such as AI, the EU has similar, if not fewer investing powers than some large multinational corporations. The EU's AI and blockchain fund, run by the European Investment Fund, has made €100 million available in 2020 to support companies working in this sector⁵. Meanwhile, Google bought an AI startup for \$400 million (approx. €330 million) in 2014⁶, and launched a \$25 million (€21 million) fund for supporting AI projects⁷. Similarly, Microsoft has invested \$40 million into AI technologies that solve humanitarian issues, as well as a \$50 million pledge in AI for Earth, helping to fight climate change, and \$25 million in AI for accessibility⁸, for a total of \$115 million (€96 million).

The only way for the EU to compete with tech giants, is to target its investment into a few sectors to concentrate resources as it does not have the same overall financial capacity. Regardless of the money invested in innovation programs, the most crucial part is its division and spending between sectors.

The entire European startup and innovation ecosystem and deep tech programs and investment should also be targeted around these three key sectors. As deep tech is rapidly gaining in relevance and importance in the global innovation ecosystem⁹, the EU has an opportunity to position itself as an influential actor. Despite having fallen behind other nations in entrepreneurship and startups, the EU has the potential "to gain leadership in deep tech by leveraging the continent's scientific talent". As we have demonstrated, while "European research institutions certainly have strong reputations in areas like AI", "they have often served as sources of talent for companies outside the region¹⁰," serving as an example for Europe which should position itself on deep tech innovation efficiently.

To do so, the working group recommends targeted deep tech investment in health, climate and cybersecurity, to foster large-scale impactful, high added-value, and disruptive innovation in these key sectors. The EU Innovation Fund, one of the world's largest funding programmes for demonstrating innovative low-carbon technologies, is a first step in that direction. This fund, which will amount to around €10bn over the next ten years¹¹, should focus on upcoming deep tech opportunities to remain relevant. Similar funds should be implemented, and target deep-tech innovation in the identified key sectors.

In response to the Covid-19-induced economic crisis, the EU has pledged "€166 million, via the European Innovation Council (EIC) Accelerator Pilot, to 36 companies set to combat the coronavirus pandemic" as well as "€148 million to another 36 companies set to contribute to the recovery plan for Europe, bringing the total investment from Horizon 2020, the EU's research and innovation program, to €314 million in this round¹²."

1 – Bayer, L., and Busquets Gardia, A., 2020. "The EU budget and recovery deal – in charts". Politico EU (Online). Available from: <https://cutt.ly/KgWfCiG>

2 – De la Baume, M., and Greenhalgh, L., 2020. "European Parliament 'cannot accept' aspects of EU budget deal, say negotiators". Politico EU (Online). Available from: <https://cutt.ly/ZgWfBnm>

3 – Eurostat, 2019. "R&D expenditure in the EU increased slightly to 2.07% of GDP in 2017". Eurostat. Available from: <https://cutt.ly/GgWf0YC>

4 – Congressional research service, 2020. "Uhttps://cutt.ly/kgWgyHV.S. Research and Development Funding and Performance: Fact Sheet". Available from: <https://cutt.ly/kgWf2Zk>

5 – European Commission, 2019. "EU Artificial Intelligence and Blockchain investment fund to invest 100 million euros in startups in 2020" Available from: <https://cutt.ly/0gWf8N9>

6 – Tech Advisor, 2019. "How tech giants are investing in artificial intelligence". Available from: <https://cutt.ly/1gWf7Zh>

7 – Baron, E., 2018. "Google to Invest \$25M in AI Research". Govtech.com. Available from: <https://cutt.ly/WgWgqbN>

8 – Levy, N., 2018. "Microsoft commits \$40M over 5 years to AI for Humanitarian Action initiative". GeekWire. Available from: <https://cutt.ly/YgWgtrt>

9 – BCG and Hello Tomorrow, 2019. "The Dawn of the Deep Tech Ecosystem". Available from: <https://cutt.ly/kgWgyHV>

10 – O'Brien, C., 2019. "Deep tech investment surges across Europe as the ecosystem expands". Venture Beat. Available from: <https://cutt.ly/TgWgoZw>

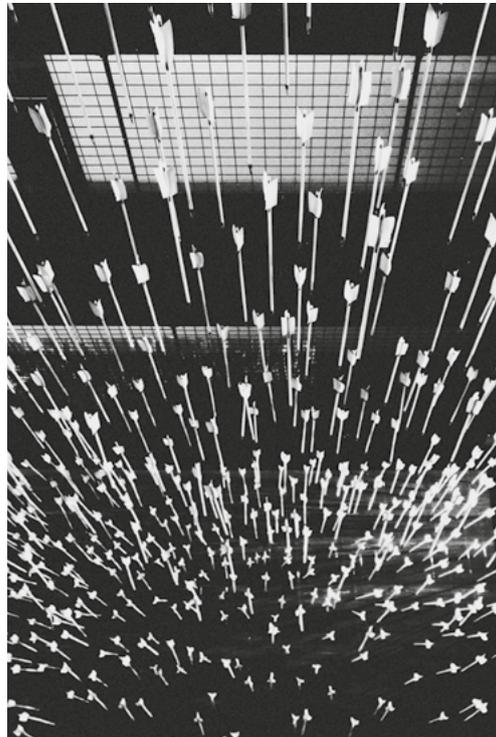
11 – European Commission, nd. "Innovation Fund". Available from: <https://cutt.ly/9gWggDq>

12 – European Commission, 2020. "Coronavirus: EU grants €314 million to innovative companies to combat the virus and support recovery". Press Release. Available from: <https://cutt.ly/zgWgkLG>



Recommendation 9: For the EU to financially catch up with innovation giants, the working group recommends focusing resources on a small number sectors. Indeed, the EU must identify and rally behind key strategic industries that would benefit most from increased investment. As such, financial resources will weigh in more in comparison to competitors.

Additionally, we believe that a better concentration of resources, will reassure and encourage investors, and propel the EU as a global innovation leader. Therefore, we suggest that the EU focuses financial resources on the aforementioned essential priority innovation fields cybersecurity, climate, and health.



B. The EU must bolster harmonization in these key innovation domains

The lack of focus in terms of an innovation strategy, paired with a significant disparity of regulation, adds complexity and hinders companies' development at the EU level. Regulatory discrepancies stem from the varying national legal frameworks, and the EU directives' gold plating by some member states.

Regulation on a variety of issues is not homogenous across all EU member states, which contributes to the fragmentation of the Single Market. **While the EU legislates on trade issues, member states retain some or all competencies in many areas such as consumer protection, energy, environment, health, industry, tourism, etc.¹ Thus, legislation across all these fields can vary to an extent from country to country.** This regulatory fragmentation proves to be a burden for companies trying to expand beyond the country they started with, as compliance with new regulation generates costs and requires additional administrative and financial resources. **For instance, in France, gold plating is symptomatic of normative inflation and harms the EU single market by hampering competition and penalizing French companies².** Gold plating occurs when national legislators strengthen or modify EU directives' provisions when they become national law. Gold plating may also include requirements beyond the European standard's initial rules, increased obligations, the withdrawal of potential derogations or exclusions, or the increase of penalties for non-compliance. According to a French Senate report³, which documents 75 examples of gold plating in French legislation, it impacts French companies on five levels, by generating 1) administrative burdens, 2) additional production costs, 3) legal risks, 4) commercial constraints, and 5) vulnerability to economic intelligence. As these obligations do not apply to other European companies, they generate direct and indirect costs that disproportionately disadvantage French companies and hinder their competitiveness.

Developing common EU regulation and fighting against gold plating at the national level is thus the best way to create an environment that fosters innovation. However, there is still a long way to go, and this harmonization process is likely to take decades to come into play more fully. Based on this assessment, the working group recommends that the EU starts focusing on a few concrete and targeted actions that could be implemented in a relatively short time frame.

1. Create common regulators

For the EU to take the lead on identified key innovation domains, there must be an increased harmonization of the legislation regulating these domains. However, in many instances, even when member states manage to agree on standard EU regulations, these regulations are not enforced homogeneously by national regulators. For example, there are standard EU regulations in the field of competition, privacy, media or even telecom. The various national regulators have still developed different interpretations, creating additional complexity and constraints for businesses and innovators across the EU.

The EU has the ability to create regulatory agencies "that provide information and advice, make regulatory decisions, and coordinate regulatory networks⁴." **While the working group recognizes that creating common regulators and enforcing their authority on all EU member states is a challenging and rather complex journey, we believe it is paramount. To adopt a pragmatic approach, we suggest starting with regulators overseeing the key innovation fields that were previously identified: Cybersecurity, Climate and Health.**

To become a cybersecurity leader, data protection law must be applied consistently across the EU. The European Data Protection Board (EDPB), set up by the GDPR, is an independent European body, which ensures the "consistent application of data protection rules throughout the EU⁵". In the meantime, there are currently different Data Protection Authorities (DPAs) in each member state, whose role is to supervise, through investigative and corrective powers, the application of the data protection law⁶, and who tend to enforce different interpretations of the law. Criticism of these agencies

1 – European Commission, nd.a. Areas of EU action. Available from: <https://cutt.ly/sgWgzTV>

2 – Vie-publique.fr, 2018. « Qualité du droit: lutter contre la surtransposition des directives européennes ». Available from: <https://cutt.ly/qgWgcnf>

3 – Sénat, 2018. Rapport d'information n° 614 du Sénat. Available from: <https://cutt.ly/HgWgbmF>

4 – Kelemen, R. D., 2012. "European Union Agencies", in: The Oxford Handbook of the European Union. Edited by Jones, E., Menon, A., and Weatherill, S. Oxford University Press.

5 – European Commission, nd.c Data protection in the EU. Available from: <https://cutt.ly/ugWgQuH>

6 – European Commission, nd.d What are Data Protection Authorities (DPAs)? Available from: <https://cutt.ly/ogWgEor>

is because they fail “to work hand-in-hand to enforce the rules”, and instead “end up being stymied by divergent national legal systems, cultural differences and an outmoded information exchange system¹.” Furthermore, the various EU authorities in charge of data protection have been called out for the “increasingly glaring differences” in how they interpret the rules, and for “breaking out of the one-stop-shop system,” thus creating a “patchwork of privacy regimens instead of a single European landscape².”

As the recent European Court of Justice ruling invalidating the Privacy Shield has shown, data protection issues are still far from being centralized. As the ECJ declared the Privacy Shield agreement null, it also reaffirmed the legality of the Standard Contractual Clauses (SCCs) used to export data out of Europe and stressed that DPAs have a “duty to check whether data transferred abroad is protected to a European standard³.” Thus, the various individual DPAs are currently the organizations in charge of ensuring data protection for European citizens in their given member state.

There is a growing recognition that competition policy has an important role to play in climate protection. However, when it comes to competition, the approaches to sustainability lack consistency. In 2019, Margrethe Vestager, European Commissioner for Competition explicitly stated that: “all of Europe’s policies, including competition policy, will have their role to play” in supporting sustainability⁴. Indeed, competition, which is one of the EU’s exclusive competencies, has a significant impact on climate, as it directly affects mergers and horizontal agreements. Given the cost of sustainable innovations and environmentally-friendly technologies, businesses are often prone to work together to develop such solutions. These collaborations can take multiple forms including joint research and development of ‘green’ technologies, commitment to minimum standards, and combining resources⁵, and are therefore directly regulated by competition law.

Competition authorities are increasingly “giving greater weight to sustainability factors when assessing the impact of measures on consumer welfare⁶.” However, there still is no harmonized approach to sustainability when it comes to competition because there is no common EU competition regulator⁷. “The European Commission and the national competition authorities in all EU Member States cooperate through the European Competition Network (ECN). Through the ECN, the competition authorities inform each other of proposed decisions and take on board comments from the other competition authorities⁸. However, the ECN lacks binding powers.

Taking a leadership position on the health innovation landscape requires the EU to implement homogenous health regulations. However, when it comes to health, the EU has limited competencies as it “respects the responsibilities of the Member States for their health systems⁹.” The only area of shared competence – allowing the EU to support, coordinate or supplement Member States’ actions¹⁰- is “common safety concerns in public health matters¹¹.”

Because of the lack of competence in the field of health, internal market regulation is bound to play a central part in achieving a more harmonized health environment in the EU. Indeed, health policy made on the legal basis of its internal market is consequential¹². “The EU has great powers to promote the development and regulation of its internal market. [...] This legal authorization means that the effective way to regulate, for example, pharmaceuticals or professional qualifications is as a part of the development of the internal market.” Additionally, a central emphasis on health innovation seems to be placed on consumer-facing solutions (such as self-care, prevention and wellness, or triage¹³), thus directly impacting consumer right regulation. To this day, there is no EU standard consumer right regulator. The European Consumer Consultative Group (ECCG) is the Commission’s primary forum to consult with national and European consumer organizations¹⁴, but it does not have binding authority.

1 – Vinocur, N., 2019. ‘We have a huge problem’: European regulator despairs over lack of enforcement. Politico.eu. Available from: <https://cutt.ly/1gWgTjx>

2 – Ibid.

3 – Manancourt, V., 2020. “EU court ruling strikes hammer blow to transatlantic data flows”. Politico.eu. Available from: <https://cutt.ly/DgWgY52>

4 – European Commission, 2019. “Competition and sustainability”. Available from: <https://cutt.ly/dgWgIZh>

5 – Osborne Clarke, 2020. “Climate change and sustainability: is competition law a barrier to progress?”. Available from: <https://cutt.ly/QgWgSCo>

6 – Freshfields Bruckhaus Deringer LLP, 2020. “‘Green’ competition law – a changing enforcement climate?”. Lexology. Available from: <https://cutt.ly/9gWgHOX>

7 – European Commission, 2020. “European Competition Network”. Available from: <https://cutt.ly/kgWgKXS>

8 – European Commission, 2020. European Competition Network. Available from: <https://cutt.ly/6gWgXUy>

9 – European Communities (1992). Treaty on the European Union. Luxembourg: European Communities.). Article 168, paragraph 7 Available from: <https://cutt.ly/OgWg8JG>

10 – TFEU, Article 6. Available from: <https://cutt.ly/9gWg5Y9>

11 – TFEU, Article 4, paragraph 2(k). Available from: <https://cutt.ly/ngWhqJe>



Recommendation 10: The working group suggests taking every possible action to create common regulators and enforce their authority in the field of privacy, competition and consumer rights.

– The working group urges the EU to strengthen the European Data Protection Board’s powers and enforce its ability to rule over national data protection authorities by binding decisions. In this way, the European Data Protection Board will have the ability to ensure the consistent application of data protection law across the EU thus facilitating breakthrough innovation in the arena of cybersecurity.



– The working group urges the EU to create a joint European Competition Authority to rule over national authorities by binding decisions. The creation of such a charge will give the EU the ability to implement a single and unified approach to sustainability, facilitating breakthrough innovation in climate.



– The working group suggests creating a Consumer Right Authority to rule over national authorities by binding decisions. This authority will help ensure a more harmonious health regulation in the EU Member States. Generally speaking, it would also help ensure that consumer rights are designed considering the EU innovation targets.



12 – Greer SL, Fahy N, Rozenblum S, et al. Everything you always wanted to know about European Union health policies but were afraid to ask. Copenhagen: European Observatory on Health Systems and Policies; 2019. (Health Policy Series, No. 54.) 1, Available from: <https://cutt.ly/8gWheJp>

13 – EIT Health and McKinsey, 2020. “ Transforming healthcare with AI: The impact on the workforce and organisations”. Available from: <https://cutt.ly/ogWhtbA>

14 – European Commission, nd.b The European Consumer Consultative Group (ECCG). Available from: <https://cutt.ly/QgWhi16>

2. Implement EU regulatory sandboxes

Regulatory sandboxes temporarily adapt the legal framework for companies seeking to develop a breakthrough innovation that cannot be tested in a regular legal context. These tools appear to be a stimulating option to foster innovation throughout the EU.

Regulatory sandboxes allow companies that benefit from them to experiment in a real (albeit limited) framework and in a way that respects consumers. In Europe, the United Kingdom, the Netherlands, Denmark, Sweden and Switzerland are among the countries with the highest use of sandboxes. **Sandboxes send a signal of openness to innovation to companies. The countries at the top of the Global Innovation Index also use them most often, such as Denmark, the Netherlands, Switzerland and the United Kingdom¹. This regulatory environment is more favorable to innovation and encourages companies to invest in this area.**

These "bubbles" are particularly useful for startups or companies wishing to test profoundly innovative and groundbreaking products. For example, as traffic regulations do not allow driverless vehicles' circulation, innovative autonomous vehicles cannot be tested in real conditions. With the use of regulatory sandboxes, several experiments have been carried out. For instance, in France PSA and Renault have tested driverless cars on 15,000 km of separate carriageways in the Paris region².

In 2017, the Banking Stakeholders Group suggested to the European Banking Authority the creation of European sandboxes, notably for Fintech companies, because "as more European countries are setting up regulatory sandboxes, the risk arises of creating a fragmented ecosystem of national sandboxes with different regimes³".



1 – Global Innovation Index, 2019. "Creating Healthy Lives—The Future of Medical Innovation". Available from: <https://cutt.ly/ngWhsmk>

2 – Les Echos, 2019. « Voiture autonome: seize nouvelles expérimentations en France ». Available from: <https://cutt.ly/4gWhfa1>

3 – Banking Stakeholders Group, 2017. "REGULATORY SANDBOXES: A proposal to EBA by the Banking Stakeholders Group". Available from: <https://cutt.ly/lgWhgNQ>



Recommendation 11: Because regulatory sandboxes are a powerful innovation driver locally, the working group encourages their creation and implementation at the EU level especially in the key priority fields: Cybersecurity, Climate and Health. Additionally, creating EU-wide sandboxes would ensure that all regulatory sandboxes in these fields are aligned and abide by the same objectives and consumer protection standards, further facilitating the introduction of the innovations on the single market.

The working group also identifies a potential united European sandbox initiative as an opportunity for European institutions to gather data and information on the various innovations tested and their performance. This insight is valuable for legislators and facilitates efficient policymaking¹. As the European Banking Authority noted in 2017, “an active participation of regulators and supervisors should be desirable,” with moderation, in innovation².

1 – Ringe, W., and Ruof, C., 2020. “Regulating Fintech in the EU: the Case for a Guided Sandbox”. *European Journal of Risk Regulation*. Available from: <https://cutt.ly/DgWhj8V>

2 – European banking authority, 2017. Draft EBA response to the EC Consultation Document on Fintech: a more competitive and innovative European Financial Sector. Available from: <https://cutt.ly/IgWhlWX>

3. Enforce a unitary EU patent

The unitary patent represents another concrete and achievable initiative that could significantly limit the adverse effect generated by market fragmentation in the EU. Today “the cost of a patent in the EU is up to ten times higher than in the US or Japan because the patent should be translated, validated, put in force and renewed in each Member State¹.”

In 2012 and 2013, the Commission took steps towards implementing a European unitary patent. This was a radical measure towards facilitating companies’ expansion beyond their national market, into other EU member states. Indeed, **the unitary patent system is much more cost-effective for companies: renewal fees over ten years for a territory that covers 26 EU countries will amount to €5,000, while it is currently around €30,000.² These costs discourage companies from patenting in Europe, while the unitary patent will simplify the business’ application procedure and reduce their administrative burden.**

However, several obstacles are slowing down the roll-out of the unitary patent. Firstly, while all member states, bar Spain and Croatia, have agreed to the unitary patent regulations, many have not yet ratified the laws. For instance, the German Constitutional Court has repeatedly blocked the unitary patent process because it amends the Constitution and has not been approved by a two-third majority in the German Parliament³. Secondly, the Unified Patent Court, which will “deal with the infringement and validity of both Unitary Patents and European patents, putting an end to costly parallel litigation and enhancing legal certainty⁴,” is not yet operational. The UK, which initially ratified the regulations, has now made final preparation to withdraw from the Unified Patent Court project, with consequences of this withdrawal being currently assessed by the EU Council⁵. The Court is expected to open in 2022⁶.

1 – Maroulis, N., Zoboli, E., Kably, N., Maier, F., Otte, S., Bougas, K., and Gkogka, A., 2018. “Regulatory barriers and cross-border commercialisation of innovation”, Business Innovation Observatory. Available from: <https://cutt.ly/zgWUUhD>

2 – European Commission, nd.e. Unitary Patent. Available from: <https://cutt.ly/FgWhvY4>

3 – Wolters Kluwer, Patent blog, 2020. “Despite FCC ruling, Germany wants to push ahead with Unitary Patent system”. Available from: <https://cutt.ly/CgWhn0V>

4 – European Patent Office, nd.a. Unitary Patent & Unified Patent Court. Available from: <https://cutt.ly/pgWhWxn>

5 – Unified Patent Court, 2020. “UK Withdrawal from the UPCA” Available from: <https://cutt.ly/cgWhR5U>

6 – European Patent Office, nd.b. When will the Unitary Patent system start? Available from: <https://cutt.ly/bgWvWRB>

 Recommendation 12: The working group urges the European Commission to accelerate implementing a unitary EU patent. Because the unitary EU patent would represent a significant gain for business investing in Europe and facilitate innovation management across EU countries, we believe it will encourage more and more companies to expand throughout the European market.



VI. Financing Innovation

Our discussions with experts and within our working group revealed a consensus that had already been documented in previous reports such as the Tibi Report that **there is a lack of developed exit strategies for French startups and European ones overall**. Innovation is fostered when there is a greater variety of actors. There are more opportunities for new technologies to be developed, however, this requires a healthy ecosystem where many startups can try new methods and technologies or create and expand new and existing markets. For startups to exist there needs to be a full range of funding available for them at all stages of their lifecycle. Having multiple exit strategies available to startups is a way to compensate the risk taken by founders and initial investors.



Furthermore, local entrepreneurs' success encourages others to explore new fields and technologies, thereby creating a healthy and self-sustaining ecosystem. The European Union represents 22% of the world's GDP but only 10% of emerging technologies¹. European startups represent only 10% of global funding in 2018, compared to 53% for the US and 27% for China². **The lack of financing perspectives is one of the significant factors in why many French and European startups eventually decide to go to the US, not only in search of conquering a broader market but also for more financing options and a better probability of an exit.**

Companies traditionally have three options for exiting; that is to say, finding a way for initial investors to recuperate their funds, ideally with a gain. Traditionally the most sought-after option, though often the hardest, is to become sufficiently profitable to be able to raise further capital by going public successfully. In order to go public, the company has to be at a late enough stage in its maturity and sufficiently big that investors will be willing to validate their economic model. The company has to have access to enough funds to comply with the regulatory requirements of going public. It needs to be sufficiently robust in its management team and its processes to transform itself into a pre-IPO company. Lastly, there must be a demand on the investor side to buy the stock. As aptly explained by the Tibi Report these conditions aren't present in France or in any other continental European stock exchange. **As such, most innovation and tech startups prefer to go public on the US stock markets.**

The last major tech IPO in France with a valuation of over 1 billion euros was that of Dassault Systèmes in 1996. All the other big French tech IPOs such as Business Objects (1994), Criteo (2013), DBV Technologies (2014), Collectis (2015) and Talend (2016) chose to go public



in the US. Several companies with French founders such as Datadog and Snowflake decided to go public in the US and not in Europe. Elsewhere on the continent, several large German companies such as Deutsche Bank, Deutsche Telekom, Daimler and Siemens also chose to go public in the US. However, many have since moved to the Frankfurt Stock Exchange³. Spotify, Swedish-based music-streaming unicorn, went public in 2018 on the New York Stock Exchange. In 2020, GAN (a UK-based online gambling startup) and ADC Therapeutics (a Swiss biotech startup) opted to go public in the US instead of in Europe. Farfetch, a British-Portuguese luxury retail platform, and Elastic, a Dutch IT startup, went public in 2018 on the New York Stock Exchange.

Nonetheless, some European startups do still decide to go public on European stock exchanges. The Frankfurt Stock Exchange (on which Zalando, HelloFresh, Home24, Westwing have gone public) and Euronext remain attractive for many startups. In 2018, 69 European tech

1 – IMF, 2018. "World Economic Outlook Database" April 2018. Available from: <https://cutt.ly/UgWhlSr>

2 – KPMG, 2018. "Venture Pulse Q4'18".

3 – Moore, K., 2015. "The Berlin Startup Ecosystem Needs An IPO In The U.S.". TechCrunch. Available from: <https://cutt.ly/4gWvRC6>

4 – NGuyen E., 2018. "2018, année de tous les records pour la tech européenne" La Tribune. Available from: <https://cutt.ly/SgWvY21>

startups went public, compared to 28 in the US¹. Between 2015 and 2019, there were 172 European tech IPOs, compared to around 100 in the US². 2020 may see more startups going public in Europe: Belgian fintech Unified Post Group announced its intention to go public on Euronext Brussels³. However, European IPOs are generally on a much smaller scale than American ones: “London’s stock exchanges have an approximate market cap of €4.44 trillion, while Euronext has over €4.78 trillion”, and these two combined equal “only 73% of the market cap of NASDAQ⁴”. Therefore, although European tech startups IPOs may be increasing, they remain fragile and are much smaller than American ones. Startups with the most potential (e.g. Spotify, Farfetch) often still opt to go public in the US. For these reasons many analysts and investors find European IPOs to be lacking inspiration⁵.

However, going public is not the most common exit for a startup. **Being bought out and integrating a larger company with the resources to further develop their technology is a common and often sought after strategy. Yet here again, France and Europe lag behind the US.** Firstly, there is a lack of big European tech companies (the size of Google, Microsoft, Amazon et al.) that are sufficiently big and already profitable enough to buy local startups. Undoubtedly, Europe and France don’t lack industry leaders; however, as they are often more traditional technologies and manufacturing, they are less interested in buying and integrating newer tech startups. Secondly, due to the difference in markets and technology, traditional European and French companies are either unwilling or unable to spend the same amounts as American companies on these tech startups. Partly due to cultural differences and risk aversion, but also due to a difference in financial philosophy and the structure of M&A teams, French companies find it challenging to invest in or even to integrate tech acquisitions. This inability is not to say that there have not been some recent acquisitions of startups by French companies, such as Side by Société Générale and Open.io by OVH.

A third option for recuperating the initial investors’ investment is a buyout by a private equity fund. Such a buyout allows the initial investors to cash in on their investment while also allowing them to gain significant amounts to finance its growth and scaling strategy. The private equity investment traditionally also comes with a team of experts that helps the company mature. **Here again France and post-Brexit Europe lack private equity funds that are sufficiently big enough to be a major player in the tech ecosystem.** The 2020 ranking of the global 25 chief private equity firms, ranked by how much capital they raised, shows that only five of them are European (Luxemburg, Sweden, two from the UK, and Switzerland), while 19 of them are American⁶. Being ranked in the first 100 firms requires raising a minimum of \$5.4bn, and in the top 10 requires an additional \$26.7bn. Only two European firms made it into the Top 10: CVC Capital Partners from Luxemburg, and EQT from Sweden. All others in the top 10 are American. The Top 100 only includes 19 European firms, out of which 12 are British.



1 – Kotecha, N., 2019. “Europe vs the US: the battleground for tech IPOs”. FinBoot Tech. Available from: <https://cutt.ly/SgWvAIE>

2 – Gregory, A., 2020. “European IPO revival continues with UnifiedPost Group ITF”. GlobalCapital (Online). Available from: <https://cutt.ly/hgWvGJs>

3 – Kotecha, N., 2019. “Europe vs the US: the battleground for tech IPOs”. FinBoot Tech. Available from: <https://cutt.ly/HgWvKHE>

4 – Colin, N., 2019. “Europe Shouldn’t Be Content With Boring IPOs”. European Straits. Available from: <https://cutt.ly/9gWvZcK>

5 – Private Equity International, 2020. PEI 300 Database. Available from: <https://cutt.ly/PgWvC3h>

A. Strengthening the European Tech stock market

1. Encouraging European startups to list in Europe first

European startups now have inordinate opportunities to raise funding at an early stage. Yet, they struggle when looking for funding later and prefer to turn to the American market. Raising capital on the US markets is also a great communication boost for these companies because it sends the message that the company can attract more prestigious investment funds than those found in their local market. **One of the main difficulties for raising money at a later stage by going public is the lack of European stock markets' attractiveness for tech startups which presents a double-sided problem. There are few tech stocks listed on European stock exchanges for private investment.** Currently, only one of the CAC 40 companies is a "young company" as the average age of index companies is around 100 years. That same company, Dassault Systèmes, is the only technology company on the index, compared to the US S&P 500 index, where tech companies represent 30% of capitalization. **Inversely, the lack of private participation in the financing of public tech companies in Europe makes it significantly less appealing for a company to list on European stock exchanges instead of the US exchanges.** Furthermore, companies going public on European exchanges are limited, as fewer startups have sufficient resources to prepare for an IPO. Not to mention the track record of tech IPOs on Euronext is not encouraging -- one-third of IPOs on Euronext were delisted because their price list had been overestimated¹.

The lack of interest in local / European stock exchanges for tech companies also means that foreign companies have no interest in listing their companies on these exchanges. During the last three years, the median stock capitalization during IPO in France for tech companies is €57M compared to the median US value for 2018 of \$608M². **While European companies cannot pass up being listed in the US if they want to raise capital at a global level, there is no interest in non-European companies and much less non-European tech companies to list on European stock exchanges.** Nevertheless, French tech, and notably medtech and biotech startups, remain attractive, as "many [of them] have been sold in the last few years to large industrial corporations, particularly American ones" according to Nicolas Dufourcq, Managing Director at Bpifrance³.



1 – Statistica, James Cherowbrier, Jan 15, 2020, Market capitalization of companies delisted on Euronext Growth 2019. Available from: <https://cutt.ly/YgWbhh9>

2 – Tibi, P., et Englebert, P., 2019. "Financer la quatrième révolution industrielle, Lever le verrou du financement des entreprises technologiques". Rapport au ministre de l'Économie et des Finances. Available from: <https://cutt.ly/FgWv9ax>

3 – Perreau, C., 2020. "Depuis début mars, Bpifrance a réalisé 52 investissements dans des startups". Journal Du Net. Available from: <https://www.journaldunet.com/economie/finance/1492081-nicolas-dufourcq-bpifrance/>



Recommendation 13: The Working group encourages the development of any measures to make Euronext attractive for European investors and companies, which will subsequently and naturally make it more attractive for American companies to be listed on Euronext. Through fiscal and regulatory incentives, the European market needs to become a more attractive way for European startups to raise funds. At the EU level, the working group encourages elaborating a directive to harmonize the taxation of stock options for startups across EU borders as was recently reformed in France. This type of reform helps compensate talent by making them partial owners of the startup and indirectly helps encourage outside investment in startup stocks as it will also lower capital gains taxes. Additionally, the working group believes that fiscal advantages should encourage gains by lowering the capital gains taxes which rewards prudent capital management instead of the traditional budgetary benefits given at the beginning of the investment as seen with other French investment programs that tend to be used more for tax optimization purposes rather than for wealth building and could have perverse effects on the market

2. Encourage private individuals to invest in European scale-ups

Private individuals and institutional funds in Europe and especially in France invest very little in tech stocks. Only 15% of the French private investors invest in the stock market¹ compared to 50% of American investors². British and German investors are similarly non-invested in their countries' stock markets – 13% and 15% respectfully³. There are historical and cultural reasons why French and European investors prefer real estate investments or life insurance funds. These investments are considered less risky and are easier to understand. However, government policies such as the Livret A and other fiscal advantages have helped shape French investment habits. The recent reforms to the taxation of capital gains on stocks in France is a step in the right direction by reducing the tax on capital gains, yet **more can be done to encourage French investors to invest in the future of their country's economy by favoring the financing of technology and innovation-driven startups and companies.**

One way to increase the market's attractiveness is to encourage households to invest some of their savings in tech companies instead of traditional Livret A or real estate investments. The Tibi report offered this as one of the leading suggestions to encourage the French and Europeans to view investing in tech companies as an investment in the future of their countries and the European Union, for it is only by staying relevant in new technologies that Europe and France can compete in a more fragmented world.

1 – Fay, P., 2019. “ Pourquoi les Français continuent de bouder la Bourse”. Les Echos. Available from: <https://cutt.ly/9gWbzSC>

2 – Parker, K., and Fry, R., 2020. “ More than half of U.S. households have some investment in the stock market”. Pew Research Centre. Available from: <https://cutt.ly/9gWbn8W>

3 – UK percentage varies from 3%-13% by sources and methodology (individual direct or indirect holdings): Wesleyan, 2018. “ News release – eight-out-of-ten Brits are 'share-o-phobic' and don't invest in the stock markets” Available from: <https://cutt.ly/QgWbW6O>; For Germany: Deutsches Aktieninstitut, 2020. “ Shareholder interest in 2019 down (in German)” Available from: <https://cutt.ly/agWbYFY>



Recommendation 14: To increase the appeal of the European market, in addition to the reduction of capital gains taxes on stock investments mentioned previously, the working group urges France and other EU countries to be ambitious in encouraging technological innovation based on tax incentives. One way to do so would be to promote investment in a pan-European innovation fund managed by the BEI, whose mandate we encourage to enlarge in the following section, that would invest in innovation companies at all stages. While tax policy is not a competency of the EU, the working group believes that European Commission and the EIB should none-the-less encourage all countries to apply a similar tax incentive to bolster participation, such as defiscalizing returns after a certain period, in this way they would send a strong message of unity and common goal. Secondly, there should be specific fiscal advantages for sophisticated investors investing in seed rounds (initial investment rounds that are not open to the general public). Such policies are an investment in the country's long-term future and economic strength and of the EU. This policy could be similar to the Enterprise Investment Scheme (EIS) and Seed Enterprise Investment Scheme (SEIS) tax incentives in the UK that allow investors to write off up to 50% of their investment in tax relief instead of 18% in France.



B. Strengthen the financing of European scale-ups

1. Encourage the creation of European Unicorns.

Currently, the European Union lags behind the US and China regarding the number of unicorns (a startup company valued at over \$1 bn). Among 493 unicorns in 2019, 238 were American, 121 Chinese, 25 British and only 35 European excluding the UK of which six are French¹. Since the publication of that report France has doubled the number of unicorns and now counting 13 (the previous ones being BlaBlaCar, Voodoo, Deezer, OVH and Doctolib, with the new additions Dataiku, Content Square, Meero, Kariba, Ivalua, Open Classrooms and Doctolib).

While there is a debate as to whether or not counting the number of unicorns in an ecosystem is useful, it is a convenient metric by which we can measure the funding robustness and the general dynamism of it. Having several large successful startups testifies to companies' ability in an ecosystem to reach a very mature start of development that allows for a greater multitude of exits, be it an acquisition or going public. These more successful and more extensive startups also contribute significantly to the local ecosystem by providing funds and capital to even smaller startups through acquisitions. It is an essential part of creating a virtuous cycle for a sustainable ecosystem for innovation. However, **few tech companies in Europe have the size or the resources to finance smaller tech companies' acquisitions. Out of six thousand startup acquisitions by US and European companies since 2012, 82% were made by US companies.**

Furthermore, Silicon Valley companies represent 21% of these acquisitions. Of the top 15 acquiring companies, 11 are from Silicon Valley, and the first European company, SAP, comes in only at 33rd place. Out of European companies, UK companies represented over 50% of European acquisitions. The median deal size of all acquisitions is \$110M while the median amount invested by European companies is \$60M, and 44% of European Startups were bought by US companies. If we look at the top European buyers of startups, the only French company is Dassault Systèmes at number 12 out of the top 15².

As a result, late-stage funding rounds and buyout of European startups is significantly lower than US startups. The ease of raising capital in the US allows companies and talents to create an ecosystem where more companies are formed. Many ex-employees of an acquired startup can bootstrap a new venture until their new startup attains further funding.

In the US, via decades of targeted financing through DARPA, Silicon Valley was able to concentrate funding in several tech fields that laid the foundation for the birth of the current tech giants such as Google, Amazon, Facebook, Microsoft. Recently there has been much talk of creating a DARPA-like agency for France, the UK or even the European Union. However, as Nicolas Colin has recently argued, perhaps it is a historical solution that might not be as useful in today's circumstances³.

One possible solution is to look at the role of the French public investment bank, Bpifrance, in financing startups combined with the French Government's efforts through its French Tech initiative. Bpifrance is now allowed to invest directly in startups and no longer solely via other funds. Over 2019-2023, Bpifrance plans to invest €7.4bn in the form of grants and loans, with a target of financing 6,000 startups per year (compared to 4,000 today), with €2.2bn as a direct investment⁴. Bpifrance has contributed significantly in helping finance startups at all levels: startups can benefit from a continuum of financing at each stage of their development, because subsidies are available at the time of ideation and feasibility studies, innovation aid, R&D loan at the time of developing the offer, seed loan at the time of fund raising or innovation loan at the time

1 – Global Unicorn Club by CB Insights.

2 – Mind the Bridge, and Crunchbase, 2016. "Startup Transatlantic M&As, US vs. EU". Startup Europe Partnership. Available from: <https://cutt.ly/BgWbPsC>

3 – Nicolas Colin, 2013, "Does Every Country Need Their Own DARPA?" <https://cutt.ly/ggWbSq6>

4 – BPIFrance, 2018. "Plan stratégique 2018-2023". Available from: <https://cutt.ly/7gWbFkt>

of industrial and commercial launch. Bpifrance has thus notably supported Doctolib, a French health tech unicorn, from its creation in December 2013 until the final €35m round of financing in December 2017¹.

Public investment banks can also target specific sectors according to the strategies identified. For instance, in 2019 Bpifrance directly invested €140 million into the French deeptech ecosystem and €240 million in funds of funds, ("which represents €960 million with the leverage effect", according to Paul-François Fournier, the Executive Director for Innovation)².

In 2019, the European Investment Bank (EIB) has invested €14.4 bn to support innovation, however, this support does not take the form of direct investment. This budget includes: "support for the development and marketing of new products, processes and business models; promoting investment in research and development, education, skills upgrading and training; improving connectivity and access through investment in broadband and mobile networks; and the adoption and dissemination of digital or other emerging technologies³." Moreover, in partnership with Bpifrance, the European Investment Fund (EIF), under the guidance of the EIB, guarantees up to 50% of new loans granted by Bpifrance to innovative companies and startups. However, it only has a budget of €100 million for seed funding for startups at its disposal⁴. The Commission also has a budget of €2.7bn for 2018-20 to fund innovators and startups, through non-equity based grants⁵.



1 – Les Echos Start, 2018. “ Bpifrance: 4.000 startups financées en 2017”. Les Echos Entrepreneurs. Available from: <https://cutt.ly/ygWbJUUr>

2 – Saudemont, E., 2020. “Bpifrance a investi 380 millions d’euros dans les startup deeptech en 2019”. Usine Nouvelle. Available from: <https://cutt.ly/5gWbVmO>

3 – Banque Européenne d’Investissement, nd. “ Innovation et compétences”. Available from: <https://cutt.ly/FgWbM3w>

4 – European Commission, 2019. “Plan d’investissement pour l’Europe: le Fonds européen d’investissement a garanti 2 milliards de prêts à l’innovation accordés par Bpifrance”, Press release. Available from: <https://cutt.ly/7gWb2hB>

5 – EU Startup Services, nd. “Designing a tailor-made Funding Strategy”. Available from: <https://cutt.ly/HgWb90y>



Recommendation 15: Drawing inspiration from the success of Bpifrance, the working group suggests enlargement of the mandate of the European Investment Bank (EIB) to allow the European Investment Fund (EIF) to invest directly in innovation companies. More specifically, allowing it to participate in series C and D at higher levels to help European startups get to the unicorn size. Inspired by the success of the French public investment bank, which has recently started more direct investing, the working group believes this would help bolster the creation of EU tech giants that will then be able to sustain a European tech ecosystem by providing additional exit possibilities either by having the funds to acquire other smaller startups or by being big enough to go public. Nonetheless, the working group recognizes the difficulty of this recommendation as any change in the mandate of the EIB would require the unanimous support of the EU member states. Therefore, we encourage the EIB in the interim to increase its investments via funds of funds in funds that specifically target direct investments in innovation companies and later stage European startups and scale-ups.

To match the budget and impact of Bpifrance at the European level, the working group suggests that the European investment to amount to €50bn over four years (including €15bn in direct investment or via interim financing instruments), to help fund 40,000 startups across the Union. This budget would work towards reaching the goal of 100 EU-based unicorns by 2025.

2. Stimulate late-stage and private equity investments for scale-ups

One of the reasons the US stock market and the financial system overall can invest large amounts into innovation-driven companies is the amount of money invested by pension funds. US pension funds represent approximately \$22.4 trillion of assets under management and are invested in all asset classes including tech funds. This is a considerable amount of money that doesn't have an equivalent in most of Europe due to the European system of state pensions.

While French asset managers are global players, and with approximately €4 trillion of assets under management¹, they do not manage international tech funds as their US and UK counterparts do. This is not to say they do not invest at all in tech but it is less of an organized strategy, partly due to known regulatory issues following the Bale liquidity and diversity ratios that limit institutional investors from investing more into funds that are considered high risk. However, most **French institutional funds do not invest in Tech companies via dedicated tech fund vehicles, as US and UK institutional investors do.** A point raised by the Tibi Report was that due to this lack of specialization in Tech funds, there is a lack of talent and expertise in this type of investment². **The working group supports the report's conclusions and suggestions of the report that encourage creating a series of late-stage and global tech funds of 20 billion euros to fill part of the funding problem for European and French startups.**

According to Pitchbook, 19% of tech startups found an exit via a Private Equity buyout globally, and this trend is expected to increase³. Due to the difficulty of going public especially for European startups, tech experts such as Nicolas Colin propose that these private equity buyouts could be encouraged as a solution in Europe⁴. **Lacking the mass of money that the US pensions system represents, how can France or the European Union create funds of a significant size that would allow for another viable exit option for startups?**



Recommendation 16: At the French level, the working group suggests the use of unclaimed assets held by Caisse des dépôts et consignations to these late-stage investments. The sum of these unclaimed assets amounted to €3.7bn in 2017⁵. Additionally, a percentage of the pension funds (Fonds de réserve pour les retraites & fonds de retraites des fonctionnaires) and of life insurance policies could be invested in the type of pan-European tech fund suggested in VI.A.2.

1 – efama, 2018. “Asset Management in Europe, 10th Edition Facts and figures”. Available from: <https://cutt.ly/JgWntFW>

2 – Tibi, P., et Englebert, P., 2019. “Financer la quatrième révolution industrielle, Lever le verrou du financement des entreprises technologiques”. Rapport au ministre de l'Économie et des Finances. Available from: <https://cutt.ly/QgWnuYx>

3 – Segal, J., 2020. “Startups Are Being Bought Up by Private Equity”. Institutional Investor. Available from: <https://cutt.ly/vgWnoNJ>

4 – Colin, N., 2020. “Can Private Equity Firms Make Money in Tech? (Round 1)”. European Straits. Available from: <https://cutt.ly/GgWnsLe>

5 – MoneyVox and AFP, 2017. “Épargne non réclamée: près de 3,7 milliards d'euros à récupérer à la Caisse des dépôts”. Money Vox. Available from: <https://cutt.ly/agWngkq>

VII. Collaborate to innovate

Collaboration tends to drive innovation for a variety of reasons. Problems and challenges can be better identified and solved when actors from different backgrounds work together¹. Collaborating also **tends to spark creativity and produce more inventive ideas and solutions as it limits the risk by sharing it between various parties**². Furthermore, “the prototyping, selection, and testing of new innovations is improved when they are subjected to assessment by people from a range of sectors and disciplines. In addition, collaborative interaction facilitates compromise and helps prevent stalemates and mitigate the influence of the most powerful players³.”

Large corporations tend to seek collaboration opportunities because collaboration is likely to produce value. Google conducted a study in 2015, showing that 73% of employees believed their organization would be more successful if employees were able to work in more flexible and collaborative ways and that 56% of employees ranked a collaboration-related measure as the first factor of the companies’ overall profitability⁴. Collaboration fuels intrinsic motivation and encourages people to be more engaged and tenacious and to perform better⁵. Similarly, studies conducted by Nielsen also show that bigger and more diverse teams generate better concepts⁶.

As the emergence of new technologies and the pace of innovation increase drastically, collaborations to innovate have become “competitive necessities, not optional activities”⁷. New market competition and customer needs are increasingly pressuring companies to innovate internally – with labs and startups studios for instance – or/and externally through the acquisition or partnerships with startups. The use by corporations of corporate venture capital, accelerators, incubators and innovation labs has been rising exponentially since 2010: Boston Consulting Group surveyed the 30 largest companies across seven industries and found a consistently increasing adoption of these mechanisms as facilitators for innovation⁸.

While internal innovation is pursued in-house, with its resources, enabling it to entirely shape its development and marketing strategies, external innovation relies on input from a third party: a startup, another corporation, or a public research institution⁹. These two approaches are complementary as they solve for different innovation objectives and needs. For instance, Johnson & Johnson, which ranked 14th most innovative company in 2019¹⁰, equally values internal and external innovation, and aims to ensure they all work together seamlessly¹¹. It employs various mechanisms favoring both internal and external innovation, in order to best respond to each project’s specificity: it has set up a network of incubators for young ideas, regional innovation labs for entrepreneurs and startups looking to mature, and venture capital strategies when the partnership is constrained because of funding, or when the product would bring additional value as an acquisition.

Internal innovation can be challenging as it requires significant changes and energy from an organization. A study from 2015 found that while innovation departments were flourishing in large corporations, they “often struggle to achieve their objective” because “much of their time and effort is still spent gaining legitimacy within their organization.” They struggle to get their budgets approved by the Board¹². A successful internal innovation venture requires a sound and articulate innovation strategy, ensuring that “innovation efforts align with their business strategies¹³.” **However, internal innovation was not identified as one of the main challenges by our working group.** Indeed, different methodologies have been developed and result in successful solutions. For instance, the i-Lab at Air Liquide contributed to the Group's Innovation capitalizing on prospective methods and setting up the ground for new growth initiatives as well as the Group Digital Transformation strategy.

On the other hand, working with external entities, such as startups, universities, public research institutions, or even other big companies, is regarded both as a challenge and as a great opportunity by large corporations. It is difficult for big corporations to create disruptive innovation on their own because there is a growing need for external capabilities in order to address new markets and new growth opportunities.

1 – Torfing, J., 2016. Collaborative innovation in the public sector. Georgetown University Press.

2 – Ibid.

3 – Snow, T., 2020. “Why and how does collaboration drive innovation in the public sector?” Nesta. Available from: <https://cutt.ly/1gWnvPI>

4 – Google for Work and Raconteur, 2015. “Working better together, A study of collaboration and innovation in the workplace” Available from: <https://cutt.ly/rgWnmvX>

5 – Carr, P. B., and Walton, G. M., 2014. “Cues of working together fuel intrinsic motivation”, Journal of Experimental Social Psychology, Vol. 53, pp. 169-184

6 – Nielsen, 2015. “Why collaboration leads to higher-impact innovations”. Available from: <https://cutt.ly/IgWnSjX>

7 – Ringel, M., 2017. “Bringing outside innovation inside”. Boston Consulting Group. Available from: <https://cutt.ly/LgWnGhA>

8 – Ibid.

9 – Futurity.com, 2019. “The two faces of innovation”. Available from: <https://cutt.ly/BgWnKVf>

10 – BCG, 2019. “The most innovative companies 2019”. Available from: <https://cutt.ly/ggWnCKg>

11 – Ringel, 2017.

12 – KPMG, 2015. “On the road to corporate-startup collaboration”. Available from: <https://cutt.ly/WgWnBm4>

13 – Pisano, G. P., 2015. “You need an innovation strategy”. Harvard Business Review (Online). Available from: <https://cutt.ly/OgWnMEz>

A. Encouraging external collaboration opportunities

External collaborations are a powerful tool to help companies develop and launch disruptive innovation. By collaborating, they can join forces and mutualize capabilities to develop breakthrough innovation. The Jean Zay supercomputer that was recently developed by Hewlett Packard Enterprise (HPE) in IDRIS on the Saclay plateau in France, represents a good example of an extremely expensive capability that when mutualized can help companies develop numerous solutions “in fields as varied as climatology, biology, astrophysics, health, engineering, and artificial intelligence¹.”

Similarly, disruptive innovation can conflict with the development of incremental innovation and hurt the P&L of a company, which can create tensions between shareholders, innovation departments and business units that are likely to slow down or even prevent this disruptive innovation. In this way, collaborating is an effective way to overcome these internal tensions².

Collaborations are also crucial as business sectors are moving away from an organization in silos, towards decompartmentalization and entanglement. For instance, boundaries



between the transport, digital and energy sectors, have blurred, both as the result of a corporate strategy aimed at extending the boundaries of a market, and because these industries simultaneously mobilize the same intangible (knowledge, information, etc.) or physical (infrastructure, technology, etc.) tools, at different levels of the value chain³. This has significant consequences on competition: where a company's competitors were historically in the same sector, they may

emerge from another industry. In the tourism industry, hotels now compete with Airbnb, even more so than other hotels. Because a company's biggest competitors may come from another sector, cross-sector collaboration is essential to broaden a corporation's reach across industries. The most significant breakthrough innovation now emerges mostly from “numerous contributions of many actors working in networks,” and the technological competencies necessary for that innovation to function similarly “depend increasingly on networks of firms⁴.”

The World Economic Forum states that **collaboration between corporations and startups is mutually beneficial as it enables “corporates to enter and create new markets, and startups to develop their products, and to scale⁵.”**

Because long-standing and established businesses often struggle to significantly disrupt the sector they operate in, collaborating with a disruptive startup can be valuable. Collaborating with startups also ensures faster innovation. In other words, collaboration with startups can be key to delivering adaptable and responsive innovation swiftly. In a fast-evolving world and business environment, speed is crucial for both startups and corporations. In a collaboration, startups will be able to develop their innovation faster with the corporation's resources and clients. In contrast, the corporation will benefit from the startup's culture of agility, openness and responsiveness⁶. However, “according to Innovation Leader research, only 45 percent of corporations engage with startups⁷.”

As opposed to multinational corporations, SMEs and mid-cap companies rarely collaborate with startups⁸, when they could truly benefit from doing so. Indeed, these companies



1 – Université Paris-Saclay, 2020. “A powerful supercomputer on the campus of Paris-Saclay”. Available from: <https://cutt.ly/sgWn73j>

2 – Govindarajan, V., and Trimble, C., 2010. *The Other Side of Innovation- Solving the Execution Challenge*. Harvard Business Review Press

3 – Bainée, J., and Le Goff, R., 2016. “Le « marché augmenté » de l'énergie, des transports et du numérique”. *Innovations*, 2(50). Available from: <https://cutt.ly/8gWmqEC>

4 – Pittaway L., Robertson M., Munir K., Denyer D., and Neely A., 2004. “Networking and innovation: a systematic review of the evidence”, *International Journal of Management Reviews*, Vol 5/6 (3&4).

5 – World Economic Forum, 2019. “Collaboration between Startups and Corporates: A Practical Guide for Mutual Understanding”. White Paper available from: <https://cutt.ly/KgWmeWf>

6 – Ibid.

7 – Riley, P., 2019. “Building a Corporate-Startup Partnership? Here's What Will Help Make It Successful.” *Entrepreneur* (Online). Available from: <https://cutt.ly/egWmtgA>

8 – Mercandetti, F., Larbig, C., Tuozzo, V., and Steiner, T., 2017. *Innovation by Collaboration between Startups and SMEs in Switzerland*. *Technology Innovation Management Review*. Vol. 7 pp. 23-31.

often lack the innovative and technological outlook and processes that would enable them to develop further and grow¹. Still, they fail to engage with startups that could help them with these issues. For instance, the German Mittelstand has been reported to be “very slow, very risk-averse².” Similarly, in France, over half of the French mid-cap company leaders said that they did not feel overly threatened by the rise of disruptive innovation, and were thus not preparing for its impact, meaning they were likely to miss the opportunity to innovate and to position themselves as disruptive innovators³. In the same way, many mid-cap industrial companies fail to digitize: “When speaking to Mittelstand professionals, they said that much of Mittelstand quality assurance, maintenance, and logistics is still done using pen, paper, and sometimes an Excel file⁴.” Likewise, only 37% of French SMEs have their own website⁵.

Collaboration between startups and public research institutions is also crucial to a vibrant and growing innovation ecosystem. Arnaud Miara, a partner at PwC France in charge of development consulting for SMEs and startups, states that associating with researchers



when carrying out “an ambitious technological project” is “recommended, if not indispensable⁶.” Associating with an academic partner or research institution will be beneficial for startups. They will bring different skills and methods, be able to draw up a precise step-by-step roadmap, provide access to researchers, scientists and technicians, and share technical and precise knowledge⁷. Collaboration with startups is also beneficial for universities because it helps them connect with the

reality of the business and entrepreneurial ecosystem, and stay on top of upcoming disruptive innovation⁸. In France, between 2000 and 2015, 1 571 public researchers sought to participate in new companies, including 16,4% to build a startup and 79,8% to act as an expert within a startup⁹. Some universities even set up internal structures to welcome projects with startups, such as the University of Birmingham (UK) and its BioHub which “offers startup ventures access to affordable wet-lab space and advanced research equipment, alongside business support services¹⁰.” **However, a collaboration between startups and research institutions can sometimes be compromised because both organizations may not work at the same pace.** As Jean-Luc Moullet, the Chief Innovation Officer at CNRS, noted in his interview, startups often need to innovate quickly, while research institutions adopt a slower pace.

1. Encourage external networking opportunities

In the field of innovation, one-on-one relationships are usually at the basis of fruitful collaborations. Although powerful partnerships often develop between organizations, they are generally started by two individuals who believe in an idea’s potential and want to work together to create this new solution. Some even argue that “venture capitalists invest in people first¹¹.”

Personal relationships are key to linking organizations and growing ideas. Our interview with the CNRS highlighted that collaborations often arise from “bilateral relationships, established between two researchers, (...) who have come to know and appreciate each other over the years.” Notably, the collaboration between the CNRS and Thales, which owed one of the researchers the Nobel Prize in Physics, was initiated from the CNRS Lab Director’s friendship with her Thales counterpart. Personal relationships enable successful collaborations because they are built on mutual trust, and innovation will benefit from a consistent effort to “encourage interpersonal exchanges, by all possible means.”

An innovation ecosystem can also emerge from inner circles of acquaintances. For instance, our interview with Christophe Liénard from Bouygues showed that the Futura Mobility project’s revival was through personal connections. The project ini-

1 – Hilton, G., 2019. “How Germany’s Mittelstand and Israel’s Startup Nation Win Together”. Forbes. Available from: <https://cutt.ly/DgWmiw2>

2 – Fairless, T., 2015. “Europe Is Struggling to Foster a Startup Culture”. The Wall Street Journal. Available from: <https://cutt.ly/ogWmo4v>

3 – NGuyen, A., 2019. “L’innovation de rupture concerne-t-elle aussi les ETI?”. STIM. Available from: <https://cutt.ly/lgWmsLu>

4 – Hilton, 2019.

5 – Le Maire, B., 2020. LinkedIn post on French Economy Minister Bruno Le Maire’s account. Available from: https://www.linkedin.com/posts/brunolemaire_un-appel-%C3%A0-projets-pour-renforcer-lanum%C3%A9risation-activity-6729344462381715457-82a_

6 – PWC France, nd. “Chercheur et startuper, Le duo gagnant de la recherche?”. Available from: <https://cutt.ly/7gWmf7A>

7 – Aix Marseille Université, nd. “La R&D, c’est fait pour moi?”. Available from: <https://cutt.ly/tgWmjrs>

8 – De Biaso, M., 2017. “How Startups And Universities Collaborate To Innovate In Urban Development?”. Startus Magazine. Available from: <https://cutt.ly/CgWmzBb>

9 – Ibid.

10 – NCUB, 2015. State of the relationship report 2015, Collaborations between universities and business in the UK. Available from: <https://cutt.ly/hgWmcGz>

11 – Glaveski, S., n.d. “CORPORATE STARTUP PARTNERSHIPS 101”. Collective Campus. Available from: <https://cutt.ly/5gWmmXQ>

tiated then closed by Safran alone, was revived in a collective collaborative project. A restricted team of fewer than ten employees from SNCF Réseau, Air Liquide, Alstom, Bouygues, Groupe ADP, Keolis, Valeo, Safran and Schoolab came together regularly. They sought to “get to know each other and establish a high level of trust” before tackling more complex business-related issues.

In this way, networking appears as a key innovation driver. “Networks deliver three unique advantages: private information, access to diverse skill sets, and power¹.” By leveraging networking opportunities such as alumni networks, trade associations, symposiums and scientific events and so on, individuals increase the chances of meeting someone they will want to not only work with, but start a long term collaboration with at some point in their career. Research emphasizes the role of networking as a carrier for innovativeness: “the locus of innovation is no longer the individual or the firm but, increasingly, the network in which a firm is embedded².” These trends have been relevant in the field of innovation for decades: a 1996 study demonstrated that “the annual growth rate of 18% in the pharmaceutical industry was largely linked to networked research and development³”. Firms should aim for their employees to reach a network that is simultaneously large and diverse, for higher innovation and performance: a more extensive network “provides more social capital for timely information, crucial resources, and new knowledge for innovation,” while a diverse network increases “the variety of the information, resources, and knowledge accessed⁴.”

Several organizations offer such networking opportunities for innovators and startups. They can be regional (e.g., Le Club de Paris des Directeurs de l’Innovation for Parisian innovation directors or startup founders, Innovation Network Cologne which connects established companies with innovation and startups from the Cologne region), **sectoral** (e.g., Pôle Valorial, a French network for agrifood startups and entrepreneurs, the Innovation Network for Advanced Materials (INAM) which support emerging technologies and startups in the field of Advanced Materials in Berlin), **or combine both approaches** (e.g., Polepharma, a network for pharmaceutical innovators in Centre-Val de Loire, Normandie and Ile de France regions, Health Hub Vienna, a platform for healthcare innovators in Vienna, Trans2Care which facilitated networking and collaboration between Slovenian and Italian health startups and experts, from 2007 to 2013). **Other networks, such as the Réseau Entreprendre, appeal to entrepreneurs of all sectors, looking to start or grow their business.** Some companies and organizations build internal networks to promote innovation within the institution, such as the UN with the UN Innovation Network, designed to form a “collaborative community of UN innovators interested in sharing their expertise and experience with others to promote and advance innovation within the UN System⁵”. Accelerators and incubators (e.g., Le Village by CA) are also key to not only growing a startup, but doing so while meeting and connecting with other entrepreneurs.

Networking will be most efficient if undertaken by a majority of employees at all levels of a company: senior executives can take part in networking themselves and encourage other employees to do so, individually or as a team⁶. Companies may also train their employees to pursue effective networking, depending on their specific network needs. Networking can be presented as an integral tool to foster its success, and integrate it into its innovation strategy. Finally, firms may organize networking events where they invite other companies, or join business associations, to facilitate contact and connection between their employees.

1 – Uzzi, B., Dunlap, S., 2005. “How to build your network”. Harvard Business Review. Available from: <https://cutt.ly/ngWmW3L>

2 – Pittaway L., Robertson M., Munir K., Denyer D., and Neely A., 2004. “Networking and innovation: a systematic review of the evidence”, International Journal of Management Reviews, Vol 5/6 (3&4).

3 – Ibid.

4 – Kim, K., Lui, S. S., 2015. “The impacts of external networks and business groups on innovation: Do the types of innovation matter?”, Journal of Business Research, Vol 68(9).

5 – UN Innovation Network, n.d. Available from: <https://cutt.ly/jgWmV9I>

6 – Misner, I., 2004. “5 Ways to Encourage Employees to Network”, Entrepreneur.com. Available from: <https://cutt.ly/QgWm2U7>

 Recommendation 17: The working group urges companies to encourage employees to engage in networking opportunities. Companies should empower their employees to participate in external networking activities with other representatives of the innovation ecosystem, such as teaching a class, conducting projects with startups, or even participating in a white paper. **The working group believes that the best way to incentivize employees to network is by:**

- **Assigning a percentage of the overall innovation teams' objective to network creation;**
- **Asking employees on a yearly or bi-yearly basis to share the innovation networks they are a part of;**
- **Financing the participation in conferences and summits for employees;**
- **Encouraging employees to spend one working day each year in the startup of their choice to understand the culture better, and build connections. Similarly, as many companies enable employees to volunteer for charities during their working hours, these Days for Startups would be mutually beneficial in building networks and sharing experiences.**

2 Create an EU Innovation Agency to bolster collaborations in key priority innovation fields

Multiplying chances to network is critical when it comes to innovation. **The working group believes that it is essential to develop these networking opportunities at company level or even at the country level, but throughout the EU.** Fostering EU networks can finally unite the EU innovation landscape in positioning itself as a unified innovation champion. These EU innovation networks can also help tap into the diversity of EU citizens, which, as described in section 1, is a powerful innovation driver.

The Startup Europe initiative, launched by the European Commission in 2020, aims to strengthen networking opportunities “to accelerate the growth of the European startup scene”¹. Its goal “to connect high tech startups, scale-ups, investors, accelerators, corporate networks, universities and the media,” is supported by various projects and actions, such as the Startup Europe Partnership (SEP). Since 2014, the SEP startups’ growth by providing a platform where innovators and corporations can meet and launch business partnerships². **Other tools, such as the Innovation Radar Platform, enable citizens, public officials, professionals, and businesses to “identify high potential innovations and innovators in EU-funded research and innovation projects”³.** This initiative brings transparency to the outputs of EU innovation funding. It provides a comprehensive map of the various EU innovations to enable potential investors to get in touch with the EU-funded innovators.

The EU also supports networks in particular fields. The European Institute of Innovation and Technology (EIT) is an independent EU body and aims to “increase Europe’s ability to innovate by nurturing entrepreneurial talent and supporting new ideas⁴.” The EIT has various branches, also called Knowledge and Innovation Communities (KICs), to encourage networking in various innovation sectors, such as Health, Climate, Food, Energy, etc. All of these KICs have branches in Member States. Beyond networking through events and roundtables, these organizations enable member investors to identify innovators and startups, grant financial support to startups, and facilitate innovation in-house with projects in collaboration with their network members. The EIT Climate has for instance contributed to raising €87M for German startup Liliun GmbH, which has developed an electrically powered personal jet⁵, and EIT Health has launched 55 products or services to market⁶. **The EIT Innovation Communities thus connect innovators, businesses, and research centers to try to solve pressing innovation issues.** Investors have access to all partner startups and they can contact them directly or invest in more general support programs run by the EIT. Startups or innovators who wish to participate in the network must apply through the national branches of the relevant KICs⁷.

However, the lack of unity of the EIT governance and coordination has been criticized. A 2016 report by the European Court of Auditors highlighted that all branches have taken different strategic directions, and lack global oversight⁸: for instance, while InnoEnergy “shows a strong business development focus,” ClimateKIC “emphasizes the quality of its climate change policy advice and its social innovation focus with nearly an exclusion of commercial business development.” Moreover, the EIT is struggling to foster meaningful engagement from its partners: “EIT has over 800 partners, among them giants like Siemens, Ericsson, Bayer and Philips, but many show only a limited interest in the mission and activities of the EIT and several CEOs interviewed by the reviewers were unaware of their companies’ involvement in the EIT⁹.” **The working group believes that the EIT’s impact would increase if its projects and branches were more centralized and under a European-wide agency’s strategic impulse.**

The EU’s Research Executive Agency (REA), which is notably in charge of managing around 20% of the Horizon 2020 budget, also plays an important role in EU innovation networks insofar as it funds a variety of innovation-boosting programs (e.g., the Marie Skłodowska-Curie actions, aiming to increase the mobility of researchers across borders and sectors). The REA is mostly EU-centric in the sense that it mainly

1 – European Commission, 2020. ‘Startup Europe’. European Commission. Available from: <https://cutt.ly/LgWm6ji>

2 – European Commission, 2019. Startup Europe Partnership. European Commission. Available from: <https://cutt.ly/KgWQeP7>

3 – European Commission, 2020. ‘Startup Europe’. European Commission. Available from: <https://cutt.ly/DgWQt2y>

4 – European Institute for Innovation and Technology, 2020. “Who we are – Vision and Mission”. Available from: <https://cutt.ly/pgWQu3A>

5 – Climate KIC, nd. “Invest with us”. Available from: <https://cutt.ly/cgWQsUt>

6 – EIT Health, nd. “What we do – Innovation”. Available from: <https://cutt.ly/hgWQvtF>

7 – Climate KIC, nd. “Partner with us”. Available from: <https://cutt.ly/6gWYE6r>

8 – Kelly, E., 2016. “Review of European Institute for Technology and Innovation calls for change at the top” Sciences Business. Available from: <https://cutt.ly/ogWQlgl>

9 – Ibid.



works in collaboration with the various Directorate-Generals (DG for Research and Innovation, DG for Agriculture and Rural Development; DG for Communications Networks, Content and Technology; DG for Internal Market, Industry, Entrepreneurship and SMEs; DG for Education and Culture; DG for Migration and Home Affairs!). **However, it does not collaborate directly with innovation networks, foreign innovation agencies, startups, or the private sector outside of EU-fund beneficiaries².**

Finally, the European Innovation Council, which is still in its pilot phase, is a Commission-led initiative which “supports top-class innovators, entrepreneurs, small companies and scientists with bright ideas and the ambition to scale up internationally³.” Since its launch in 2017, it has supported “1276 highly innovative projects” for “an overall funding of over €730 million⁴.” However, some innovation actors, such as the Finnish Innovation Agency, have argued that the EIC may be targeting the wrong stages of startups with its investments: it believes that “companies in these early stages generally have access to private capital already. The need for public investment comes later, when a company needs to scale and compete in global markets⁵.” The EIC’s investment (which comes through grants and equity) should thus be focused to on where it will be most efficient, and aligned with broader innovation goals.

There are, therefore, numerous European innovation institutions. As a result innovation programs and opportunities currently appear to be dispersed. They would benefit from being plainly identified and gathered under a single entity to facilitate communication, outreach and publicity of innovation projects. **The working group also recognizes that these networks’s governance is critical and should facilitate all countries and stakeholders’ participation.**

Additionally, the working group believes this agency should foster collaboration with non-EU actors. Our interview with CNRS highlighted that innovation should be pursued in partnership with global actors: no country or geographic region should be evicted from innovation efforts or collaboration opportunities. Jean-Luc Moullet argued that “researchers are driven by a global objective of developing scientific knowledge. They will naturally seek to compare and exchange with the best researchers worldwide, or go wherever the means available to carry out their research are the most important ones.” Because “research is global,” it is also “relatively free from geopolitical considerations”.

1 – ERA Portal Austria, 2014. “Research Executive Agency reorganises to take on the new mandate”. Available from: <https://cutt.ly/pgWQM8n>

2 – European Commission, 2020. “Research Executive Agency, Supporting world-class research & innovation”. Available from: <https://cutt.ly/lgWQ32d>

3 – European Commission, nd. “Enhanced European Innovation Council (EIC) pilot”. Available from: <https://cutt.ly/ngWWuja>

4 – European Commission, 2019. “European Innovation Council” Available from: <https://cutt.ly/sgWWpLp>

5 – Wallace, N., 2019. “Finland’s new innovation chief calls for caution over European Innovation Council’s move into equity investing”. Science Business. Available from: <https://cutt.ly/ZgWWWhGP>

 **Recommendation 18: To foster EU-wide innovation collaborations, strengthen existing EU innovation networks, and ensure their compelling and effective governance, the working group suggests creating a strong European Innovation Agency. This agency would identify and oversee large-scale innovative projects, giving them more weight than if they were developed at the sole national level and allowing them to benefit from all EU innovation stakeholders’ diversity and multiculturalism. The working group believes the creation of such an agency would strengthen European innovation’s relevance and competitiveness globally.**

– With a 15-year mandat, this executive EU agency would merge with the Research Executive Agency while undertaking wider-reaching projects and partnerships. It would head all EU-backed innovation projects and, therefore, facilitate the unity and visibility of the EU’s action on innovation.

– The European Innovation Agency would encourage and oversee large-scale projects focusing on “identified key innovation fields” (cybersecurity, health and climate- see section VII.A.2) by coordinating EU innovation stakeholders’ sectorial networks, including corporations, mid-cap companies and SMEs, startups, and public research institutions.

– The European Innovation Agency would have representations in each member state. These representations would give participating stakeholders the opportunity to gather, network and collaborate, on joint initiatives, both physically and remotely. These national representations would also foster a better understanding of local markets and regulations.

– The European Innovation Agency would collaborate with non-EU actors in the same way that the ESA cooperates with NASA¹, the Japan Aerospace Exploration Agency², or the Russian Space Agency³.

1 – European Space Agency, 2019. “ESA and NASA to team up on lunar science”. ESA. Available from: <https://cutt.ly/SgWWvkM>

2 – European Space Agency, 2006. “ESA joins forces with Japan on new infrared sky surveyor” Available from: <https://cutt.ly/JgWWEp>

3 – European Space Agency, 2005. “European and Russian space agency leaders meet in Moscow” ESA. Available from: <https://cutt.ly/KgWW8FO>

3. Promote private innovation collaboration in the industrial sector at the EU level

Data is becoming increasingly valuable, and as such, sharing data between different companies represents an important business opportunity and an innovation target. As Thierry Breton, EU Commissioner in charge of the internal market, noted, data should be “a pillar of our new industrial strategy¹.” However, in the global and competitive “big data race,” the EU lags far behind the US or China. The European Commission evaluates that embracing big data and digital platforms could “enhance productivity and performance, increase profitability, strengthen competitive advantage, [and] reduce risk” for European industries, as well as “pave the way for innovation².”

The EU has already taken the lead in areas of data management and it could soon drive innovation on other data-related topics. Thierry Breton has notably highlighted the importance of industrial data. **Europe has a broad industrial capacity, and the industrial sector accounts for 25.1% of the EU's GDP³, and significant industrial innovation potential.** As an example, Europe accounts for over half of global R&D spending in the automotive industry⁴. **Breton proposed EU-wide reforms under the “European Alliance for Industrial Data and Clouds,” which would facilitate intra-EU data transfers and therefore enable European companies to “better capitalize on the electronic information they generate⁵.”** European innovation in data would complement data management efforts started with the GDPR and appears crucial to position Europe at the forefront of this globally strategic sector. In this way, in June 2020, France and Germany decided to launch Project Gaia-X. **Project Gaia-X, is described as a “federated, open data infrastructure based on European values⁶.”** 11 French companies support it: Amadeus, Atos, CISPE, Docaposte, EDF, IMT, Orange, OVHCloud, Safran, Scaleway and 3DS Outscale, and 11 German companies: Beckhoff, BMW, Bosch, DE-CIX, Deutsche Telekom, Fraunhofer, GEC, IDSA, Plussserver, SAP and Siemens⁷. Project GAIA-X connects centralized and decentralized infrastructures to turn them into a homogeneous, user-friendly system [to] strengthen the ability to both access and share data securely and confidently⁸. The objective is to collect, share and make data available in an environment of trust.” **Similarly, in France, some of the major industrial companies, including Air Liquide, Schlumberger, Dassault Aviation, EDF, Renault, Safran, Thales, Total, Valeo along with non industrial companies such as Orange or Ubisoft, have signed an agreement to share industrial data to take advantage of industrial Artificial Intelligence opportunities better⁹.**

Many of the existing industrial data-sharing initiatives tend to focus solely on European companies. While Gaia-X is reportedly open to foreign investors and partners, the requirements underlining this collaboration are unclear. The EU claims that “non-EU companies will be able to take part in the initiative if they “share our goals of data sovereignty and data availability¹⁰,” yet American companies have not been told whether compliance with the US. Cloud Act is an obstacle to getting involved with the project¹¹. The lack of transparency regarding foreign firms’ potential involvement may prevent them from engaging with a project and generate doubts as to whether they are welcome.

However, the working group believes that these initiatives could benefit from international companies’ inclusion, and especially from American companies. **While we recognize that data sovereignty is becoming a primary political concern, we also believe that international companies operating in Europe could be leveraged as an asset to strengthen the European innovation ecosystem. There are ways to use and take advantage of data without providing the actual data and sharing sensitive and confidential information.** For instance, Owkin, a startup that uses machine learning to develop better drugs for patients, has created a unique research platform, and a portfolio of AI models and solutions that hospitals, universities, and pharmaceutical companies can use to identify the best drug for the right patient without sharing the sensitive and confidential patient information with the startup¹². **We believe that similar machine learning solutions could be developed to leverage industrial data in Europe and, thus protect European interests while including international companies as part of the solution.**

1 – Breton, T., 2020. “Speech by Commissioner Thierry Breton at Hannover Messe Digital Days.” Transcript available at: <https://cutt.ly/SgWW6DK>

2 – European Commission, 2020b. Industrial applications of artificial intelligence and big data. Available from: <https://cutt.ly/igWEis5>

3 – CIA, nd. The World Factbook. Available from: <https://cutt.ly/9gWEa8C>

4 – McKinsey, 2019, p.13.

5 – Espinoza, J., and Fleming, S., 2020. “Europe urged to use industrial data trove to steal march on rivals”. Financial Times (Online). Available from: <https://cutt.ly/YgWEhAE>

6 – Gaia-X, nd. Data Infrastructure EU. Available from: <https://cutt.ly/ggWEBhL>

7 – Ministère de l'économie, 2020. “CRÉATION D'UNE ENTITÉ DE GOUVERNANCE POUR GAIA-X”. Entreprises.gouv.fr Available from: <https://cutt.ly/QgWEEPY>

8 – Ibid.

9 – Reuters, 2019. “Huit industriels unissent leurs efforts dans l'IA”. Reuters. Available from: <https://cutt.ly/PgWEIHm>

10 – Gaia-X, n.d. “Gaia-X: A Federated Data Infrastructure for Europe”. Available from: <https://cutt.ly/pgWEGwD>

11 – Stupp, C., 2019. “European Cloud Project Draws Backlash From U.S. Tech Giants”. The Wall Street Journal. Available from: <https://cutt.ly/ggWEZVG>

12 – Owkin, nd. Available from: <https://cutt.ly/JgWE9XX>

Furthermore, in order to truly lead the industrial innovation landscape, the working group believes that efforts to strengthen collaborations between SMEs or mid-cap companies and startups should be rapidly undertaken. Indeed, SMEs and mid-cap companies are the strength and the core of the European economy, with 5,300 mid-cap companies in France, 12,000 in Germany, 10,000 in the UK, and 8,000 in Italy¹, primarily industrial². In Germany the “Mittelstand” (i.e. mid-sized firms) is “the heart of Germany’s economy” as they “account for the largest share of the country’s economic output” and “employ about 60 percent of all workers³”. The majority of them have a strong international presence through exports⁴: over half of German mid-cap companies are active outside of their own country. Similarly in France, of the 3,000 companies identified as the French economy’s driving force, 2,030 are mid-cap companies⁵. However, as mentioned earlier, mid-cap companies and SMEs lag behind innovation and rarely collaborate with startups.

It is, in fact, in both mid-cap companies and startups’ interests to increase their collaborations. European startups are developing tools and services that could serve numerous European SMEs and mid-cap companies’ interests and business. At the same time, these companies also represent a large untapped potential market and network for startups. Widespread and efficient collaboration and partnerships between these two types of actors would strengthen and assert the European innovation ecosystem’s relevance. Some organizations, such as French Fab, which promotes the French industrial sector and places innovation as a growth level⁶, could encourage such initiatives to kickstart collaboration between startups and mid-cap industrial companies. Additionally, the IoT European Platform Initiative which was “formed to build a vibrant and sustainable IoT-ecosystem in Europe, maximizing the opportunities for platform development, interoperability and information sharing⁷” and which sought to fund and support European IoT projects, with total funding of €50m, could be tapped into to leverage the potential IoT for industrial mid-cap companies and SMEs.

1 – Les Clés du Social, 2017. “La Place des entreprises de taille intermédiaire dans l’économie et l’emploi”. Available from: <https://cutt.ly/sgWRusL>

2 – Bischoff, F., 2020. “Internationality as a key success factor for the German Mittelstand”. Kienbaum. Available from: <https://cutt.ly/MgWRass>

3 – BDI.eu, n.d. German Mittelstand. Available from: <https://cutt.ly/vgWRgEp>

4 – Bayley, C., 2017. “Germany’s “hidden champions” of the Mittelstand”. BBC news. Available from: <https://cutt.ly/KgWRIS2>

5 – Mouvement des entreprises de taille intermédiaires, 2020. “A propos des ETI”. Available from: <https://cutt.ly/5gWRmOW>

6 – La French Fab, nd. “Présentation”. Available from: <https://cutt.ly/kgWRR24>

7 – European Platforms Initiative, n.d. “IoT-EPI.” Available from: <https://cutt.ly/tgWROpE>



Recommendation 19: For the EU to become a leader in industrial innovation, the working group recommends strengthening and clarifying existing data-sharing initiatives and bolstering mid-cap companies and SMEs' collaboration with startups.

– **Strengthening existing data-sharing initiatives will provide companies with a suitable regulatory framework to exchange industrial data. Additionally, the working group supports creating secure and transparent solutions that will allow all companies operating in Europe and following GDPR, regardless of their nationalities, to collaborate and leverage their industrial data without necessarily sharing and accessing one another's confidential data. Foreign investors should be clearly informed of the expected requirements if they wish to participate and collaborate on a project. This solution would tackle the issue of data sovereignty while allowing them to take advantage of all existing capabilities in Europe fully.**

– **Collaboration and cooperation between European mid-cap companies and European startups should also be encouraged, to enhance their growth and their weight in the global innovation ecosystem.**



B. Ensure collaboration success

Collaboration with a startup can take a variety of shapes. Acquisition and integration of a startup makes the most sense if a company is interested in its resources, either talent or technology¹. Otherwise, corporations and startups alike will instead benefit from a partnership, where the corporation invests in the startup's processes while letting it "stand alone." Contrary to an acquisition, a partnership tends to safeguard a startup's culture, values, and individuality². For instance, to remain competitive and innovative, Cisco acquired over 175 startups and companies since 1993 because they needed to bring in those companies' technology. Similarly, Gilead Sciences acquired Pharmasset, which was a crucial step in enabling the development of breakthrough treatments for hepatitis C³. These companies needed to integrate their acquisitions' resources and market. Other companies are, instead, turning to partnership to develop a particularly innovative product. For instance, firms in the automobile industry are partnering with tech companies to produce autonomous vehicles (e.g., Volvo and Uber, General Motors and Lyft)⁴.

There have been numerous reports and initiatives aiming at facilitating corporate-startup collaboration, yet resulting in deceptive outputs, with about 45% of corporates and 55% of European startups being "very dissatisfied" or "somewhat dissatisfied" with their partnerships⁵. **New signals are however emerging and showing that this relationship is slowly evolving more positively.** A barometer from 2019 conducted by Capgemini Invent and Le Village by CA suggests that corporate-startup collaborations in France are becoming more mature. Startups have a better understanding of their potential and value, providing them with the confidence and necessary weight within a corporation to further accelerate processes and address some of their difficulties⁶.

In response to challenges generated by startup-company collaboration, startup studios – requiring mainly for internal collaboration – have been increasingly popular and regarded as satisfying solutions. While there was a handful of them ten years ago, they are now over 200⁷, and are "experiencing incredible attention, success, and growth⁸." They are considered as a serious option to keep control over an innovation's development and overcome collaboration issues. The objective is to provide a safe space to create several startups based on a company's existing assets or from scratch. The main benefits are that it allows 1. a company to create a new venture aligned with its business goals, 2. to leverage existing assets: from infrastructures, expertise, customer base, and financial firepower and 3. to keep control over an innovation's team and processes. Each idea in the creation process goes through "a very intentional and iterative validation process." A studio provides extensive mentorship and support resources, **which reduces the number of issues or obstacles that may come up during the process⁹**, thus explaining the success rates of startups launched by studios: "of the 415 companies that startup studios have created, only 9% have failed, 3% exited, and the rest are still active¹⁰."

However, today some question the sustainability of startup studios, arguing that they may be a fad, unable to withstand obstacles. This questioning is becoming increasingly relevant as several startup studios are closing down following the Covid-19 pandemic, such as Founders Factory closing its French branch about a year after its opening¹¹, and The Family announcing a move to an all-digital offer and leaving its Parisian offices¹². Nevertheless, during our interviews, startup studios stood out as efficient solutions, rather than sources of problems – to contrast with external collaborations.

Having this in mind – while the consensus is that internal and external collaboration are complementary and both approaches should be encouraged – the working group mainly looked into solutions to maximize the success of collaborations with external stakeholders involved (VCs, startups, universities, corporates, public research centers).

The first main issue startup-company collaborations are significantly affected by is discrepancies in objectives, risk, value generation and value sharing. This is, however, logical as both parties are motivated by different ends for their respective structures. Startups look for opportunities to scale: by having access to experts, infrastructures, a large pool of potential

1 – Glaveski, S. n.d. "CORPORATE STARTUP PARTNERSHIPS 101". Collective Campus (Online). Available from: <https://cutt.ly/BgWRFvf>

2 – Ibid.

3 – Ringel, 2017.

4 – Ibid.

5 – Brigi, M., Gross-Selbeck, S., Dehnert, N., Schmiege, F., and Simon, S., 2019. "After the Honeymoon Ends: Making Corporate-Startup Relationships Work?". BCG. Available from: <https://cutt.ly/TgWRC9a>

6 – Capgemini, 2019. "Capgemini et Le Village by CA: Baromètre de la relation startup / grand groupe" Available from: <https://cutt.ly/3gWR0HO>

7 – Global Startup Studio Network, 2019. "The rise of startup studios". Available from: <https://cutt.ly/CgWR6fS>

8 – Riley, P., 2020. "What Startup Studios Look Like in 2020" Available from: <https://cutt.ly/jgWTeU3>

9 – Ibid.

10 – Ibid.

11 – Loye, D., 2020. "Founders Factory ferme sa branche française un an après son ouverture". Les Echos. Available from: <https://cutt.ly/FgWTFtK>

12 – Russell, G., 2020. "Fragilisé par la crise, The Family quitte ses emblématiques locaux parisiens et passe 100 % en ligne". Maddynews. Available from: <https://cutt.ly/jgWTIHM>

customers and financing opportunities. While, on the other hand, companies look for opportunities to innovate – such as developing new solutions. **This misalignment of interests is illustrated by the fact that startups and corporates do not measure the benefits of a collaboration with the same KPIs:** 75% of startups measure the impact of their cooperation based on their increase in revenues, along with their increase in terms of visibility on a market for 60% of them. In contrast, 75% of corporates look at the impact of their collaboration on their customer experience¹. **Thus, more than skills, some best-practice approach is necessary.**

In this subsection, we mainly looked into promoting a formalized approach and a key set of rules to improve the success of those collaborations: “Formalized programs make collaborations more efficient and cost-effective for corporates. (...) Equally important, formalized programmes are more visible to the startup community, and are therefore easier to engage with².” As the interview with Dupont’s Alexa Dembek highlighted, the key to a successful collaboration is to establish a vision and stick to it: similarly to building a Lego town, “first we think of what town we want to build (the vision), then we look at the Legos we own (internal capabilities) and then, we need to go out and buy or borrow, some specific Lego pieces.” This initial vision and perspective should inform and shape all steps and determine what type of collaboration a company is looking for.

1 Define a common vision and objectives

According to our interview with Alexa Dembek, CTO at Dupont, the first priority for a successful partnership between two parties that share different objectives **is to have a shared vision of why a partnership should exist, what added value should be generated for each party, and how it should evolve.**

Sharing a common vision will translate into a different set of rules and will provide guidance. Indeed, as described by Tobias Rooney, Director at Fahrenheit 212, in his article *Big Strategy is Dead*, **a vision is not just an idea sitting on the top of a strategic plan³. In contrast, today, it is to be regarded as a delivery tool:** it is a framework providing people with criterias to make decisions and to understand their context. This vision will unfold a clear North Star⁴, allowing the organization or the partnership to evolve organically towards its final goal.

The shared vision will then also translate into a legal agreement bringing visibility and clarity in the value sharing and ownership over intellectual property, simplifying the share of value creation for everyone. Based on our interviews with legal experts, one key driver for successful partnership contracts is to consider the operational aspects of collaboration by ensuring that the features of the contract will not bring additional complexity in a collaboration’s decision making processes. For instance, sharing IP equally for both parties may generate greater complexity in decision-making processes on a day-to-day basis, resulting in frustration for both parties. The contractual terms should be highly aligned with the operational dimension of a collaboration. Thus, solutions as licenses might sometimes be preferable to having an equally shared IP. Unfortunately, we could hardly push beyond our thinking regarding contracts as each collaboration case is unique and cannot be easily simplified or standardized. **However, it is essential to note that IP sharing is highly relevant when the collaboration takes the form of a partnership – in contrast with startups which are being acquired by larger groups with majority stake.** This approach allows companies to capture innovation growth opportunities through M&A with startups – in a faster and efficient way to integrate new capabilities. However, the integration of startups remains challenging, and achieving a successful collaboration will require a common strategic common.

To sum up, sharing a common strategic vision is a key success factor for collaboration. Still, for innovation leaders to define and support a strategic vision, aligned with the companies’ strategic objectives, it requires direct support and involvement from strategic executives and, more specifically, from the CEO. Indeed, this would remove unnecessary processes, allowing for direct and quick decision making.

1 – Rooney, T., nd. “Big Strategy is dead”, Fahrenheit 212. Available from: <https://cutt.ly/OgWTnml>

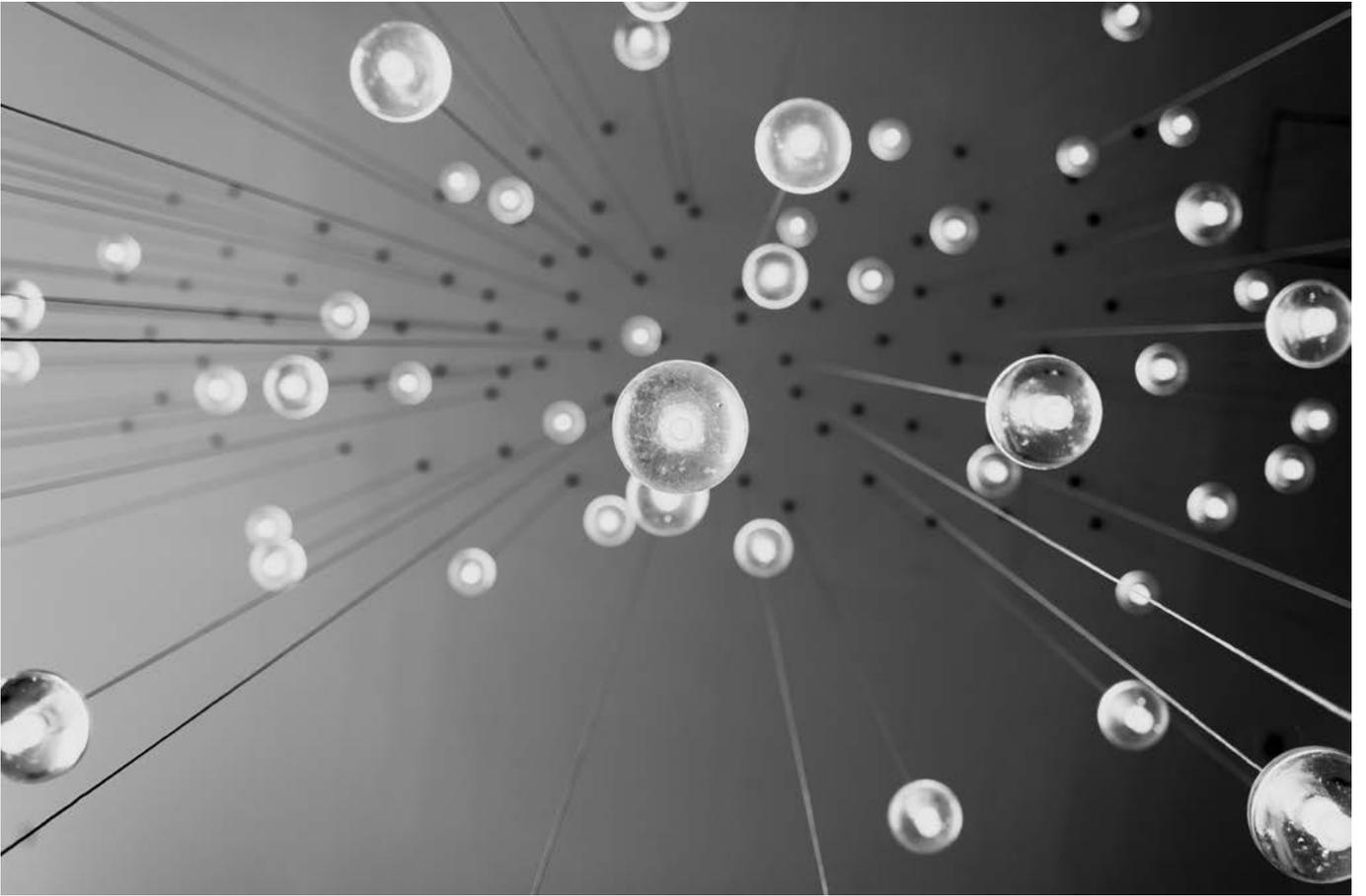
2 – Ibid.

3 – Ibid.

4 – Ibid.



Recommendation 20: As businesses move away from the traditional sectorial silos, finding the right new markets to address and collaborations to pursue is becoming increasingly challenging. We believe that a corporate mission can act as a “compass” when making these complex innovation decisions. The mission needs to be ambitious enough to allow for complete transformation and to open new business opportunities. Ahead of launching a collaboration, companies can then question how their purpose fits in and serves the overall innovation strategy. When pursuing an innovative collaboration, the corporate mission informs the appropriate partner according to business interests and to cultural fit. Targeted innovative projects unfold from the corporate purpose, ensuring smoother collaboration with external actors such as startups.



2 Design a trustful collaboration space (organization, culture, etc.)

Defining a specific collaboration space allows clarifying the common corporate organization, language, and ways of working.

One key challenge is that startups are increasingly demanding in terms of working speed and accessibility to resources¹. To solve these pain points, offering a common work space with specific attributes is a crucial first step. Based on Capgemini's survey results² and from our interviews, we listed three main success factors qualifying such a space. (1) ease access to all necessary resources; (2) provide startups with some autonomy, keeping their own and rapid decision processes; (3) report to high-level executives to ensure that the strategy will remain stable, avoiding staff movements and bringing greater stability.

Autonomy is capital to ensure successful collaboration and efficient direction.

Decision-making should not be centralized and confined to top-management. In a Capgemini report on innovation, Courtney Bott, director of innovation at Medline Industries, stresses the importance of allowing autonomy and ownership to innovators to enable them to scale their innovation successfully: at Medline Industries, innovators are given more autonomy, and they can "decide what innovations to scale" which "helps sustain a decentralized culture of innovation throughout the company." She adds that project owners "are in the best position to assess projects across diverse areas like manufacturability, clinical, sales, and market access" and that "it is really important for us to have an internal champion and entrepreneur who says, 'we are going to scale this and make it a business' and who takes it from an idea to scaled execution³."

Pierre Ferron, TechCenter Software Métier Manager at Schlumberger, noted that when collaborating with startups, they "don't try to influence the startup towards what we need, but rather to see if what it develops can be used" because "trying to divert the startup from its main objective to work for a big company can often prove to be fatal." **Autonomy is thus crucial both to the success of the collaboration, and the longevity of the startup.**

In addition to those success factors, building trust is crucial for partners to bond

– regardless of the type of entities involved in the partnership (universities, startups or corporates). However, trust is particularly relevant when collaborating with startups – as suggested in our interview with Alexa Dembek "it can be challenging to partner with a startup. Startups are highly passionate – they make a lot of sacrifices and are determined to make a difference in a marketplace. These traits sometimes go along with a difficulty to give up full control over certain decisions. With this in mind, partnerships are about building trust to create synergies and opportunities and as long as the roles are clarified from the beginning, even before settling a partnership, these collaborations tend to flourish."

For instance, Air Liquide set up a dynamic and efficient partnership with WAGA Energy which accelerated their joint developments for biogas business. Waga Energy was founded by three engineers who left Air Liquide to pursue innovation in the recovery of gases emitted by household landfills, after Air Liquide chose not to pursue the project further. Despite the separation, Air Liquide and the new startup WAGA Energy remained close: Air Liquide brought financial support without "smothering the startup," Air Liquide engineers continued to counsel the startup. Both signed a commercial partnership early on in the project. The corporate culture at Air Liquide, which is open to innovation and partnership, played a large part in ensuring this collaboration's success⁴.

In our interview with Jean-Philippe Clément, Manager of Data Processes and Solutions at the City of Paris, he argued that startups and corporations have to achieve the balancing act of both carrying added-value while being complementary. "The large corporation brings insurance, markets and contacts. It must accept to stay in its place as an intermediary. It is not the complete leader of the final product or of the way of looking at it. The startup, for its part, must agree to open the drawers, to explain." He believes the key to solving these concerns often rests on a "very formal framework" which will foster "trust [when] working together."

1 – Capgemini, 2019. "Capgemini et Le Village by CA: Baromètre de la relation startup / grand groupe, en 2019" Available from: <https://cutt.ly/IgWYhi7>

2 – Ibid.

3 – Capgemini, 2020. "What's the big idea?" Report available at: <https://cutt.ly/kgWTTq9>

4 – Sari, E., 2017. "Waga Energy et Air Liquide, une scission fondatrice". Les Echos. Available from: <https://cutt.ly/5gWTibL>

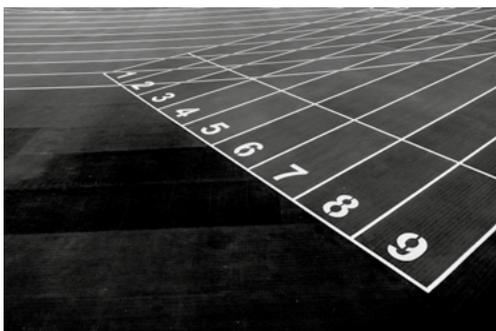


Recommendation 21: Collaborations between startups and large companies are critical for innovation but they often turn into failures. The complex processes in place in multinational companies tend to jeopardize the startup’s autonomy and unique work culture. Additionally, startups often lack direct access to the collaborating company’s top management and decision-makers. To ensure these collaborations are successful, startup leaders should be considered as strategic players, directly reporting to an executive committee member or ideally to the CEO. This organization will provide startups with a clear understanding of how the company intends to evolve in terms of strategy and provide an opportunity to build trust-based personal relationships with key stakeholders – helping them to fast track certain projects, get adequate resources and generate more organic synergies. Similarly, for CEOs and executive leaders which are increasingly required to innovate, building strong relationships with innovators will allow them to grow and build new skills – generating a “win-win” relationship.

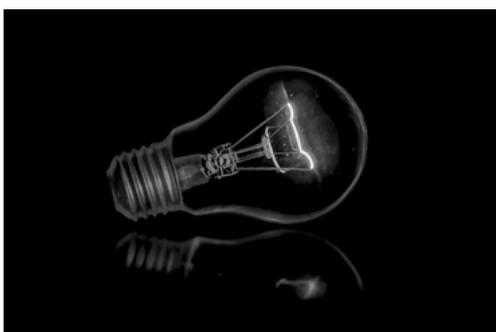
In alignment with recommendation 1 – to ensure this investment is concretely achieved we suggest in addition to set KPIs for each executive committee member to measure their time spent with startups – but also how much they invest financially in startups (through partnerships/co-creation, procurement spendings or fundings). By three years, each business unit should aim to spend about 20% of their corporate budget in procuring services from innovative startups, in co-creating with startups or in investing in startups. We deliberately set an ambitious objective to foster change and investment in the future business ecosystem. At a macro-scale, this objective is also aligned with the European countries’ share of GDP dedicated to investments (about 20%¹).

¹ – World Economic Outlook Database, October 2020

VIII. Conclusion



As the world faces increasingly complex and ever-evolving challenges, innovation is the key to remaining competitive and relevant. The European innovation ecosystem has immense potential, but it is also riddled with obstacles that hinder its ability to flourish in the fast-paced global context.



Rather than attempting to emulate other actors' success in copying their processes, this white paper has demonstrated how the **European ecosystem can draw inspiration from the American ecosystem, while capitalizing on its strengths and culture.** Developing a robust innovation culture, overcoming market fragmentation, identifying efficient financing processes, and encouraging collaboration between actors will strengthen the European innovation stage and foster a sustainable, competitive and unified ecosystem.



Both the public and the private sectors have a role to play in boosting European innovation capabilities. All levels of the business fabric – from individual innovators and startups, SMEs and mid-cap companies, to large corporations – can and must collaborate to produce cutting-edge innovation.



Beyond chasing EU unicorns, this white paper's recommendations aim to provide the tools for internal changes in companies, enabling them to make them more receptive to innovation and efficient in their innovation strategies and endeavors. They also seek to achieve a powerful regulatory and financing framework to accompany all innovation stages and oversee the entire European ecosystem. Finally, in identifying key innovation sectors and promoting networks and collaboration, these recommendations hope to kickstart dialogue and exchange around innovation strategies across the Union and between relevant actors.

IX. Our recommendations in a nutshell

 1: Create a European Barometer to measure EU companies' and governments' rates of investments in innovation in order to incentivize companies to formulate and communicate the importance they give to innovation.

 2: Encourage the Banque de France's initiative in increasing the general public's economic and financial knowledge to promote innovation and entrepreneurship among the general population. Additionally, provide business training in schools, allowing teenagers to develop business acumen.

 3: Accelerators, like those launched by Station F, Paris&Co, Schoolab or others, should provide help to new ventures in finding the right people to work with, at the right time, and at a reasonable cost. This is critical to help CEOs recruit new "delegate" roles, ensuring they align with the latest cultural and business needs.

 4: Build a strong corporate innovation culture at the executive committee level with a Chief Innovation Officer to challenge the company's strategy and to serve as the Chief New Business Officer identifying new growth opportunities.

 5: Seize the opportunity given by the current situation in regards to remote working in order to take advantage of creating more diverse teams – geographically and culturally. Provide managers with specific training to better manage remote-work and diverse teams.

 6: Simplify company procedures and requirements to work with startups and scale-ups. Develop KPIs to measure the company's share of investments in young EU tech companies, through their procurement spending, which would be openly shared at an EU level.

 7: The EU must identify and focus efforts on a limited number of key innovation priorities. These three EU key innovation fields should be Cybersecurity, Climate, and Health as they represent major business opportunities while aligning with the EU political agenda.

 8: The EU should develop compelling and inspiring narratives on the selected key innovation fields. Whereas the US built a narrative around the frontier myth, the EU should position itself as an institution acting for trust and efficiently communicate on this purpose to establish it as a founding innovation myth.

 9: For the EU to financially catch up with innovation giants, it should focus financial resources on a small number of sectors. The EU's financial resources for innovation should be devoted to the identified key innovation fields: Cybersecurity, Climate, and Health.

 10: The EU should take every possible action to create common regulators and enforce their authority in the fields of privacy, competition and consumer rights. It should strengthen the European Data Protection Board and create a common European Competition Authority and Consumer Right Authority.

 11: Create regulatory sandboxes at the EU level in the key priority innovation fields. Creating EU-wide sandboxes would ensure that all regulatory sandboxes are aligned and abide by the same objectives facilitating the introduction of innovations on the single market.

 12: The European Commission must accelerate implementing a unitary EU patent. The unitary EU patent would represent a significant gain for business investing in Europe and facilitate innovation management across EU countries, therefore encouraging more and more companies to expand throughout the European market.

 13: Make Euronext more attractive for European investors and companies, and eventually for American companies. Using fiscal and regulatory incentives, encourage participation in the market so that European startups can raise funds. Additionally, harmonize the taxation of stock options for startups across EU borders – not only to incentivize employees at the same level across the single market, but also encourage public investment in stocks.



14: Encourage technological innovation based on tax incentives for participation in pan-EU Tech funds. Additionally, there should be specific fiscal advantages for sophisticated investors investing in seed rounds (initial investment rounds that are not open to the general public) similar to the UK's Enterprise Investment Scheme.



15: Enlarge the mandate of the European Investment Bank (EIB) to allow the European Investment Fund (EIF) to invest directly in innovation companies. More specifically, allowing it to participate in series C and D at higher levels to help European startups get to the unicorn size. Since enlarging the mandate requires unanimity of EU member states, in the interim encourage the EIB to increase its investments via funds of funds, in funds that specifically target direct investments in innovation companies and later stage European startups and scale-ups. European investment should amount to €50bn over four years to help fund 40,000 startups across the Union.



16: In France, use the unclaimed assets held by Caisse des dépôts et consignations (€3.7bn in 2017) for tech investments as an investment in the future of the country and the EU.



17: Encourage employees to network within the innovation ecosystem by assigning a percentage of the overall innovation teams' objective to networking, by having all employees share the innovation networks they are a part of, by financing the participation in conferences and summits and by allowing employees to spend one working day each year in the startup of their choice to understand the culture better, and build connections.



18: Create a single strong European Innovation Agency to foster EU-wide innovation collaborations, strengthen existing EU innovation networks, and ensure their compelling and effective governance.



19: Clarify and strengthen existing EU data-sharing initiatives and encourage mid-cap companies and SMEs' collaboration with startups across the single market. Additionally, create secure and transparent solutions that will allow all companies operating in Europe and following GDPR, regardless of their nationalities, to collaborate and leverage their industrial data without necessarily sharing and accessing one another's confidential data.



20: Create a corporate mission that can act as a compass to drive innovation decisions by being ambitious enough to allow for complete transformation and to open new business opportunities.



21: Give top level access to acquired startups by having them report directly to the CEO in order to give them direct access to strategy and provide an opportunity to build trust-based personal relationships with key stakeholders. CEOs and executive leaders will likewise be more directly involved in innovation generating a "win-win" relationship.



X. Interviews



John Brockland, Hogan Lovells San Francisco

Partner specialized in
technology and intellectual
property (IP) transactions

How to choose a framework for cooperation

When it comes to cooperation in innovation, the more parties you have, the more difficult it gets. What people tend to do is to focus on what each party is bringing to the table, and what's likely to be developed during the collaboration, before agreeing on how that is going to be allocated.

There are a number of different approaches parties can take to owning developed IP. Two common approaches include joint ownership or allocation based on key interests.

Either the product developed is jointly owned, which incurs legal complexities, or, partners think about what each party is bringing to the table and what their key interests are, which tends to be more successful.

For example, if you have a collaboration between a company that specializes in manufacturing technology, and a company that specializes in the products that are to be manufactured, they have to get together in order to figure out how the manufacturer might make the product for the company. They might say that anything that comes out of the collaboration that relates to manufacturing processes is going to be owned by the manufacturer, and anything that comes out of the collaboration that relates to the design of the end product is going to be owned by the product company.

Managing complexity in co-innovation

In the example where two companies are creating a product together, they must agree on whether they will both be in the market selling the product. One of them may be a small startup wit-

hout sales staff or many customer relationships. In that case, it is in their interest that the bigger company is the marketing entity. Afterwards, they must also agree on proceed sharing. There is no one-fits-all solution, as every product and every business are different, and each collaborating company brings different things to the table. Unique solutions must be adopted for each collaboration.

Culture clashes between large corporations, and young startups

Sometimes, big companies have more rigid and complex processes that may hinder collaborations with startups

This cultural division varies depending on the context. In Northern California, big tech companies from the Silicon Valley are often accustomed to working with startups, because they have found that startups are a great source of innovation and technological advancement. Big companies also understand that when collaborating with a startup, in the event of a liability, they will be unable to pay for it because of its limited financial resources. Corporations will therefore take in consideration this fact into their business models and will be wary of overextending themselves.

Collaboration may take the shape of a company investing in a startup, because big tech companies often have business units dedicated to investing in this type of structure. While an equity ownership arrangement does not itself cover details on collaboration such as ownership or licensing of intellectual property, it does help to align interests and create trust, and thus eases collaborations. Companies usually remain mino-

rity investors, yet it enables the startup to feel more comfortable as the company becomes a stakeholder. There can be cultural differences when American companies collaborate with European startups, but they are not real impediments to striking a deal, because businesspeople usually speak the same business language. Even in countries like France or Germany, which have more rigid regulations, tech companies often can find ways around legal obstacles and are accustomed to it.

Different habits between tech and industrial companies

Tech companies may be more accustomed and open to dealing with startups because they often were startups themselves at the beginning. Still, large industrial companies are increasingly comfortable with technology and collaborating with startups. They do have cultural obstacles they need to overcome, but many are interested in taking that step by looking for advice and seeking to take advantage of collaboration opportunities.

Employee mobility also plays a role in this process. Indeed, as people who previously worked for tech companies integrate more established industrial companies, they incorporate a more flexible tech culture.

Fundamental changes in culture and mindsets

Large companies need to get used to the risk: out of five collaborations, four might lead nowhere but the fifth one will be great. The company culture needs to be adapted to this mindset, so that business developers do not get punished for failed collaborations. Employees need to feel free to take risks, and have the freedom to fail, so long as they can draw conclusions and learnings from that failure as they move to the next project. Willingness to take risks, in a smart way, is crucial.

This can be enabled through key messaging from senior management: ensuring that employees are aware of the company's clear direction and search for growth through collaboration with innovative startups. Everyone must be on board.

Intellectual property

With regards to intellectual property issues, the legislation in the US is flexible and enables companies to easily transfer, license or divide property.

[External input: Legislation in continental Europe is more restrictive on licensing property. For instance, companies in France see intellectual property as rigid ownership and struggle to comprehend how they can use it as an asset in contracts.

Still, it can be overcome. The French company "Parrot" was manufacturing drones and has known a commercial success and interesting technical and technological developments. They were smart enough, as a small company doing drones, to develop a huge portfolio of patents. When they decided to invest in an entirely new business, and their company was taken over by another company on a friendly basis, most of the value came from a pledge they put on their portfolio of patents. This is unusual in France: they understood the value of their company and their IP patents, and understood that their next big inflow of cash would come from pledging their IP. In the UK or in the US, it's probably much more of a usual move.

Global competition is raising the level of IP. Europe and the US are both investing on IP as a pipeline for developing the next generation value. For some years now, there has been a clear alignment on the level of protection. But in France, many still think they can't protect what they want or the way they want to do it. As an example regarding trade secrets: there was a huge change with the Defend Trade Secrets Act in the US, at the same time, a very important directive was enacted at the European level that is now implemented in France, to ensure the same kind of protection level on trade secrets. Therefore, we could do most of what is being done in the US today without much problem. We need to educate people to that.]

Partnering with educative institutions such as universities

While some universities such as Stanford are very well versed in collaborating with companies and startups because they have developed practices for technology transfer, many other universities do not have such processes in place. They lack legal support from their technology transfer office. For startups, partnering with American universities may still be easier than with French ones, but it is far from being as easy as partnering with private companies.

Of course, people can still find ways around it: for instance, in mergers and acquisitions, when the startup that is being acquired has professors as part of the founding team, who did their work at universities and have patent licenses originating from those universities. But still, there's always a significant amount of work that must be done to ensure that we know who owns the IP and that the licenses are going to survive the transaction. The transactions can thus become complex.

But this can change with experience: once universities are accustomed to partnering with companies and startups, and once they acknowledge that it can bring value back to them, they can become “commercially minded” and more flexible over time and get better at it. Universities that are particularly good at it are the ones who have done it repeatedly for a long time.

No need to be the owner to get some value out of a patent

When you have two owners of a piece of valuable IP, then those two entities are stuck together, they must deal with each other, and it can be difficult. I encourage therefore having only one owner of the IP. As a lawyer, I think that the party that has the strongest interest in it should be the core owner. The other party can get a license in order to virtually get all the rights it needs in order to practice the IP in a specific field. It just makes it much more streamlined than to have two owners who must collaborate all the time, and maybe don't get along after a while.

In addition, you don't have to be an owner of IP in order to get value. If something is developed and you have a license to practice it or use it or

exploit it, that's value! and if you have a revenue sharing arrangement where even though you're not an owner, you get a piece of any royalty revenue that comes out of it, that's value! So, co-ownership has a surface appeal to a lot of people (especially from the business sector), but it is not by any means the only way to get value out of IP.





Grégoire Chauvière Le Drian, European Investment Bank

Head of EIB Group Office
in France

What is the EIB

The EIB is the bank of the European Union. It is made up of 27 shareholder Member States which, together with the Commission, define the institution's strategic orientations. It was created in 1957 by the Treaty of Rome and until quite recently was seen as a major bank dedicated to public infrastructure for counterparts that already knew us.

Over the last ten years or so, it has evolved considerably. After the crisis of 2008, it entered the field of European politics as an actor to the rescue of certain sectors such as the automobile and aeronautics industries, which it financed massively. There has been a first change, that is to say the institution has put itself at the service of companies in strategic sectors.

In 2012, there was a capital increase by the EIB, which allowed us to make more investments, as a response to the crisis. The EIB has a counter-cyclical role. Until 2008, yearly investment was around 45 billion euros and in 2011 it was increased up to 79 billion euros of investment. We almost doubled the figure; even if today it is a little bit lower than in 2011 (63 bn), there has been an upward trend for the last twelve years.

Between 2010 and 2015, we started to invest more in volume and to be criticized a little by economic actors and some political representatives who said that the EIB only took easy risks and financed neither the real economy nor innovation. It was also said that it was too attached to the AAA approach (the best possible rating, which is the basis of the financial model to be able to lend over the long term at a moderate cost).

Just as a reminder, the EIB has four main objectives:

– The first is to finance infrastructure, which is the EIB's historical core business, our traditional clients are local authorities and large public companies.

– The second is the financing of SMEs, which is done in an intermediated way via banks and investment funds, which represent a quarter of our activity in volume. The idea is not to finance banks as such but to finance SMEs through financial intermediaries; we do this via our subsidiary, the European Investment Fund (EIF).

– The third objective is innovation in the broad sense, which includes both R&D programs of companies, but also the financing of innovative companies, which will invest in breakthrough technologies.

– The fourth axis is dedicated to the environment and includes a number of fairly broad areas such as the fight against climate change, energy transition, biodiversity, water treatment, etc. This axis is set to grow in line with the commitments recently made by the EIB to become the European Climate Bank. This has been confirmed by the approval on the 11th of November of this year of the Climate Bank Roadmap by the unanimity of the Board Members. This does not mean that we are going to reduce the other priorities, but that they will be primarily at the service of the fight for the climate.

The EIB, taking too little risk?

For the EIB, AAA is the basis of the model: AAA allows it to issue on the financial markets and

Photography: Hugues-Marie
Duclos – Régions Magazine



since it is not intended to make a commercial margin, it gives this financial advantage back to the beneficiaries of the EIB. So the EIB model, which could be considered as a mutualist model, makes it easier for the 27 to raise money rather than as a single state/

Despite the deterioration of most of its shareholders, the EIB has maintained its AAA rating thanks to the quality of the asset portfolio and project valuation.

This recurring criticism has been taken into account and a proposal was made with the Euro-

pean Commission in 2014 to create a guaranteed fund to allow the EIB to take more risks and in particular to support companies in their growth and innovation projects, without weighing on the institution's balance sheet. This is what was later called the Juncker plan, which was implemented starting in 2015 and will be successfully completed by the end of 2020.

This model is interesting because it changes the use of public resources. Instead of financing a certain number of projects, particularly in the innovation sector, in the form of subsidies or repayable advances, we have shown that by putting part of the resources identified for innovation into the H2020 or CEF programs, we can have a multiplier effect. To give you an order of magnitude, at the time the project was presented, a 21-billion-euro guarantee would make it possible to mobilize 315 billion euro of additional financing. This is the figure that was used by the President of the Commission when launching the initiative.

It's a double effect: first of all, there is a leverage effect, that's the role of the EIB as a bank: 1 euro invested in the EIB makes it possible to lend 5 euros thanks to the classic bank transformation effect and, besides, 1 euro financed by the EIB makes it possible to mobilize 3 euros because we never finance 100% of a project, generally speaking we are around 30% and we estimate that we have a multiplier effect of 3. So we arrive at a total effect of 15 between the amount of the guarantee that is proposed and the resources that have been mobilized in support of public policy priorities, in particular innovation.

In terms of innovation, the Juncker plan allowed the EIB to take more risks and thus to move towards helping companies that offered fewer guarantees than would have been required before. For example, we managed to put in place, especially for innovative companies, tools that are considered quasi-equity, which are venture-debt tools, very risky debt tools without entering into the companies' capital. It is a tool that has been particularly appreciated by the market, especially in France and Germany. This tool also represented an advantage for project leaders because for four to five years, you paid back the interest and the repayment of the capital started only in the fifth year, which is relatively

long for companies that were just starting up and were able to invest around 15-20 million euros and enables the company heads to focus on their core business.

The EIB and direct equity

Statutory, the EIB cannot intervene in Europe in direct equity. Through the EIF (European Investment Fund), it makes indirect investment, through equity investment in funds, guaranteed tools with banks and investment funds, and risk-sharing tools, but the panel of tools available today does not include direct equity investment. In the case of the Juncker plan in particular, the idea has been pushed that the EIB could become a bridge, a bit like the FSI, by trying to promote a kind of ESF (European Strategic Fund) allowing direct investment in companies that are potentially strategic for Europe. But this proposition was not retained by Member States because a number of them considered that it was not the EIB's role to be on the boards of companies and to guide their strategic choices. The Commission, through the EIC accelerating tool, with the technical support of the EIB, is trying to launch a pilot project to address this gap.

Although there is a need for Europe to provide financing in a second phase of business growth, I think that the Commission and the Member States are not yet ready collectively to bring this transformation within the EIB. This may come because the current crisis is an accelerator of transformations. During the Spring confinement, a project to guarantee the equity investments. It was a way to promote the equity market since we are convinced that today, beyond credit issues, there is an equity issue, in particular to ensure that companies have the capacity to take on debt to invest in innovation as a guarantee of tomorrow's competitiveness. At the time of the negotiations during the July European Council which enable debt pooling of Member States, this proposal was not retained.

As far as direct equity is concerned, we are therefore not in a position to intervene directly. However, other tools are under study, integrating, with the tools of the EIB Group, guarantee possibilities to multiply the effect.



Jean-Philippe Clément, Mairie de Paris

Chief Data Officer,
Ville de Paris,
@AgentNuM

Mairie de Paris' policy to encourage innovation and allow experimentation

All the work carried out in Paris since 2008 is based on the transformation of the entire Parisian territory into a territory of experimentation for startups, and even more widely.

The public policy driven by Jean-Louis MISSIKA, then Deputy Mayor in charge of innovation, was to say that Paris was becoming a testing ground for all those who wanted to experiment with a simplified legal framework. There was a temporary authorization to occupy the public domain. This is a framework that allows you, for a few symbolic euros, to come and deploy a device. The only commitment is to share the feedback with the city, and this can last six months, renewable once.

This is the first system that we have set up, led by the Paris Region Lab entity, notably concerning a test of innovative street furniture. It is certainly thanks to this that we now have such beautiful bus shelters, but also other types of furniture that have been tested and deployed by both parties. We also tested augmented reality with a system that allowed us to see the Bastille Square at the time of the French Revolution.

Today, the operation is managed by Paris and Co and its division called the Urban Lab. They intervene on two urban innovation districts in the 13th and 19th arrondissements. Various tests are being carried out on autonomous vehicles or the monitoring of energy consumption with virtuous buildings. Everything can be the subject of experimentation, especially in relation to new urban challenges (mobility, energy, circular eco-



onomy, revegetation...). We want to test solutions to our problems. It is open to startups, who also use it as a showcase, but also to SMEs and large groups. For example, Cisco has used this system quite extensively on the Place de la Nation.

Implementation and results of the Open Data program

Since 2011, we have a public policy around open data with different animation sessions. This program allows us to go beyond the open data of the city and to share other data with partners. It started in 2013 with a program called Mouv'in the city with the various major partners of mobility in Paris (RATP, SNCF, Vélib and the Ile-de-France region);

With seven years of hindsight, we can say that each attempt triggers systemic effects at the ecosystem level. For example, this program has been an opportunity for some groups to base their model on open data, such as KISIO.

We have also put in place, from 2015 onwards, Data City, which is an open innovation program where large urban groups as well as startups have come to complement our teams with solutions to meet our challenges.

We get everyone working together. Everyone changes their stance and shares with the others. So there is a circular point of view on a challenge, as well as a very agile methodology. The prototype has to be released within three months to move forward. This triggers a lot of cultural changes within the different organizations. As the startup understands the problem better in terms of its solutions, the large group progresses in its way of working with the public actor and in its integration of external innovations from startups. The city's departments are taking a breath of fresh air to understand the problem differently, walking in the startup's shoes.

A diversity of missions at the service of the city

On the electric scooter project, it took time to create a real dynamic of actors. But the closer we got to a regulatory perspective, the more people we had around the table. I have to say that the Americans were pretty much the driving force. At the time, we had up to eleven

operators in front of us, and the real concern was how to recover and harmonize the recovery of this data. When we started the project there was nothing, and at the same time as Los Angeles did, we questioned the objectives and set a technical framework for each of the operators. This ultimately resulted in a climate of trust for everyone, and we were able to recover the data properly to determine which car parking spaces were going to be most usefully converted to scooter parking.

We have worked for several seasons on the deployment of electric charging stations and the optimization of their displacement. We also had to address several issues such as energy renovation, improving information on worksites and coordination of the actors, as we were also impacted by current events.

We worked on many other issues such as waste management, packaging, and tourist and sports routes.

We did all this for four years. It was rich and very intense. In total we had 450 participants over the four seasons. We are now confident in terms of methodology, and especially in terms of understanding the issues. It can be quite dizzying for the first actors, because things move very quickly, combined with a very strong commitment of resources and means. Despite this risk, adaptation is taking place. Those who take part in a first program then have the desire to do it again.

Success Factors in Startups and Large Group cooperation

We privilege the complementary aspect of the different actors. The problem for startups is that they are afraid of getting their technology taken away. The problem for large groups is that they cannot control the final product.

Each must be able to bring value, complementing the other. The large group brings insurance, markets and contacts. It must accept to stay in its place as an intermediary. It is not the complete leader of the final product or of the way of looking at it. The startup, for its part, must agree to open the drawers, to explain. This is often a problem of trust.

We have provided an answer to this question in a fairly basic way with an experimentation contract. The participants sign a contract specifying what they bring and where we want to go. This contract also clarifies the potential output and the intellectual property of the different outputs. This framework is very formal and takes time to be signed by all the actors, but trust comes from working together.

We are present as a third party, we can play the role of arbitrator by clarifying once again the role of each party. There is also the global facilitator, NUMA, without whom this would not have been possible. We need a facilitator for this open innovation with a solid methodological competence and an ability to deal with all the small and large issues of project management.

Difficulties of the prototyping system

It is about experimentation, prototyping, and there can be no public order, as it must be put out to fair competition. There are not many cases where prototypes are directly transformed into a public order. This causes a lot of enrichment, but it can be long to bounce back after the prototype.

In the best case, a service can have a public procurement perspective, in order to renew something and establish a new paradigm on a subject. In the worst case, there is no follow-up to the prototype. The intermediate case consists in finding, after the conclusive prototype, the way to operate public procurement and to reuse what has been found. Often, long timelines are involved. Very constrained legally, one can quickly be slowed down by the processes of sourcing, public purchase, response to calls for tenders, and this can kill a lot of dynamics.

Our real problem is how to get past the initial innovation. The best answer we currently have is to integrate innovation into the specificities of a contract, which is the ideal scenario for a public actor.

We have also been pushing startups to get themselves listed with the UGAP (public group purchasing institution). It is a great way to get in because if you can convince a public actor to work with you and you are listed with UGAP, the public purchase can be made much faster.

Future program improvements

We will keep the seasonal pattern, which is very driving and is a good way to boost innovation. However, we will be doing fewer topics at the same time. We will keep the prototyping phases with the perspective of knowing from the outset how to go further and integrate what can be produced. Fewer subjects will be chosen but more mature and strategic using the methodology. We will certainly have fewer large groups in the loop and more types of deployments.



Nicolas Colin, The Family Cofounder and Director

Companies should change the way they work with startups

It's true that at The Family we've been trying to educate businesses when it comes to tech and startups in general. That doesn't mean that we believe they should work together. Our view, to sum it up, is that large corporations should do two things with startups:

- They should buy their products, if it is possible. They can facilitate access for selling some software, give them access to key accounts in the corporate world.
- The other thing that large corporations can do with startups is acquire them when it is relevant and at the right price, which is a lot.

All the rest is, in our mind, useless. Any kind of partnership is usually useless. When it comes to Corporate Ventures / Partnerships, we are still not really sure about how it aligns the interests of the startup and the corporate investor. Except if the corporate investor deploys capital, in order to ultimately acquire the startup.

On Corporate Incubators

And a third thing that is kind of useless is everything that goes with corporate incubators as a trend. It is useless for startups because they want support. That support requires incentives and specific skills. But you only have an incentive in the startups succeeding if like The Family you have equity stakes in them. That means helping those startups grow is your core business. If it's something on the side that represents an infinitely small fraction of your entire business, it's not a priority. You do not really have any incentive to

provide everything those startups need to succeed. So, from the startups point of view, especially if there's no cash involved, it's useless. [For the startup founders,] you have the illusion that you're closer to decision makers in a large corporation, which might make it easier for you to sell your product or to access key resources. However, experience has proven that the proximity you gain by joining such a structure is cancelled or offset by the slow pace and rigidity, the time spent in meetings, all those things which come with exchanging with a large player.

From point of view of the large corporation, if you ask them why they have an incubator, they will usually tell you that they want to learn from innovators and work with them. The truth is that people working directly with startups learn a lot. But those people do not have enough clout in the organization to actually translate what they've learned and turn it into actionable stuff. In theory you're learning a lot, but what you learn is just a pile of paper that nobody reads.



On Corporate Ventures

It's exactly the same for corporate venture. When other VC firms pitch large corporations to have them in their fund, they argue that it's not a lot of money for the company because they have



huge assets. In exchange of that small amount, the company would learn a lot because the VC would provide them with reports about everything that's going on in the portfolio and everything about the deal flow and what trends they see, etc. They usually agree on those terms. Still, all the reports and information that comes up to the company are not used. It doesn't influence the strategy, key executive decisions, Product Management, or anything.

In the end, you only do it to make the case that you're doing something, while that is opposed to innovation. A lot of people are asking companies, during interviews, what they are doing in regards to innovation. And these incubators are used by the company to show that they innovate. Financial analysts will start about how to reposition the business and make sure that the company won't be disrupted by software driven new entrant. The company will need to have as much ammunition as possible. You want to make the case that you're aware that something's going on and are doing something to cope with it. The bit of money that you have to put in a corporate venture funds,

or some corporate incubator, is a cheap thing to make the case that you're doing something.

We know that large incubators do not innovate. It's been written down by famous business professors and thinkers. But the reality is that very few large players do it in general. So, the thing you should do as a business is to fund a startup. That's a subsidiary of yours. You should put as much distance between the parent company and the startup, to make it possible for the startup to address the market in their own way, to shape up their own culture, build their own relationship with customers. At some point, if it works, it will grow from there. As a result, you have a growth plan on another segment of the market.

Why doesn't it help the company?

You never attract the best and the brightest in the organization when it comes to innovation because everyone knows that if you want to climb up the corporate ladder, you need to be in charge of something in the core business, not in innovation. So, you have this selection effect,

which is that the best and the brightest either focus on the core business, leave the company, or find something else on the side.

We know what has to be done, but it's actually very hard. The question is, would you sign a check with a big amount and trust a team of people that are effective and accountable, to build up the future of your business. That's how it's been done, forever, but the reason it's very rare is that very few large corporations want to take the risk. And those who do usually do it by accident, and it works. It is easier to have incubators and feel like you are doing something.

People in the startup ecosystem shouldn't lose a minute trying to work with large corporations, because it will never lead anywhere. It always cost you a lot of money, and it will most of the time it will kill some part of the startup.

Using IBM and Lockheed's Strategy to successfully work with startups

Clay Christensen, author of the Innovator's Dilemma and who is the theorist of this topic, often cites the example of IBM. When IBM realized that they were about to be overthrown by the PC revolution, they decided to make their own PC. And what they did was that they assembled a team, sent them to Texas and had them build a PC without reporting back to the parent company. One year after that they had invented the PC.

The only thing they messed up was the intellectual property—which made it possible for other companies to reverse engineer the technology allowing other manufacturers to take market share. But the core technology was effectively designed by IBM and they probably had the intent of going further with it as a business. It's an interesting example because it was a case of deliberate and intentional innovation.

They had devised the method, inspired by a historical precedent, Lockheed. Lockheed had those things known as the skunkworks. The skunkworks were the kind of lab for innovation within Lockheed Aviation. They set out 14 rules. One of them was that, as an innovator, you should control the relationship between you and customer. You shouldn't have to go through

the parent company to sell a product that's new, because if it's new it probably means that it will be bought by different customers or at a different price, or with different tabs. If you go through the parent company, they'll bring you back to the old ways. So, skunkworks apparently contributed to Lockheed being a very innovative airplane manufacturer. Over time, IBM used that method to build a PC.

Then you have other interesting examples that look more like accidents, for instance Nespresso. I've written about their history in my blog posts. It was basically a series of accidents. A guy invented a machine and tried to sell it, but no one was interested. Then 10 years passed, and someone suggested they could create a club, and instead of trying to sell the machine they could just sell the capsules. They created the club and 10 years after that the club ended up being profitable. Someone realized it was a marketing play rather than technology and it became profitable. Now it's one of the main growth drivers for Nestle worldwide. There are two points of this story. The first is that it's all a series of accidents. It's because the right people were over here at the right moment and maneuvered within the organization. And the other thing is that it couldn't happen today at Nestle because they've been tightening management, and there is corporate finance and budgetary control. They need to be accountable to our shareholders. So, they had to tighten the bolts as much as possible, which means that no accidents could happen now.

Current corporations that allowed internal innovation

Steve Jobs actually implemented the theory. He reorganized capital allocation within Apple to make sure it could work. In a normal Corporation the iPad would have been killed by the head of the MacBook division department, because, it would have emerged as a direct threat to selling more MacBooks. A lot of people would switch to having only an iPad. But Steve Jobs had designed the financial incentives within the company to make sure that the head of the MacBook department wasn't incentivized on the volume of sales, which meant that his or her personal bonus didn't depend on how many MacBooks were sold. So, he didn't have as much of an incentive to resist

launching the iPad and bringing it to the market.

Even more recently, there is the case of Goldman Sachs launching Marcus, which does retail banking. Their first product targeted at retail consumers. Goldman Sachs is a traditional investment bank, so they only served very specialized clients. But now they serve customers and markets too because they've decided to do so. They see that it's a critical growth driver for them, plus it is a way to rebuild their image after the financial crisis. It seems like it's going quite well, as they've just launched in the UK.



Learning from the Yozma to grow the VCs ecosystem

I'm sure we can do something similar to what was done in Israel, but the problem we have on that front is that the Israeli precedent is not that well known.

I read a lot about Yozma, mainly from a single source which is the book Startup Nation. There's an entire chapter about Yozma that's quite striking because they say that without Yozma, none of this would exist today. But when you go to Israel today and you ask about Yuzma, most people won't be sure about the influence it had or what it really was. And if you look for other sources than startup nation, you won't find any-

thing, especially in English. I also recently talk to someone from the startup nation central in Tel Aviv, who wasn't so sure Yuzma had such an influence because they don't know much about it and do not talk about it either. The issue is that the only source I saw described it as game changing and that source is adamant. I asked for other sources in Hebrew, but they found nothing because no one has been interested in it. And that's the problem in a small country. I'm sure that in the Israeli case something very important happened there. But very few people were there at the time, to draw the lessons and write them down for the rest of the world. So, we could do something like Yozma.

There's a discussion going on these days around US VCs coming to Europe. You'll find a few articles online about Sequoia and their London office. They're doing it in the worst way possible. They want to use the brand Sequoia, allocate a bit of capital, hire local partner here, use the network and personal brand to attract entrepreneurs. What they should do instead, which would resemble the Yozma, is to take someone senior from their core team to have them relocate in Europe. They would be bringing not only the brand and the money, but also the experience of an ecosystem that works, which will make it possible to educate the local ecosystem. That would be Yozma type of enterprise for today. The government could create incentives for them to come. For instance, they could provide half of the funds to invest in local startups in exchange for them sending someone from headquarters. Because the issue here is that if you are a Venture Capitalist working in London, if you are extremely ambitious person and knowing that being a European you don't really stand a chance to compete with senior management in Sequoia back in the US, would you want to work there or wouldn't you prefer working for a European VC firm? European firms guarantee you an opportunity to climb up the management ladder and make a lot of money.

What's interesting is that Goldman Sachs was once confronted with that dilemma. They needed to expand and did it globally before any other US investment bank. They had to experiment a lot. They asked themselves, as they wanted to be in London, if they wanted to hire a British person, or send American staff. In both cases they

would be confronted with problems. If they tried to hire British people, they would not attract the best because the best will always go work for a British bank. If they sent American people, they were also not get the best because the best would prefer to stay close to management in New York, as opposed to be away in this remote outpost in London. Plus, they wouldn't do a good job anyways because, not they would not know the local society nor its customs nor the main players. So, they finally cracked the code, apparently, quite successfully by deciding to send people from the US, and then hiring what they called senior advisors, not to open doors and to help sell products, but to educate their people about the local system. Sequoia could do that really well. The French government should offer that kind of solution, helping the firm to connect with the local ecosystem by introducing them people they can hire as advisors.



The 3 steps to a mature investment ecosystem in Europe

Everyone complains about the lack of capital, but the truth is that capital always comes after startups, History showed it. First, we need startups, then capitalists come. The corollary of that is that every first generation of startup has to make do with just enough capital. Instead of raising proper capital, you raise money from a corpora-

tion or from the government. And in both cases, it will come with a lot of strings attached and a lot of problems. But if you overcome those problems and manage to build the successful startup anyway, then you have proved that it is possible. After that, capital will flow from all around. It will first be from capital rich countries and then locally.

But it's always in this order: first generation has to make do with corporations and government, second generation will usually do with foreign capital, and third generation will finally convince local capitalists to be less interested in real estate and a bit more interested in startups.

If you say that there is no foreign capital tolerated here, then you lose the second generation, and you're stuck with the first generation without any perspective of going beyond being funded by corporations, or the French government, which will never lead you right.

With time, the seniors from abroad will get used to the ecosystem and become more tolerant to the idea that the company they invested in might just stay there and have the headquarters there. They can still make a good investment in that case. If the senior managers stay in the US, they will just read about France in the papers, hear about the strikes and the labor reform and the pension system and so on. They will think that the startup would do better in the US. If you actually live here, you know what's going on, the good and the bad. The problem that we have is that we don't have that special relationship with the US, that makes it obvious to them. For some US VCs, it was easier to tell themselves that they could spend a few years in Israel in order for them to be close to the startups, because of the special US-Israel relationship and the language (i.e. their proficiency in English).

But we can overcome that. It's not impossible for us to try to do something like that at the E.U. level or at the French level. Sometimes you need to play on the petty competition between the cities. You should definitely play on the fact that Paris is trying to catch up on London. You can present the fact that a good idea to catch up is to attract US VC firms here. They will be interested in how to do so. You can go through the list, and establish the connections.

How the **Crédit Impôt Recherche (CIR)** may slow innovation

If you ask a startup, “free money” is always going to be a good idea to them. Entrepreneurs will do whatever it takes to get it, no matter if it means filling out forms and pretending to do a lot of high-tech research with scientists and partnerships with universities and so on. They'll do it, because they want the cash. So, if you ask them, it is a great thing.

What startups do not see, because they're at the individual level, is the aggregate impact of this policy, which I think is rather negative. It's negative because it doesn't discriminate between good and bad innovation. Which means that you provide 10 to a startup that has a real shot at growing and making it, while you provide 100 to a bad IT service company, pretending to do research with a lot of AI and crypto. You don't tilt the odds in favor of startups, you actually reward those who are ready to spend the most time filling out the form. And then there's the dynamic effect, which is when a startup realizes that to access that cash, they need to pretend to do things that they actually don't do.

Even the fact that they pretend to do things contributes to weakening the focus and building a startup at that stage is like running a sprint. If you turn your head to check if your rival is catching up on you, you've lost. If you turn your head to fill in those forms, you've lost. Of course, if you are doing it for the right reason, for instance to grow in another country, that's not losing time. But begging the government for money by pretending to do research is a waste of time. The government is happy to provide money to startups, it also looks like they're doing something.

It's very hard to pinpoint the reason why it doesn't work and is not the right thing to do. But there were one or two government reports questioning the efficiency and sense of it. There is work from economists, mostly Americans who have questioned it. But how do you actually quantify true innovation, that would result from this type of initiative?

However, it can still serve the purpose of building the ecosystem, if it can be hacked by clever people who use that money to go to the next

stage. The problem is that people who keep on believing in that kind of money never grow their business.

There was this project by the US government called Small Business Investment Company, SBIC. It was historically used by the first VC firms in the 1960s. The first legendary VCs first started their career as channel partners raising money from SBIC. But in the early years, they all realized that it was a bad thing. It was not the right instruments; it was not equity. There was too much paperwork and many constraints as to what kind of investments they could do. They just used it to get warmed up to a few deals, and then went on to raise proper capital without constraints. That is always how things go. It might be bad, but it can be hacked by people who then move on to the next steppingstone

The barriers for entrepreneurs to enter the Stock Market in Europe

I think it is clear that we need more startups in stock exchange. We need to make it easier for companies to go public, because it has almost become something from the past. We need to acknowledge that public markets have been rendered too difficult, by too many layers of regulations. In the US, businesses are preferring to either not go public or do it way much later. Especially because it costs a lot of money to become public, you need to be compliant with many rules. A lot of the money goes to pay your lawyers, accountants, auditors and investment bankers. It has become a luxury to go public.

Another point is that by going public in the current macroeconomic context, you end up competing against other stocks that are giving capital back via dividends. Bloomberg explained how, in the past, companies would go public to raise more capital from investors. Today, they go public to be able to send capital back into the form of dividends and share buybacks, because most companies, not the startups, but traditional companies don't know where to invest. Their only option is to send the capital back. If you're a small stock competing against large stocks that come with an income stream, it will be difficult to find people interested in owning your stock.

To sum it up, the issue is that there's too much capital to be invested and no one knows what to do with it, except for entrepreneurs. But entrepreneurs are seen as too risky.

We should acknowledge the fact that companies will stay private longer if not forever. And we should make it easier for households to invest and benefit from them.

Startups Exit Strategy in Europe

There are two competing views on this subject. The first one is that because we don't have exits, it's impossible to attract investors in the asset class to begin with. How would you convince an investor to put some money in a VC fund that invests in series A if they don't see the exits?

The other view is quite different. It says that we should simply build up the ecosystem from seed to series A Series B to Series C. It argues that when we have enough companies and reach the latest stage where it's time to exit, the exits will come by themselves. There will be an alignment to the market.

The short answer is that we don't know. There is probably a bit of both. Most investors consider the historical returns. They might see that there are no exits and rather put their money in a US fund. And even if you are a European fund, the smart move seems to expand in the US over time. That is the case with most European firms, they only have 40% of their capital invested. It shows that capital always chases the returns.

However, I tend to go with a second opinion which is that exits will come and I see two reasons for that.

One is that we're reaching a level of understanding of the startup world, which makes private equity firms consider investing in them. There are some signs, for instance you can see Blackstone hedge funds, Tiger Global, starting to deploy capital in this asset class. They're very quantitative in their investing approach, so it means that they are now managing to put the startup world into equations and models for possible success.

It means that the exit problem will be solved beyond the C Series by large private equity

funds, buying out the companies from VCs and giving them cash to invest.

Another reason is that Silicon Valley is bound to be disrupted. According to the theory of disruption that we mentioned earlier when talking about corporate innovation, when you do everything by the book, you lose. All incumbents end up being disrupted because they focus on the most profitable segments of the markets and neglect the low end of the market, where customers demand cheaper simpler products. The reason why they neglect that low end segment is because they realized that the margins are very thin that it's not worth it. But by fleeing away from that segment, they leave it for someone else to claim it, a new entrant.

If you translate that to the startup world, in Europe the returns are not there, so some think they should focus on where the returns are, which is the US and China. Meanwhile, because they don't invest here, others are entering the market with simpler products. For instance, I have a small firm that does some series A deals in Paris. It doesn't look like much, but there's an experience curve and some of your companies will grow anyway. The returns won't be that high but at some point, disruption will move forward. You'll be brought to diversifying on the next segment, etc.

VC firms that are only doing deals in Europe at the moment could end up being global players 10 years from now. They might use Europe to warm up, succeeding in a much more difficult context and learn new tricks. They will get used to a cost to profit structure that's less favorable, which makes them more effective in the long term.

Roots of the lack of startups acquisitions in Europe

I was talking a few months ago with Antoine Martin, who's the founder of Zenly, which was acquired by Snap, Inc. in 2017. We were wondering if there had been any other acquisitions like this one, since then.

I think not much has happened yet. The situation is actually getting worse, because it's getting tougher for American companies to acquire star-

tups in Europe or in France because of sovereignty issues. In France, I'm not sure it would be that easy for a company like Facebook or Google to acquire startups nowadays.

Therefore, we have less acquisitions from the US, probably no acquisitions from China, because the security sovereignty issues are even bigger. Traditional corporates are acquiring less startups, because they've basically failed their previous acquisitions. I talked to someone whose startup was acquired by a big company. According to him there were two phases. In the first phase, they are told that they are very important and will be provided with everything they need. The second phase is when financial analysts and the board start questioning the profitability of the startup and its actual importance in the financial results of the corporation. It usually is a big investment for a small income, and probably zero profit. Then, the startups are told that they will not get any more resources.

That is where large corporations are right now. They used to buy startups, now they don't anymore because the results are not there, and financial analysts are starting to ask tough questions especially when it is a public company.

So, my theory is the new ecosystem will be come from private equity. They will learn to buy out tech companies earlier and earlier, with the proper frameworks to do analysis. All the money flows into private equity currently, and they need to find somewhere to invest it in.

This year, I want to spend more time with private equity people and try to teach them the idea of buying out late stage companies. And once they start buying out late stage, they will realize they need to be there earlier.

Current state and challenges of Market Fragmentation in Europe

The short pitch is that you need an integrated market on all three sides of the company. Those three sides are Capital, Talent and Customers. For a long time, Europe was fragmented on all sides. If you were a French startup you could only raise from French VCs, use French engineers and sell to French customers.

Now you can raise money from European VCs—so it is getting integrated on the capital side.

Some companies are managing the talent, more or less, but it's hard. If you have been in France for too long, you will have a hard time hiring non-French people and retaining them. There's a kind of point of no-return. Still, there are some progress and I think the new approach to distributed work, the fact that you can have a company with teams all around the place, minus the problems with stock options, it is good.

For stock options, the tax regime will depend on where the employees are located in. If you try to attract talent from all over the place, those people will have different regimes when it comes to options and so you can't send the right incentives.

As for customers, I think it's the toughest part. If you are a French startup, either on consumer markets or enterprise, it's close to impossible to expand into Germany, Italy, Spain, the UK... it's impossible for the time being. I hope we'll manage at some point. For instance, we have a few startups that we've encouraged to open an office in the UK. They played it the right way, hiring locally as I explained before. But they all failed, because if you have a French product with a French mentality, the market is too different.

You have to acknowledge the fact that customers are different from one country to another, and design a playbook accordingly. It's not any easier for US companies, it is just that they have more money, also because they have their own domestic market that allow them to get to a certain scale beyond expanding internationally.

The answer is probably financial. You need to convince European investors that they should invest more at the beginning, to make it possible to scale up as fast as possible beyond the borders of your domestic market. Startups from small European countries like Denmark or Netherlands know that. And they raise money accordingly. They have a playbook. Here we have the curse of a mid-sized country. It's enough to launch your business, but not enough to scale up. And so, too many startups are trapped within their domestic market.



I think governments could design aid so as to encourage startups to go out, as early as possible. Today if you want support from the government, you need to be here to spend time [in Paris] with the ministers and journalists.

Could new environmental policies be used for innovation?

You usually need a war to go forward in innovation. It can be a real or figurative one, like against cancer for instance. But climate change, I think still seems too far from the everyday life of people, so they are not afraid of it. There's too much of a gap. We are saying that the planet is going to be destroyed and every morning we wake up and, and it's still here so people have gone numb. And you can't wage a war, if people are numb. I'm not sure Europe has the capability to declare war because it will not resonate culturally.

I think, on the other hand, that they have the capacity to create a leveled playing field on certain sectors for instance in FinTech with direct payment. It was extremely effective because it actually made it possible for FinTech startups to be on much larger markets without encountering too many barriers. But we still have work to do. You can do that with payments because no one cares about banks. But when it comes to your doctors, your taxi driver, that's where we could have very successful startups, had we had a leveled playing field. Politically, it's very hard for you to impose that field in such industries.



Alexa Dembek, DuPont

Chief Technology
& Sustainability Officer

How to successfully innovate in a fast-changing ecosystem?

Founded in 1802, DuPont has overcome many challenges while growing in the area of Chemicals. Following the fast evolutions of the industry, it has put in place strategies to keep creating value. In this interview, we expose their view on innovation, partnerships, and both in Europe and the United States.

Context: Constantly creating value and sustaining co-innovation is a key part of Dupont's strategy

With 217 years of history, DuPont went through many evolutions and transitions, where both Innovation and Science based innovation were key drivers of both growth and value creation.

Starting with the development of chemicals, then new materials and entering the household with key brands, DuPont leveraged its capabilities throughout its development. Even though these various transitions were significant challenges, it still continues to make transitions, as its model relies on constantly changing its capabilities, and therefore constantly delivering new ways to create value.

Today as the speed of the world is changing dramatically, companies like DuPont, if they want to survive for the next hundred years must change the speed at which they work and further open to co-innovation, enabling the sharing of capabilities and creation of synergies.





Three strategy drivers for innovative solutions

a. Making better choices of where we invest

Where to invest is one of the most important factors in determining success: it requires to spend a significant amount of time thinking about where to invest, asking what could be the right investment choices in terms of innovation, growth, and value generated for customers.

Innovation investments will drive return on investment, but will also generate new solutions and potentially a competitive advantage for the company. Thus, one of the key questions when deciding on where to invest is: “what are the valuable and important problems I want to work on?”.

b. Innovation is not one size fits all

Even though, incremental innovation takes place in markets that are familiar to a company – where it is easier and rewarding – it does not deliver the required growth level. Entering new and bigger markets where needs are changing is necessary to generate growth opportunities.

Still, companies like DuPont do not always have the necessary capabilities to enter those new markets; this is why it requires change in its ways of working.

c. Enabling the future capabilities that are needed

There are two different approaches: we can build capabilities in house with high investments or we can approach other partners – other big companies, universities or the startup ecosystem – and co-innovate. Depending on the topic, the choice will be different.

The Lego Metaphor: sticking to a vision, finding capabilities and building together

Co-innovation should not be seen as an independent approach, but rather as a tool being tied-up to what we are trying to accomplish: similarly, to building a Lego town. If we want to build a Lego town: first we think of what town we want to build (the vision), then we look at the Legos we own (internal capabilities) and then, we need to go out and buy or borrow, some specific Lego pieces. But the key element is that “I know what I want to build, the Legos I need to assemble: along with the Legos I own and the ones I have to look for”.

This Lego town approach is valuable not just at a company’s level but also at the ecosystem level – gathering all key stakeholders. In the context of a European innovation ecosystem, the key question is “How can we collectively, in the European economy, set the tone to improve capabilities



sharing and exchange to solve big problems? Who's got them and how could it come together? And what are we building? How do we create this?"

Having a common vision and culture is a necessary condition to co-innovate successfully – the example of sustainability

Common understanding of who shares what

One of the key success factors for partnerships is to align on "who brings what" (it can be a market access, material or a specific knowledge) and the value sharing. Each partnership is similar to a co-investment in terms resources, money, intellectual property, investment basically.

Sharing common values and language

Before working in a partnership with another company – we can observe their corporate sustainability reports, and if they have common goals going beyond product sales or the product function, etc.

Using the same vocabulary, is not always a given. For instance, in the case of sustainability issues, in Europe we would discuss about carbon or water use reduction, etc. – which will not be the same in all countries. Not sharing the same vocabulary leads to misunderstanding, representing significant difficulties in a partnership.

Building trust to work successfully with startups

Partnering with another big company is not the biggest challenge. The biggest challenge is probably to partner with venture, startups or universities because interests are not always fully aligned.

For instance, when businesses are focused on creating value, universities' primary focus is to get funding and do research. In the same way, it can be challenging to partner with a startup. Startups are highly passionate – they make a lot of sacrifices and are determined to make a difference on a marketplace. These traits sometimes go along with a difficulty to give up the full control over certain decisions. With this in mind, partnerships are about building trust to create synergies and opportunities and as long as

the roles are clarified from the beginning, even before settling a partnership, these collaborations tend to flourish. Indeed, Startups can truly benefit from working with big groups because scaling up is usually expensive and larger companies can share their marketing and sales organizations, providing them stronger market access as well as specific material and infrastructure.

How could the AmCham help by bringing key partners together, to work on specific problems

The American Chamber could participate in solving the partnership problem – by clarifying what are the different available capabilities and driving the work of different entities. For instance, helping talented people in Europe from universities, startups, companies, governments, figure out what they should work on – as Sustainable Development for instance.

Europe's key asset for innovation – its sustainability knowledge and expertise

Europe appears to be very much advanced in terms of sustainability. For instance, it owns numerous research centers, in Germany, Switzerland, France, Sweden, or others that produce large volume of research, on subjects as single use plastics, microplastic and fibers.

These subjects are a strength to consider when it comes to building business relations between the US, France and Europe more globally.





Philippe Englebert, Advisor to the Secretary of State for the Digital Transition and communications

Business, Technology and Recovery

One innovation, three ways out

For every startup, there are three possible exit routes, besides failure: exit via IPO (Initial Public Offering), buyout by a large group and buyout by a private equity fund. At the global level, IPO exits remain a minority exit route, representing only a few % worldwide. Most exits consist in buyouts by a large multinational companies and buyouts by private equity funds.

If we look at these three types of buyouts, we see that there are very few buyouts by multinational companies in France. These companies tend not to buy startups, in particular for cultural reasons. Startups are considered too expensive, especially if they are not already profitable.

This problem also prevails in terms of startup integration, as large companies in France either think that they will "break" the startup if they integrate it or that the startup is useless if it is not integrated.

Finally, there is an issue linked to the structure of the French economy. In the United States, tech corporations are the main startup buyers. It is less intuitive for non-tech groups, like most French groups, to buy out startups.

Changing the European mentality?

Of course, the culture of European leaders, regarding innovation and the role of startups, must evolve. This is underway, as evidenced by the increase in buyouts. However, with regards

to exits by acquisition, it is also a matter sedimentation. Today, we are seeing the emergence of startups that will themselves turn into future buyers. Today's gold nuggets will be tomorrow's acquirers.

A three-step recovery plan

With regards to startups' support throughout the crisis, the Recovery Plan consists of three sub-plans. The first plan, of 4 billion euros and released in March 2020, contains emergency measures to protect companies and help them endure the crisis. This consisted of cash loans and tax credit repayments to help startups survive the lockdown. We have also launched a specific system (French Tech Bridge) of convertible bonds acting as a bridge. This tool that was later adopted by the British and German governments in particular.

Second, a 1-billion-euro plan essentially composed of equity support schemes, aims to not lose a generation of entrepreneurs and to create the conditions to launch startups despite the crisis, which is no longer sanitary, but economic.

Finally, the third plan is the Recovery Plan as such, which aims to shape 2030 France, with a greener, more digital and more competitive economy. As far as startups are concerned, the aim is to extend public support for the financing of startups, in particular on the basis of the recommendations developed in the Tibi report, i.e. to ensure their good financing from seed to IPO. Let us remember that the success of French Tech

today is notably due to the first future-oriented investment program, launched about ten years ago following the 2008 crisis. The Recovery Plan is part of the same dynamic.

Encouraging startups: “bottom up” vs. “top down” vision

We adopt two approaches to support startups. The first is top-down. It consists of choosing technologies for which we wish to provide specific support with a dedicated investment plan, for reasons of economic potential or sovereignty for example. This was notably the case in 2018 with artificial intelligence, and will be the case for other sectors such as cybersecurity or quantum technologies, whose plans are included in the recovery plan.

The second is bottom-up and consists of equally supporting all startups, without ex-ante technological choices, hoping that some will “take off”. For example, Facebook started out as a startup with a fairly simple technology, but gradually became a highly technological company thanks to its success and the investment opportunities it generated.

Investment forecasts from various players

During the confinement, we saw a fairly significant withdrawal of US venture capitalists. As Europe was not the core of their portfolio, they tended to refocus on their home country. Since then, are gradually coming back. In any case, our strength in France, compared to Germany for example, is that we are less dependent on foreign investors for venture capital because we have developed a real foundation of French investment funds capable of supporting our startups for longer and longer.

As for the French funds, they have refocused during the confinement on their current portfolio to the detriment of new projects. There have been far fewer fund raisings. Even if the figures have remained good, they were about already agreed-upon fundraising activities. Since the spring, fundraising has recovered, and we expect to do a little better in 2020 than in 2019, which is very good given the economic situation.

Foreign investment vs. sovereignty issues

On issues of sovereignty, we are of course attentive to foreign investments, but this mainly concerns buy-outs or shareholdings by strategic actors or companies, and less investments by financial actors such as funds.







Frederic Etiemble & Philippe Vlaeminck, Strategyzer

Strategyzer: a world leader in innovation tools and methodologies

Our mission is to help companies reinvent themselves by providing the tools and methodologies for innovation, including tools that enable leaders to make the right decisions at the right time. To increase their organization's resilience, we help leaders manage an innovation portfolio, and create an exploration culture that lives in harmony with the exploitation culture under the same roof.

Strategyzer has three main activities.

The design of innovation tools and methodologies. We have published 4 books so far enjoyed by over 2 million people in over 40 languages: Business Model Generation (2010), Value Proposition Design (2014), Testing Business Ideas (2019), The Invincible Company (2020).

The development of a digital platform providing access to our training courses (e-learning) and enabling collaborative work by innovation teams and entrepreneurs. This lets them design and test their new business ideas directly on the Strategyzer platform.

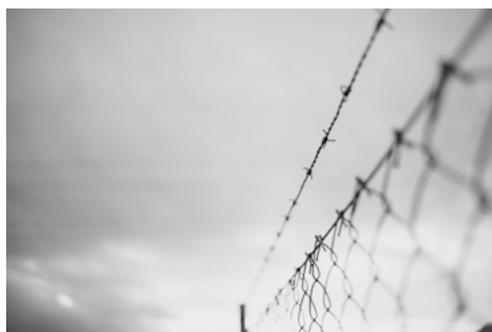
Consulting and coaching on how to evaluate and/or strengthen an innovation ecosystem: culture, processes, programmes, etc.

Why write *The Invincible Company*?

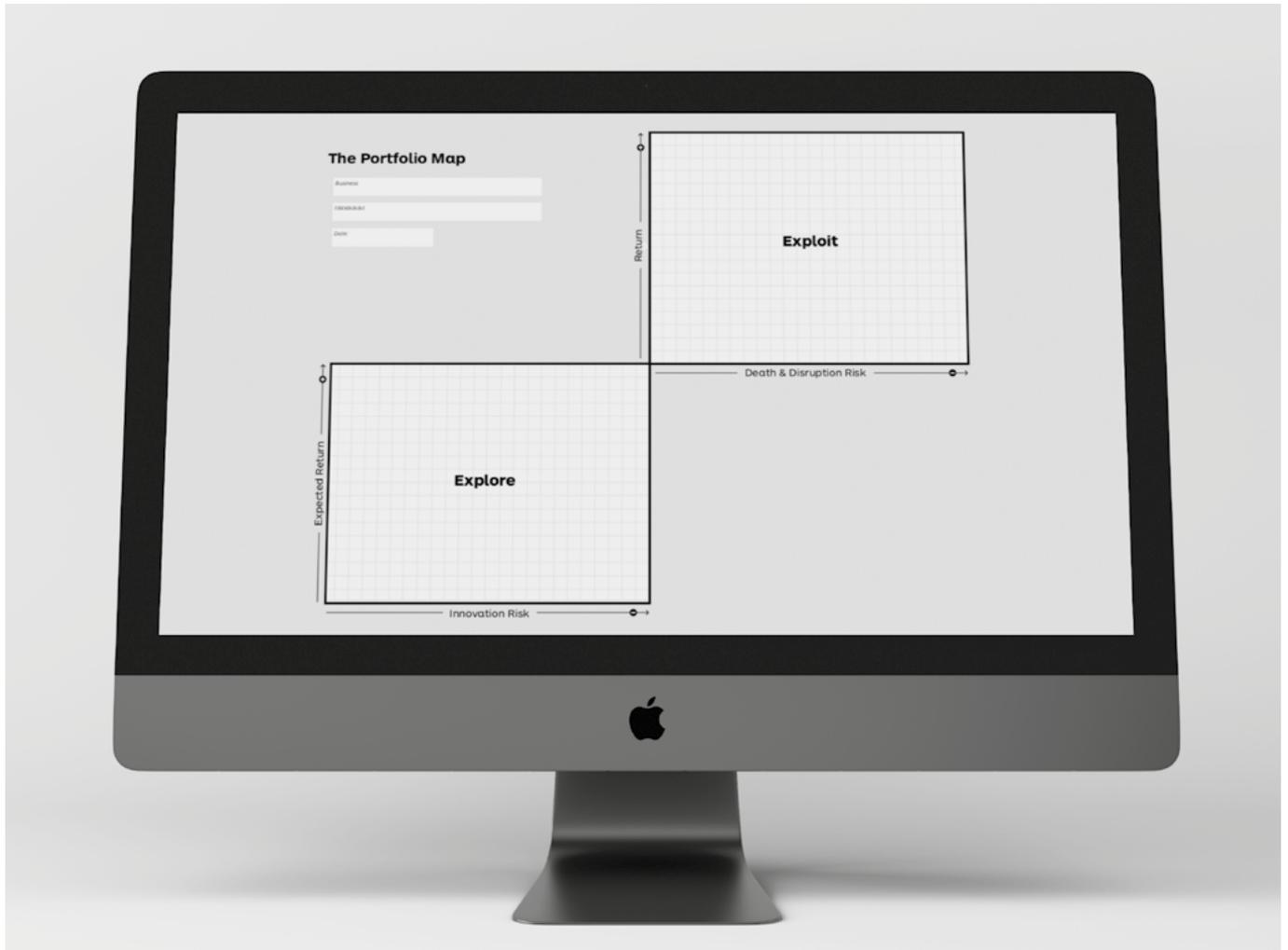
Over the past fifteen years, three people have contributed to the revolution in entrepreneurship and innovation practices.

Steve Blank, the American entrepreneur, author of *The four Steps to the Epiphany* book (2005), and founding father of the Lean Startup movement. His student Eric Ries, author of *The Lean Startup* book (2011). And finally, Alex Osterwalder, the Swiss inventor with Yves Pigneur of the Business Model Canvas, the missing business tool to visualize and implement the innovation processes proposed by the other two.

Today, the Business Model Canvas and other Strategyzer tools such as the Value Proposition Canvas are used all over the world, by startups as well as innovation departments of Global 500 companies. And yet, despite the spread of these methodologies, innovation in large companies is rapidly hitting a glass ceiling, that of the Leadership team and the Board of Directors. At this level, innovation still appears to be a black box, because leaders and directors do not have the right models in mind and the necessary tools at their disposal for managing innovation.



Our challenge over the last two years has been to create these models and tools for leaders. This is why we wrote *The Invincible Company*. In this book, we introduce two new tools:



a. The Portfolio Map, a tool to visualize and manage the collection of business models a company exploits (Exploit Map) and the new business models it explores to avoid disruption and ensure longevity (Explore Map).



b. The Culture Map, a tool to understand, design, test and manage the culture an organization wants to develop.



The objective is for companies to develop resilience and be able to cope with the disruption of one of their business models. We have been working on this issue long before the Covid-19 pandemic. And it is even more relevant today because a large number of companies have seen their main business model really impacted, and they urgently need to pivot to new ways of creating value for their customers.

What will most often block innovation in a company?

For innovation to thrive in an organization, you need new innovation tools, skills and processes for sure. This is what we call the innovation practice, but putting those in place is not enough. You also need to understand where the enablers and blockers are in an organizational culture that will impact the development of innovation.

We help companies with innovation readiness assessment by looking at those enablers and blockers in three main areas.

The first is leadership support. What resources are allocated to innovation by leaders? How much time do executives spend on innovation? Is there an explicit innovation guidance for innovation teams? Etc.

The second is organizational design. What is the legitimacy and power of innovation within the company? Where does it sit in the org chart? What's the system of incentives and rewards for innovation? Etc.

As already mentioned we also look into the innovation practice. Do innovation teams use the right tools and processes? Do they have the necessary skills? Etc.

For a company to create new products and services repeatedly, and not as an exception or accident, you need to create an innovation ecosystem. This ecosystem feeds on the elements already mentioned, but also on exchanges with the outside world, such as: contributions from experts, co-creation with suppliers, partnerships with startups, universities, etc. Not forgetting, of

course, frequent interactions with prospects and customers that must be mobilized very early in the innovation process (design and/or testing of new products and services).

Finally, what's the "recipe" to transform into an invincible company?

No company is invincible, but some companies are more resilient than others. Over the past 50 years, the average life span of companies in the S&P 500 has been cut in half. It is more critical than ever to help leaders increase resilience. To develop this resilience, three fundamental ideas must first be accepted and widely disseminated.

The first is that exploration is fundamentally different from exploitation.

Too often, we see companies carry out innovation projects as they manage "business as usual".

But exploration and exploitation are completely different.

In exploitation the focus is on managing the existing business model(s). The key words are efficiency and growth. The level of uncertainty is relatively low, because you already know the market, customers and products/services. Investors can expect steady returns and dividends. Planning and execution are possible. Failure is a sign of poor planning and/or execution and is therefore prohibited. Executives and managers know their business inside out and ensure execution on time and within budget.

Exploration on the other hand focuses on the creation of new business models. The key words are search and breakthrough. The level of uncertainty is high, and the investment logic is closer to the one in venture-capital, with a large portfolio of small investments. The process requires rapid iterative experimentation with frequent "failure" leading to learning and adaptation. The people involved are more like explorers who excel in an uncertain environment, and are capable of recognizing patterns and making sense of weak signals.

Resilient companies accept this difference between exploration and exploitation, and are able to develop a culture of exploration and a

culture of execution living in harmony under one roof.

The second key idea is to balance investments in different types of innovation.

People often don't understand each other when they talk about innovation. The main reason for this confusion is that there are different types of innovation. To be understood, it is fundamental to specify what type of innovation we are talking about.

The first type of innovation is aimed at improving operational efficiency. When Amazon automates the management of its warehouses with robots, it is very innovative, but it does not change Amazon's e-commerce business model. Nor does it create additional revenue. But it does make one of the key activities necessary to operate this business model a lot more efficient.

The second type of innovation is sustaining innovation (incremental, adjacent). The idea here is to add new value propositions to an existing business model. When Amazon adds e-books and e-readers (Kindle) to its e-commerce site, these new value propositions create additional revenues. But we're still very close to Amazon's core business.

The third type is transformative (disruptive) innovation. When Amazon reuses its IT and technology expertise to create Amazon Web Services, we are at the heart of transformative innovation. A new value proposition for a new customer segment that leads to the a new business model that exists alongside the e-commerce business model.

Most of our customers do not innovate like Amazon. They have an innovation portfolio that is massively geared towards efficiency innovation, with a low percentage of sustaining innovation projects, and a few rare transformative innovation projects. Yet, it is this type of innovation that produces the highest long-term value and creates protection from disruption. One of our goals with The Invincible Company is therefore to help companies rebalance their exploration portfolio towards more transformative innovation.

The third key idea is that more transformative innovation requires more volume.

In transformative innovation, the rules of the game are different from the other two types: transformative innovation is a volume game.

In venture capital, investors understand that it is impossible to predict in advance which startups will become tomorrow's successes. To maximize the chances of investing in future successes venture capitalists invest in a large number of projects, and accept to lose their investment in the vast majority of cases.

According to a study by Correlation Ventures on the return distribution of their funds between 2004 and 2013, only 1 investment out of 250 leads to a real success, with a return of more than 50x.

There is no rational and statistical reason to think that business leaders can beat the venture capital industry. The success rate that leaders can expect from transformative innovation will therefore be similar or even lower than that.

Too often, companies invest in one, two or three ideas. These big projects will receive significant funding and leadership support. It then becomes impossible to stop them or make them change course, even when all the signals point to a future financial debacle.

To develop resilience, an organization must be prepared to manage a portfolio with a large volume of ideas and projects and accept high "failure" rates. Leaders need to become comfortable with "killing" the vast majority of projects along the way. "Killing" a project is not natural for most executives in large companies who approach these types of decisions with the reflexes of the exploit world. But it is a necessary shift to allow the innovation portfolio to produce much better outcomes.

In conclusion, and to answer the central question of this book, three key ideas could enable European business leaders to unleash the transformative innovation potential of their organizations:

- a. Understand the difference in nature between exploration and exploitation, and switch to an exploration mindset,
- b. Understand the different types of innovation, and balance investments in these different types of innovation,
- c. Understand that, in order to achieve more transformative innovation, you need to bring more volume into your innovation portfolio.





Maily Ferrere, Bpifrance

Director of the Large Venture Investissement Department

Role of Bpifrance

The mission of Bpifrance is to support all kinds of companies, from the very young businesses to the large group. As the implementation part of the government, we have a mission of general interest which is to support the economy through supporting companies. We always act in collaboration with the financing and investment private ecosystem, in an advised manner.

Regarding financial banking, our activity often consists in counter-guaranteeing banks or to intervening in the financing alongside other banks. Generally speaking, we are there to provide leverage, to enable companies to increase their borrowing capacity.

For investments, it's the same idea, we're always co-investing with other private funds, we never do a round where we're alone and generally don't allow ourselves to finance more than half of the round. This ensures that our investment decisions are always entirely based on financial considerations.

Comparison between funding programs in France and in the United States

In the United States, there are government programs to help certain research areas. These areas are often very specific and sectorial. They are also linked to questions of national defense and to whether or not the State decides that there is a particular need. At Bpifrance, we sometimes have this approach, particularly in regard to R&D programs. For example, from the State budget, Bpifrance is managing projects with a mix of grants and repayable loans in the event of success for selected companies working

on Covid19 related issues. In this type of early stage programs, Bpifrance asks for collaborations between an academic laboratory, startups and a large company around a specific subject.

What is powerful in the United States is that they are able of pouring a lot of money over many years on a very precise subject matter. In France, we use either a general seeding logic, as it is the case with innovation aid for business creation, or dedicated help on a specific subject. In this case, we have several criteria of selection such as the quality of the technology, the size and perspective of the targeted market, the quality of management, its experience and ability to carry out projects of growth.

I do not believe that the United States or other European countries use similar dual approaches except in Germany with the KfW, similar to Bpifrance in some of its mission. In some other parts of Europe like in certain Scandinavian countries, we can find very structured ecosystems around innovation between large companies helping and supporting younger ones.

Direct and indirect investments in companies

As for investments, we invest in the companies both directly and indirectly, in a very coordinate way. Nevertheless, our main investment activity is the Fund of Fund one, larger than our direct capacity.

Many years ago, the French state developed mostly a systemic effort via an indirect approach (through Caisse des Dépôts and its subsidiaries by way of fund of funds activity).. After the financial crisis of 2008, the government wanted to implement a tool that would allow direct invest-

ments in a very quick and proactive way initially with a sovereigntist vision "; that would protect French companies from potential foreign "predation." This was one of the missions of the French Strategic Investment fund (FSI). This fund was also built to act much faster by investing directly, in a context of economic crisis.

Public funds vs. private funds

When we created Large Venture, the fund that I currently lead in Bpifrance, it was with the objective to finance late stage tech startups in their acceleration of growth. I am a former capital markets banker and at the time of the Lehman crisis, I had noticed that there were companies with a fairly risky profile listed on the stock market that had lost the ability to have long term investors who could help them develop over several years. In the scope of Large Venture, it was important to be able to invest in either private or already listed companies.



However, in France, historically, there is a strong split between private equity and the public equity without the link made by crossover funds between venture capital and capital markets. The main reason is that the LP's (fund subscribers) prefer to invest in very focus asset/fund dedicated. Another reason is based on the idea that venture is risky, and once on the market, the company has a completely different risk profile and become liquid, which isn't automatically true in the case of Tech or biotech companies looking for public money even though their risk profile is still high

Internationalization of funds

At Bpifrance, we have an approach where what we do directly and indirectly is always done in coordination. At the stage where I am interested in companies, they either have started going

international or it is one of their main development goals to do so. To conquer new markets, it is extremely important for these companies to be able to attract international funding. In this way, it is important for us to be able to attract the best international funds as co-investors, which is one of the ways of increasing France's attractiveness and attracting capital.



Bpifrance & the European Investment Bank

Europe has already launched a few years ago ways to finance directly tech companies via the European Investment Bank (EIB), with debt financing for relatively large amounts and long-term amortization. What is original with EIB loans is that they consist in large amounts for scale-ups that, at the time they subscribe to the loan, do not necessarily have the capacity to repay but reach it at the end of the term. The next step for the EIB might be direct investment in the capital of the companies. By doing so, the EIB would be moving closer to the approach implemented by Bpifrance.



Pierre Ferron, Schlumberger

TechCenter Software Métier Manager

Having worked with Schlumberger for more than 22 years, Pierre Ferron has a strong experience as an engineer and manager working on innovation. As part of this exchange, he gives us an overview of their internal innovation programs and their collaboration with other companies. In addition, he shares with us his perception of the differences between the French, American and Chinese innovation cultures.

Collaboration system between Schlumberger, universities, and schools

Traditionally, there are several areas and types of interactions with our partners.

If we take the example of schools, we collaborate rather on long-term themes. We are as much in contact with schools in the local ecosystem, such as the University of Montpellier, as at the national level with CentraleSupélec, etc. Since our core business is software and geoscience, we also work with schools more targeted in these areas. With some of these schools, we also carry out corporate projects. We have our own innovation subjects developed internally, and certain aspects of these subjects will be submitted to the schools. The students will work on these topics in supervised groups over 6 months and then submit the results to us. In those case, it's not just about innovation, there's also the recruitment aspect, of course.

Interest and method for working with startups

Within the framework of the Revitalization Plan for the territory, in Montpellier, whose objective is to create jobs locally, we have provided our support to local authorities to develop relevant initiatives, in the support of startups for instance. Our

involvement is relatively limited, in order to preserve the independence of the companies.

On the one hand this allows us to comply with the revitalization objectives. On the other hand, we strengthen the links with the local ecosystem. We could thus potentially identify a technology or a solution that could be adaptable to our solutions. We don't try to influence the startup towards what we need, but rather to see if what it develops can be used as is or with modifications for our issues.

There are indeed possible difficulties in working with startups, which we have to be aware of. They are quite fragile, so trying to divert the startup from its main objective to work for a big company can often prove to be fatal for the startup.

However, there are several examples of success. The entity for which I work for Schlumberger is the result of the takeover of a startup in Montpellier. We have a successful example of a 30-person-startup that has become one of the crown jewels of the oil and gas software market.

Startup acquisition strategy

A large majority of our software innovation at Schlumberger has been through acquisitions. There is often an aspect of complementarity in the sense that we will identify a startup that is already well formed with 20–30 people, established customers and some profitability. What it brings is its solution and its talents. What we can bring is the international footprint and the sales network.

Indeed, the scale-up for the startup is going to be very fast. In our case, we went directly from a

startup that employed 30 people to a company that had more than 150.

Role of large companies in scaling up startups

A company's ability to help a startup to scale depends on the structure and culture of the company. Schlumberger has a very open and international culture and is therefore flexible by nature. We have acquired numerous startups, one of them coming a unicorn, others being more in focused but still very profitable markets.

It is this flexibility that a company needs in order to work with startups. Some large groups are therefore having difficulties. That said, we also see other companies in our sector, like Total, which are very successful in supporting startups.

Ecosystem of cooperation between large groups

We are lucky to have a few large companies around us in Montpellier. We are on a campus with IBM, with whom we are starting some initiatives. The relationship between Schlumberger and IBM is unambiguous because we could naturally be their customer. There is no notion of competition. We have also relied on another local organization: Digital113, which connects the main players in the digital field in the Occitanie region. This is what allows us to share knowledge and best practices on innovation. This opens the whole panorama of innovation through the ecosystem externally. We likewise have an innovation center in California, with strong long-term relationships with Google and Microsoft, to name a few.

Bringing internal innovation to life: Innovation Program

First, we have our own in-house (partly incremental) innovation system for product improvement. We have a small on-site Research and Development group that allows us to explore new solutions for our products. Then, we also have an in-house program dedicated to innovation for the whole center. It was decided three years ago to build this program internally over one week every quarter. Engineers can self-organize by blocking this week to define the project they want to work on with the tools they need.

The only constraint is that they have to present their project in a 3- to 5-minute pitch at the end of the five working days. We also have a platform on which all employees can vote for the projects they like. People registered on this platform have the possibility to buy shares on projects with virtual money (inCoins).

During these innovation weeks, we will also have some small teams working on things related to sustainability or CSR. They can then intervene in schools to promote scientific careers, for example. Some teams will use these weeks to improve their skills and work on a technology they haven't had the opportunity to learn about and improve their knowledge.

This program is a motivational tool for the teams, and it is also a very flexible mechanism to be able to collaborate with entities both internally and externally. We have fantastic brains with fabulous ideas. This aspect of flexibility ensures that we never dismiss the ideas that emerge. It's up to the idea leader to develop it and then create a team.

In the first year, we had a high participation rate of 50 to 60%, which dropped to 25% last year. Engineers have to juggle with project priorities and the innovation week which mobilizes teams. You must also be able to work with people in the business lines to show the value the projects provide.



Managing innovation internally

Depending on the teams, the initiatives will be integrated in the medium term, often a year and a half later. There is often the possibility of using an element that will have been de-risked. The challenge to making the program a great success is to develop new, innovative and disruptive

solutions. To do this, you need to work jointly with the marketing teams and give them the ability to make the teams dream and lead them to relevant business ideas to develop. I now try to work in a broader dimension than the center, by involving the employees on the Business Units side. This allows me to achieve something well formulated. It is still under study, and it is at this level that the sustainability of this initiative will be decided.

Comparison of French, American and Chinese innovation cultures

France's great strength is that everyone has ideas. There is a flowering of disruptive, critical ideas, contrasting with the Chinese culture for example, which favors a priori more cohesion and group culture. But France's hindrance in relation to China is the fact that we have to successfully work together in the long term. China has the capacity to advance excessively quickly once consensus is established. In France, we sometimes tend to make things unnecessarily complex.

In China, there are more imperfect things to be satisfied with, unlike the French culture of perfection. The latter makes it difficult to present a product that is not of sufficient completeness. As a result, we are going to have difficulty convincing the teams by telling them: "it's very imperfect what you've done, but it's enough to grab the market". The teams will sometimes be reluctant, with additional fear. This is quite astonishing, given the French social system and the ability to get help for startups, with the "safety net" that is there to catch us. I think we have a certain amount of risk adversity in France.

The differences in leadership are also clear. In China, leadership is based on the acceptance of a leader designated for his skills and allowing harmony. It will create a natural group effect. I think France has a more individualistic and critical model.

As for the United States, the culture of leadership is naturally inculcated through education. It is very important for children in activities to be the leader. This is how "natural leaders" will emerge and let their energy and passion express itself. Even without an important role, they will express this leadership. In French culture, we are more egalitarian.

There are also other cultural habits such as the Scandinavian model. They are going to be relatively innovative and more based on autonomy and independence, not taking much into account authority. We are going to find a more pragmatic innovation system focused on specific themes.

Origin of scale-up difficulties in France

I think that we have in France a very abundant innovation environment, rich and supported by a valuable education and an excellent research environment. But it's difficult to scale for startups, because it's less in the French culture to take that risk. We're going to have difficulty finding a "scale up" strategy through investment. And, on the other hand, large groups that have their own research centers, their own methods, will find it difficult to accept what has been invented elsewhere.



David Hoyle, Schlumberger

Novatek Ambassador
and Acting Center Manager

In 2016, Schlumberger acquired Novatek, a company specialized in synthetic diamond technology. This experience highlights the possibilities and challenges created by collaborations between different types of actors in the innovation ecosystem.

Financing Novatek within Schlumberger

We are an internal startup, so I have to touch a little bit on financing. We are currently financed by Schlumberger and have internal R&D money. When Schlumberger purchased NovaTek it was agreed that it would provide a certain level of funding for 5 years. But we are coming to the end of these five years and because of the difficult oilfield climate that we've been going through, we are trying to figure out how Schlumberger will continue to finance the NovaTek. It represents a real challenge.

Lifecycle Management Process VS Innovative Group: how to make two models work together

Right now, Schlumberger is much more focused on digital innovation, rather than hardware innovation and research. My group is supposed to work on what engineering groups and the research groups used to focus on. We don't do fundamental research, but we do innovation. And there is always a cultural mismatch between an innovative group that is trying to move very fast, and an engineering group.

The idea is that an innovative group is trying to demonstrate value early. In the software world, this is the Agile model. You're trying to get minimum viable products out in front of customers as early as possible, whatever the product is, with enough features to see if the customer is inte-

rested and excited. That's our model at NovaTek. In Schlumberger, engineering follows the lifecycle management processes, the LMS. That process is primarily focused on retiring the risk, on building reliability into a tool or a product as early as possible.

These are two slightly conflicted models: One that wants to get a product out and just see if it brings value and if customers are interested, and the other that is more cautious and more interested in retiring risks before the product goes out. In the case of NovaTek it represents a fundamental cultural challenge.

Indeed, I'd like to have the opportunity to optimize that in Schlumberger. We just want to dial one model up a little bit and dial the other one down a little bit. It doesn't have to be black and white, but a little bit less risk averse, and a little bit more sensitive to the needs of the market.

Traditionally, when Schlumberger developed logging and drilling tools they would have to work anywhere in the world. But in order to do that, you can well imagine there is an emphasis on reliability, quality, supply chain, and scalability. All of that is very important. But another approach would be to develop a technology that's more specifically fit for or adapted to a given area. And ideally develop it faster and test it faster in that specific basin. Once it's taken off from that base, we will perhaps begin to adapt it as necessary for other basins or for the rest of the world. I would say this is something we haven't really started to do. And one of the future prospects for NovaTek, would be to serve the North America land basin and try this rapid engineering more focused on that specific area.

De-risking disruption in a market

Right now at Schlumberger, everyone up to the CEO talks about one specific project. It is called NeoSteer and it's a new steerable drilling technology. It has just been commercialized and it's the latest and greatest. The questions my group is working on is the following: how much appetite is there to start scaling up? In other words, are our client interested, to see us do something even better? The issue is that we may disrupt a market that we just succeeded on. So, how do we continue to move quickly while reducing risk?

In our group we typically don't industrialize the product. We would build a prototype, and it would be up to another Schlumberger center to do the industrialization. We've been doing formal design reviews with the centers in the UK, and Houston, who have the expertise to industrialize this kind of product. And we're trying to take their expertise as much and early as we can and use them to help us derisk what we're doing. But of course, while not slow things down.

The innovation culture and its relation to process

One thing I see, is that Schlumberger thinks of ourselves as an Innovation Center, a concept incubator. When I came to NovaTek, and before Schlumberger purchased NovaTek, there were people who said: "Look at this company, it's moving so fast, they do things so quickly. If we buy it, it will be better than all of the Schlumberger engineering and manufacturing". That is a big mistake. If you try to use the internal startup to develop full and complete product quickly, you will run into the problems of reliability, availability and a lack of supply chain, because you haven't followed that kind of process.

NovaTek was initially independent, and when purchased it became my job to do a light touch integration. What I've tried to do is bring all of the benefits of being part of Schlumberger while minimizing the risk of being in Schlumberger. We have community practice, online databases with documentation of all of the products and tools, we have central technology groups with expertise or material in electronics, etc. It's been very interesting to give a dozen engineers in NovaTek full access to all of that but not applying the bur-

den of the lifecycle management process. It has been interesting and challenging.

David Hall, the founder of NovaTek, has created the innovation culture organically over many years. It's hard to encapsulate it but one of the key elements of the process is called a "No excuses culture". Any potential impediment to go quickly has been removed. Engineers are not worried about budget. They have access to an internal machine shop, so they could go and give a drawing to a machinist in the same building and have someone make their art. They have a real credit card that they can use by anything they want to try to make a project go faster. They have onsite facilities. Typically, we have an idea and you turn it into a concept.

How and why to "Fail fast, fail cheap"

Failure is a good thing, it is a learning experience. We call our process "Fail fast, fail cheap". You might say iterate fast, iterate cheap. In Novatek, when we have an idea we build a prototype and we then iterate very quickly. The idea is that we are looking at value and risk together. No matter how many times this idea isn't going to work, we could kill it very quickly or turn it around. If it doesn't work for this purpose, it might work for this other purpose. We are able to do that very quickly because we haven't created a project in a system, we haven't named a project manager, we haven't allocated a specific budget. Things just happen quickly. We typically do quarterly reviews with management. I'm sure the managers enjoy visiting because every time they come, they see something new and different. Because this is on a quarterly basis, not on a yearly basis. That kind of rapid progress is really at the heart of what we do.





Xavier Lazarus, Elaia

Partner and Cofounder

The French system, a high-risk tax system for investors

With 30% flat tax on exits, French system is neither good nor bad in terms of taxation. Indeed, in France we have chosen a social system that is not free for those who finance it and that is free or cheap for those who benefit from it. To completely abolish taxes would therefore not make sense. On the other hand, when taxes are punitive, that is to say when they exceed 30% on capital gains, it's too much.

However, the real challenge today is the risk one bears when one invests a part of one's own capital. As an individual, if I put 100,000 euros in a company or group of companies, money that I have earned and paid taxes on, I take the risk of losing it all. Yet, in many countries, such as the United States, there is a way to deduct these losses from taxable income: if I earn 100,000 euros on which I have paid taxes and then lose it, then, the next 100,000 euros that I earn, as compensation, I will deduct my losses and not pay taxes on it. This principle should be generalized in order to say that the tax advantage does not help me invest but rather reduces my losses by compensating partly them with a decrease on future taxes.

Tax harmonization is also needed for employment and stock options. It is necessary that the employees based in Paris of a European company can have stock options from this given company with a favorable tax treatment. The same should apply to French companies with employees in other European countries. Startups should be able to have a European passport so that all employees can benefit from stock option laws that are advantageous regardless of the parent

company and/or country. It would be good to extend this principle to OECD countries in order to create a shared culture of stock options and to avoid that the law of the strongest, where each country has its own vision of how to tax stock options, prevails as it does currently.

Investment funds and skills: major assets of the United States

The investment funds that invest on the European stock exchange are traditional funds where one finds very little expertise and very little understanding of tech. This leads to a much lower liquidity than in the United States and the valuations that are offered are consequently much lower. Therefore, there is no interest of tech companies to go public in Europe because there is tens of times more money and expertise in Wall Street than in Paris or London. This is due to both a problem of investor culture but also to the social costs that is enforced on companies, which prevents capital cities such as Paris to match Wall Street salaries and bonuses. We need to find a suitable impatriation regime, so that people understand that paying for talent will bring money back to the society in the mid/long term. Expatriates have learnt a lot from abroad and have often developed skills and expertise that their country needs. It is necessary to bring them back by relaxing the tax pressure.

Investing in the long run: an ecosystem to be transformed

Half of the companies of the S&P500 did not exist twenty years ago. In France, many the CAC40 companies have been around for over a hundred years, either from family empires or with a long history of nationalizations and privatiza-

tions. They are therefore companies managed by hired managers and no longer by entrepreneurs who own them. This problem is the same all over Europe.

It is therefore necessary to create more entrepreneurial companies that become platforms for acquisition, to educate founders and investors and make sure that there is liquidity at all levels. The goal is not to get acquired and then disappear a few years later. It's to get people to understand that it is possible to have personal wealth while continuing to invest and develop your own company.

Likewise, companies must be buyable and conform to international standards, investors must be ready for this. There must be an entire ecosystem with available entrepreneurs, available funds, late stage funds who accept to buy early stage funds out, founders able to sell enough securities to be personally comfortable and at the same time keep their company. It's a whole ecosystem that needs to be transformed.

We need more of everything: not just money, but an entire ecosystem that needs to be changed: more ambitious entrepreneurs, more quality employees, more international, more people who speak many languages, more early stage investors, more late stage investors, more open-mindedness from each other and all in all, it is a general progress. This has already changed a lot in twenty years, but we must continue this collective effort.

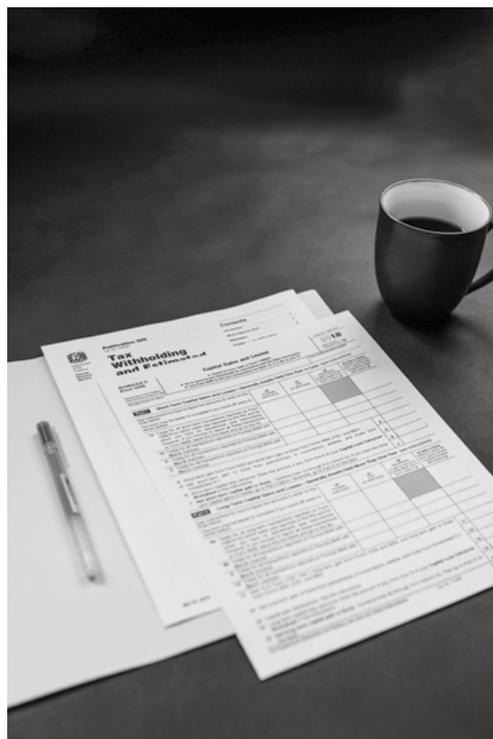
We need to move faster to create companies that in twenty years will be worth billions and that are capable of making acquisitions in hundreds of millions on a regular basis in Europe and beyond. We don't have enough of them, and this is due to the lack of financial markets, but also to the whole spectrum that needs to be aligned: from the ambition of entrepreneurs, to the companies that need to be purchasable to international standards, not without forgetting the financiers who need to be willing and patient.

Imagine high quality managers in continental Europe and super entrepreneurs opening businesses in Eastern Europe with a small local market so they are wondering where to locate their business, they will compare the best options

such as France or the United States. If the cost of setting up in Paris is the same as in the United States, whereas in Paris no one speaks English, and the conditions to go abroad are not present, they will prefer to set themselves up in the United States. Everyone can only agree! On the contrary, if they realize that in Paris, within the Eurozone, where there is no need for a visa (which is a considerable advantage in a world where borders are closing), with sufficient funds available to fuel an aggressive growth and the conditions for impatriation are welcoming, then, it becomes a very interesting option for them to look into and invest in.

The startup visa: a solution to overcome the lack of harmonization at the European level

One of the important topics is that mobility in Europe is quite difficult. And this is because of languages, career paths, work laws that are not harmonized across the union. Europe will move forward if it harmonizes a little more, in terms of education, for example, where there is now a similar system across all European countries with the License/Bachelor, Master, and PhD system.



In the United States, the system is much more harmonized, there is no radical difference from one state to another. The parameters may be different but the formula remains the same. In

other words, there are local specificities within a unified system. Anything that goes towards harmonization will promote the movement of people, which will make the single market possible.

The startup visa is a solution that could avoid the differences in legislation when you are an employee or a company. This visa would allow you to derogate from certain local tax laws. It could be issued by structures such as Bpifrance on the basis of criteria defined by the concerned States that have signed a convention relating to these contracts. In other words, the aim is not to change the taxation of states but to create visas that transgress national specificities.





Eric Leandri, Altrnativ

Founder and CEO

Addressing the European market

It is true that Europe is not a single market but several fragmented markets. However, if we look at Europe a little differently, we have a market that is very easy to address for France, Germany, Italy, Spain and Belgium, which together account for more than half of the population of the United States. Moreover, these territories are very close and have been working together for a long time. Europe is therefore complex to approach in its entirety, but if you take just a few countries, you can address a European market in just a few moments.

The notion of platform in Europe

In Europe, we notice a lack of understanding of what a platform is: we have some like Le Bon Coin, but we don't know exactly what it is. The platform logic is not used because companies want to offer targeted services. Yet Big GAFAM work so well because they bundled multiple services together. If there is a logic, it's this ability to add other services to a place where people are already coming together for a service. Europeans have a total aversion to this type of process because they feel it's not focused enough.

On the other hand, European regulators cannot afford to have platforms that monopolize the market, hence the complexity of the dialogue between large and small platforms. We therefore need strong regulation on the American side that allows others to grow. Logic wants that Europeans can continue to produce services and goods that are in competition with giants.

Finally, we need serious people who can manage the platform as it takes off. In the United States,

they trust the tech people who are supported with investments and financial power.

The notion of risk

Europe has enormous capacities, good scientific capabilities and investment capacities but it refuses to take risks. If a European invests in a company, he or she prefers to resell it than try an IPO exit, unlike an American. If we take the example of Snapchat, they refused billions from Facebook to do an IPO. Which European company would have done that?

We also need a lot more trust among entrepreneurs, and long-term trust. Having investors who continue to support entrepreneurs is something that exists in the United States and that must exist in Europe.

Finally, today, in the U.S., falling doesn't bring down the whole company, because the value of the company resides in its team including its engineers. The company can therefore quickly be bought out by a company in the same sector, and investors will continue to grow from company to company by recovering all their assets that are already pooled. In Europe, if the business collapses, everything is scattered and has to be rebuilt.



Christophe Lienard, Group Bouygues

Innovation Director

Innovating at Bouygues

There is a great diversity of professions at Bouygues. Indeed, we have five branches, three of which are in construction and two in media and telecoms. For each branch, there is an R&D branch and an innovation branch.

We also have two monitoring offices that are constantly updated on sectors of interest to Bouygues. One is in Asia to observe how economies are recovering and to get a glimpse of what can be expected tomorrow in a context of European recovery; the other is in the United States.

We have also established links with several universities such as the Massachusetts Institute of Technology (MIT), which allows for strong contact with the R&D and innovation ecosystems.

We are also present in think-tanks that are often co-created, such as Futura mobility, a think-tank on mobility involving the SNCF, Aéroports de Paris, Alstom, Safran, Airliguide and Keolis. Thanks to this think-tank, we have been able to produce white papers with our proposals and focus on the future of mobility, as well as imagine scenarios for the future of companies.

In 2019, we have also designed a project on the integration of mobility and buildings, having realized that one cannot go without the other: in fact, the carbon footprint of mobility represents 27% of our total carbon footprint, and that of our homes and offices accounts for 27%. The two added together therefore account for more than half of our total carbon footprint. The aim is therefore to build the schemes of the future on the integration of mobility and building, which



we are working on in collaboration with Renaud, Michelin, Saint-Gobain and Enedis.

We have also set up five investment funds, corresponding to the five business lines at Bouygues, which invest in startups to help them get off the ground.

We designed a program called "Innovating as a startup", through which we trained 450 people in entrepreneurship.

Finally, we are experimenting with an Economic Interest Grouping (EIG) in which we come to incubate projects by protecting them from the adversity of a large group. To do this, we put forward a project by a jury made up of members of the Action tank group, then this project is incubated for six months in the maturing phase before going back to the jury.

Collaborating between leaders of large groups and sharing the value of innovation

As far as collaboration is concerned, we are gradually opening up to other large companies. This has been the case, for example, with the smart cities project that we have implemented in Dijon in collaboration with Capgemini, Suez and EDF, which has been a success. This shows that a company cannot build the city of the future on its own. The ecosystem is a key notion.

Fostering ecosystems in Europe

An ecosystem begins with a small circle. This is the example of the Futura mobility project, a Safran initiative, where Safran alone invented a system for the professions of the future, before closing it down. This initiative was reopened during a meeting with Gérard Feldzer, (engineer and airline pilot, consultant and popularizer in aeronautics, transportation and the environment, editor's note), for whom mobility was an important issue. We started to build the project on a very intimate level with very regular meetings of seven-eight people every month for a year, the aim being to get to know each other well and establish a high level of trust without any direct stakes before tackling the more complex business issues. The goal of creating European links was therefore an indirect objective.

The Silicon Valley, a model of innovation to be reproduced in Europe / Comparison of eco-systems in the United States and Europe

If we compare France and the United States in terms of innovation, I would say that in the United States, the notion of risk-taking is more present: we invest in ten projects and maybe only two will come out. In France and Europe, there is less of a habit of "watering" several projects at the same time and a certain fear of failure.

Innovation at the service of economic recovery

Building a European eco-system should not be a goal in itself. I wouldn't get much attention in a group if I said that the goal is to develop an eco-system. On the other hand, if I say that the goal is to develop a system that will allow us to be leaders in the smart city, to go faster, to be better... it works! Disruptive innovation will be frowned upon for a long time to come, and pre-crisis rhetoric will have to evolve. "Operational", "concrete", "providing solutions in times of crisis" and "speed" are the new key words. To sum up, innovation must be at the service of economic recovery.

Innovation and the role of the State

I don't think we should wait for the State to give us a great cause. However, the State can help once the initiative is launched by promoting cases and places where it is easier to experiment.

Innovation, the fruit of chance?

Innovation is the fruit of a controlled chance.





Bruno Martinaud, Ecole polytechnique

Entrepreneurship
Academic Director Ecole
polytechnique, Co-Director
MSc X-HEC Entrepreneurs

Exploring before executing

We often see the same problem when it comes to entrepreneurs starting a project: there is a gap between where he thinks he is and where his project really is. This translates into the entrepreneur's startup pitch, which is often focused on the execution of the project when it should be focused on the exploration challenge. The reason behind this is the will, through a pitch, to persuade and convince his potential investor that he knows where he is going. However, the reality of an entrepreneur who launches out is that he doesn't know where he is going, and he has no real way of knowing since he is at the beginning of an exploratory adventure. But there is this rhetorical bias that is linked to the idea that you have to convince, and that to convince you have to reassure, and that to reassure you have to tell the listener that you know exactly where you are going and what you are going to do.

A pitch concretely consists of three things: the first is to confirm the opportunity by characterizing the problem that I am going to try to address, the second is to confirm that this problem is going to become a market and to characterize this market, that is to say to define who is going to buy among those who have the problem that I am addressing; finally, it is necessary to confirm my ability to execute by recruiting my first customers for example, by starting to develop the necessary technologies. It is through this step that I will begin to explore the fundamentals of the operating model and find out whether I will be able to buy the component and the materials, manufacture, distribute, market and maintain my product or my offer.

The challenge of the initial exploration is to identify and characterize these questions at the beginning by accepting that I don't know the right answers at the beginning but that I will know them as I go along: this is what I will try to convey in my initial pitch. 99% of the cases are wrong because there is this psychological bias towards execution instead of exploration. And one can find this again later when the entrepreneur leaves the exploration phase to start developing.

I call this phase the organizational emergence where the entrepreneur is going to set the fundamentals of his organization, see his management level emerge, set the culture of his organization, codify the meaning and optimize the exploitation. The entrepreneur who is in this phase often sees himself in the scale-up phase and the figures tend to prove him right because he is already in a trend of rapid growth and has already started to open a few international offices. But it's simply to learn at scale 1 what he's going to do at scale 10 during the scale-up phase. And one of the manifestations of this is that often the entrepreneur will look for experienced people when it's not the right time. You first need generalists who are able to find the right model, the right organization before calling on the specialist you will need when you are at the scale-up scale. The entrepreneur is always out of phase: while he has to explore, he sees himself executing, and while he is setting up his organization, he sees himself growing rapidly.



Experimenting like a scientist in his laboratory

The only methodology is to experiment and have hypotheses at the beginning while remembering that I don't know which one is the right one. One has to deal with its project and its different sets of hypotheses, it's a permanent trial and error process in which I'm going to organize myself progressively through methodologies. It is a learning process like the scientist in his laboratory. An experiment that doesn't work is a gateway to a new set of hypotheses.

I think that failure is not the right lens to look at the state of mind of the entrepreneur because failure is simply the result of a cycle of exploration that must include failures, and then go beyond it. Sometimes what seems to be a detail can have a big impact in terms of reaction and test results. At the time I'm testing I am not able to distinguish the relevant from the irrelevant, the variables that are the right ones, so I have to try to vary the tests as much as possible and consider that the result of a test, whether positive or negative, is only an event in the exploration process: what is not relevant right away may be relevant later. So, in the work of the entrepreneur there is also this work of memorizing material that I don't know what to do with today but that may be useful tomorrow.



The United States and China: models of entrepreneurial culture

The two countries that succeed greatly are the United States and China. Interestingly, these two countries have the same entrepreneurial culture with the ability to move forward quickly, to be fearless, to think big and to have that business pragmatism of saying that everyone is at the service of the project and that the project is at the service of its market. And this is a real differentiator because the entrepreneur who is at the service of his project and who is aware that his project is at the service of the market will be much more easily inclined to make things evolve and to question himself in his role. Often, one of the painful conclusions of these mutations between exploration, organizational emergence and scale-up is that the entrepreneur who was the good commando leader, the good leader in the first phase, has difficulty transforming himself into an entrepreneur because he has to learn to recruit, to delegate while he likes to experiment. The pragmatism found in the United States and in China makes it easier and quicker for the entrepreneur to negotiate and therefore question his role, which will allow him to move forward.

It is therefore necessary, from a very young age, to instill this intellectual flexibility which consists in understanding that the skills I acquired at 20 will probably be less useful to me at 25, and entirely less relevant at 30. This perspective can be difficult to acquire for someone who has succeeded academically. Our education system produces people who are academically very bright but who have difficulty integrating the fact that the world has changed. We need to have that intellectual flexibility, get out of our comfort zone, capture the unexpected. What characterizes the explorer is that he acts and then reflects, which is not the mental structure we are prepared for in our institutions.

In American institutions, there is this pragmatism of analyzing everything with reference to the reality on the ground, what works and what doesn't work. Very early on they learn to acquire this talent of being able to navigate in the dark when faced with problems that we do not understand. It is a skill that is vital for entrepreneurs because this is what they will do for 98% of their days. But it is also true in most companies where acquired positions are increasingly questioned. As smart individuals understand that they don't understand a problem, they will become healthier dealing with those problems.

These teaching challenges start from the early ages, to accept humility in the face of problems as a factor of intelligence and efficiency in the face of these same problems, and later consists in understanding that the leader of the 80's is no longer the leader of the 2020's who will tell you where the world is going and what one is going to do for the next ten years. It's someone who is going to draw his credibility from other things and who will be able to say: "I don't know exactly where we're going but I know how we're going to think about it and how we're going to progressively move forward". But it is a totally different form of leadership and it is a form of hierarchy that must be assimilated with intellectual postures that are cultivated from a very young age.



Jean-Luc Moullet, CNRS

Senior Executive Vice
President, in charge
of innovation

Collaboration: the key to innovation

A collaborative innovative initiative requires to get a group of people, coming from different backgrounds, to work together around a unifying project, with the aim of achieving better, or faster, results as a group, than they would on a stand-alone basis. A typical collaborative project can traditionally be defined as a collaboration between one or two large companies or mid-caps, a few startups or SMEs and a few research laboratories.

The French Research Tax Credit (CIR) works quite well to fund public innovation. It provides an individual grant, at a rather significant level, to companies investing in research. It is available to any company, does not require pitching in front of any selection committee, which would take a decision based upon various criteria. This financial public funding is quite welcome as it is necessary to direct corporate investments towards research. However, it may not a strong enough incentive to facilitate the set-up of collaborative projects when the aim is to create links within an innovation ecosystem.

Competitiveness clusters can help the creation of such collaborative projects within regional or sectorial ecosystems. To ease that process, the French Government has set up public funding programmes. These schemes work fairly well, but they remain quite limited in terms of number of beneficiary entities, as they operate under a selective logic.

The success of a collaborative project depends on many parameters. One of them relates to the way the underlying industry is structured: for instance, setting up collaborative projects in aero-

nautics, which is a very structured sector, is quite easy; it is also almost fine in the automotive or naval sectors, which are both well engaged into an efficient structuring process; it does not work that well in the digital domain, which does not respond to an industrial sector logic.



From my position at the CNRS, I realise that a research laboratory can be hindered in its willingness to collaborate with companies because of cultural differences, notably those linked to time management. The aim of an industrial company is to put a product on the market as quickly as possible. This ambition does not spontaneously meet the way scientific research, which pursues a general objective of developing knowledge; is conducted.

The strategic sector committees: a solution for creating links

One way to facilitate the creation of collaborative projects is to try to act at a sectorial level. It so happens that, for the past several years, public action has focused on structuring industrial sectors through sector strategic committees, which bring together companies, public authorities, employee representatives and now representatives of public research. These strategic sector committees (CSF) are forums for exchange, wherein priorities for the sector are defined and are built into a coherent national industrial strategy. By doing so, the CSFs make it possible to funnel public funding towards projects directly embracing these priorities.

The CNRS is involved in the discussions conducted all the CSFs level. This is a great way to present our vision of the scientific developments expected in the long term. This is also a great way to feed the scientific community with the long-term expectations coming from the market. By discussing at CSFs level, we can approach subjects from a less competitive angle. As these exchanges take place between companies involved in the same value chain, they are not focused on short-term competitive innovations. They rather tend to define long-term orientations, which benefit the industry at large. Within such a framework, it is easier for industry and academic representatives to define concrete proposals for collaborative projects. The CNRS is currently involved in discussions with 4 primary strategic sectors: automotive, energy, water and electronics.

Some examples of collaboration

In the field of energy storage, the CNRS has set up a network of exchanges between public laboratories, that goes beyond the CNRS laboratories. The aim is to pool research efforts in this field, in liaison with companies. In the specific case of batteries, our research has led to the development of a new battery technology: sodium-ion batteries. The valorization of these developments has taken the form of the creation of a startup: Tiamat. Tiamat is partnering with major corporations. They follow the startup closely, test its solutions, compare them with other solutions currently available or under develop-

ment, etc. These interactions challenge Tiamat, while enabling it to improve and shift its product development towards the needs of future customers.



Some of the relationships established between the CNRS and major industrial groups have been ongoing for several decades. Beyond one-off projects or responses to concrete and isolated problems, we seek to develop structured relationships, such as joint laboratories. These entities are placed under a joint governance between the CNRS and a company. They aim to conduct a set of research projects, on a given theme. This is the case, for example, of the Canopée joint laboratory, which was recently established between St Gobain, the University of Lorraine and the CNRS. Canopée is dedicated to the study of materials and "systems" under extreme temperature conditions, with the aim of reducing the carbon footprint of high-temperature manufacturing processes. In such a joint laboratory, CNRS researchers and industrial researchers agree to work together, over several years, to achieve the scientific roadmap they have jointly defined.

It takes two to collaborate

We have established more than 160 joint research structures with companies. They are often created out of a bilateral relationship, established between two researchers, one coming from a CNRS laboratory, the other one coming from a company laboratory, who have come to know and appreciate each other over the years. They may have moved up in their respective hierarchies and, from there, decide to work and conduct research together.

One of our flagship joint laboratories is the one that exists between the CNRS and Thales. Albert Fert, the condensed matter physicist who received the Nobel Prize in Physics for his work

that gave rise to spintronics, is coming out of this joint laboratory. At the origin of this laboratory, we find strong personal relations established between a research director and his counterpart at Thomson CSF (which has since become Thales). This joint laboratory was born out of this relationship of trust. It has been working perfectly well since 1995. The creation of the laboratory did not come from a corporate desire. There are many examples of this kind. We might be tempted to conclude from this, that the best strategy for building lasting relations between public and private research is to encourage interpersonal exchanges, by all possible means. These opportunities for encounters must be multiplied if we want to create links.

One way of doing this is to encourage exchanges of research personnel between public and private sectors. If a public researcher works for 3 years in a private laboratory, he/she will create strong bonds, networks and knowledge, upon which he/she will be able to rely later on, in order to create structuring relationships. To spend some time in a private company is also an opportunity for a public researcher to be confronted to a different cultural environment. In any case, it is an opportunity to break down preconceived notions about objectives pursued by private research. This cross-provision of research personnel is clearly to be encouraged, but it remains rather limited at this time.

Open and global research?

Science is widely open and the vast majority of scientific publications are freely accessible to everyone. This is a good thing, because scientific progress is born from information and knowledge exchange. One example is satellite data obtained from EU-funded satellites. This data is not restricted to EU researchers alone. It is accessible to all. The aim is to promote the use of satellite data, to make global use of it, thereby feeding the global scientific community and devising applications that will benefit everyone.

One might wrongly object that the patent system contravenes this principle. The principle of patents consists in making knowledge available to the public (a patent is a public document) in return for an exclusive right to exploit this knowledge for a limited period of time which

is granted to the inventor. We can therefore see that the debate is about the conditions of exploitation of the invention, but not about the disclosure of the invention. The purpose of a patent is not to conceal knowledge; the objective is indeed the dissemination of information.

We are going through a major economic crisis, following a health crisis. In this context, one can understand the current policy, tinged with protectionism, which aims at repatriating as many activities as possible at national or even European level. However, I am not sure that this movement can be applied uniformly. In particular, it would be farfetched to apply this policy to research. Research is global. It does not seem conceivable to limit it to country borders, even European ones. Researchers are driven by a global objective of developing scientific knowledge. They will naturally seek to compare and exchange with the best researchers worldwide, or go wherever the means available to carry out their research are the most important ones. From this point of view, scientific research can be considered as relatively free from geopolitical considerations. I was quite surprised to see the importance of the research relations that exist today between France and China, reflecting the fact that China has become a major player in the scientific field, which it was not even 20 or 30 years ago. But that is a different story!





Florient Mourieras, Catalent Pharma Solutions

General Manager

In France: numerous but difficult-to-access innovation aids

When we wanted to reorient our company towards Research & Development, I had to convince my team that we needed to set up in France and not in another European country. First of all, I had to take on specific consultants to guide me through the aids available within the French administration.

The first thing that struck me was that we had a very complete set of aids but that we were not able to have a global vision of them without getting lost. As a group of Americans who like pragmatism and simple things, France does not speak to us. Because France offers research tax credits, zero interest loans on a regional or European basis, but no concrete financial aid. In addition, this aid often excludes large groups.

I also followed the acquisition of a company in Belgium by the group. The Wallonian federation rolled out the red carpet, adapted to the size of our group by co-financing the investment and making arrangements in line with European regulations. However, when you look at the overall amount they can offer, it is certainly less than what France can do. But in France, as the administration is paralyzing because of its structural rigidity, major investment opportunities are being missed. Fortunately, I had the extraordinary chance to meet the Prefect of Haute-Vienne, who has gathered all the players around the table to solicit them for the implementation of my project. If he hadn't done so, I wouldn't have been able to develop anything even with a perfect business case. This is due to a lack of visibility and a lack of understanding of our ability to finance innovation.

Large foreign companies excluded from innovation grants

We can differentiate two types of innovation:

- Incoming innovation, which is the first to enter the territory: when a company arrives and wants to set up in the territory. This type of company is easier to support because it is considered to be starting from scratch.

- French companies that are already established and have contacts at the highest level of the State because of their extremely important position on the territory.

However, when innovation is about making a transformation, a reorientation and you are a foreign group, it is more complicated. Indeed, when you are an SME that is part of a large American group listed on the New York stock exchange, you don't fit into any box and you can't access innovation aid.

In my opinion, this is not how we are going to attract innovation to France. I think we need a Franco-European questioning of financing. Today there is an economic reality and if we want to have the kind of multilateralism we advocate, this must be concretized at the territorial level through innovation aid.

In my case, to overcome these difficulties, I had to knock on the right door, go and see the Prefect of Haute-Vienne so that the State could stimulate the administration. As soon as we passed that stage and we got the State's approval, the project was launched. Let's not wait! If we must go through an exemption every time to do something, it will be impossible to move forward.



Lack of clarity in administrations: a Europe-wide problem?

For an American group arriving in Europe, there are so many variations in financing from one country to another that it becomes extremely complicated to know where to set up. This is to our disadvantage in France because we tend to have long-term aid: the research tax credit (CIR), for example, extends over five or six years and is ultimately more important than what the other states will promise. However, since Americans like readability, they tend to go to countries where aid is more direct, even if it is less advantageous. I'm convinced that France has the capacity and the aid programs but doesn't know how to sell itself. France needs to sell more of its capacities and its value.

The cause: an overly conceptual French education system?

The financial and business culture is extremely poor in France and more generally at the European level. I acquired my financial training in England where I worked for five years. I did have finance courses in engineering school in France, but I didn't learn the basics. There is a lack of pragmatism in France. We have an overly scholastic vision of our approaches where we are ten

thousand leagues away from the field. As far as financial culture is concerned, we need to change the way we look at this subject from a very young age so that it can be considered in a more natural way. This change of mindset will only happen if there is an overall change at the State's level. On the other hand, young people must be oriented more quickly so that they choose their specialty earlier. We are moving in the right direction with the recent reforms, but we are in a country of inertia where change must be abrupt for it to be accepted.

Nevertheless, there are advantages to our system: we have a country that has a much stronger levels of general culture than most other European countries, especially the Anglo-Saxons. The French on average have a much better general knowledge. Europe also succeeds in many areas. For example, it is the number one developer of molecules derived from biotechnology, ahead of China and the United States. But this is not put at the forefront, because France does not know how to sell itself, and thinks that success must be hidden. France is also the 3rd country in Europe in the development of molecules: it has excellent researchers, but they don't have this ability to create startups because they don't have the right state of mind. Unfortunately, they get bought out or get their idea stolen and they don't go through with it, which explains why we don't have many unicorns.

The notion of failure: France vs. the United States

Nobody likes to lose, in any country, but the problem in France is that we consider failure to be a loss. But failure does not necessarily mean losing. I think that this nuance is extremely important, and Americans are better at making the difference. It is not because they fail that they have lost. They take what they could have done better and bounce back. Why does the United States have so many great athletes compared to France? Because they don't have the same vision of failure. Failure is part of the game. It comes back to the grading system at school in France. Failure is something that should not be repeated. This relationship to failure leads many students to exclusion.

Is there a solution for better innovation in France?

What is the solution? I can't answer. In the United States, all states do not offer the same support for innovation. If Europe were to position itself as an American federal state, which is not the case, there would be variations, which would create conflicts between the different states. If we wanted to move in this direction, we would move towards a business Europe in its entirety, which plays the common card. But how can we avoid attracting jealousy if some countries attract more industries when the aid is the same for all? Americans, if they can access the same aid everywhere, will go where the labor is cheapest. This would imply a return to a social Europe with a common minimum wage. Then we can try to harmonize everything. But at this stage, going beyond that seems extremely complicated to me because there will necessarily be discriminatory elements for each country regarding the entry of an industry into the territory. If you need to do large mechanics, you will go to Italy or Germany. If you need to do research, you will go to France, to cite these two examples.





Alban Neveux, Advention Business Partners

Group CEO

Evolution of the European innovation ecosystem for startups

Advention is confronted with the question of the European innovation ecosystem for startups through its relationships with different types of players: large groups, mid-sized companies, startups as well as investors, on a wide variety of subjects. It may be a large group wishing to acquire a particular technology, or to set up strategic partnerships. Advention is also very active in strategic reviews in the context of equity investments by private equity funds, and sometimes also in fundraising for small startups.

The transition from a seed stage to a startup and then to a scale-up is a real challenge for Europe in general, and France in particular. On this subject, we have historically been associated with a major initiative to raise funds for a very innovative investment fund. This fund aimed to create a new ecosystem in order to finance the emergence of French and European scale-ups and unicorns.

The aim was to create a scale-up fund for growth companies, bringing the possibility to raise capital more easily and above all more massively, because the major issue for these future scale-ups is access to equity capital. We started from the observation that, in the field of financing in general, and startup innovation in particular, the venture capital sector in Europe and in France did not bring together enough players, and above all the deals were too small (2 to 3 million euros) to allow a real scale-up. Moreover, with too small deals, it is much more difficult to be able to surround yourself with value-added service providers because you cannot spend a too much of this amount on these different advisors (lawyers,

financial experts, strategic advice, etc.). There is therefore a lack of scale effect that can easily compromise the investment.

Fortunately, over the last ten years we have gradually seen the creation in France and Europe of new sources of funding that have made it possible to transform the world of funding into innovation for startups. Today Europe and France are finally starting to have richer ecosystems that have nothing to do with what they had a few years ago. The number of funds has evolved, as has their professionalism. The amounts and average tickets have progressed well. When we started working on this project, we noticed that there was a big gap between, the ecosystem of startups that was just beginning to mature on the one hand, and on the other hand, the ecosystem of listed companies. Between these two worlds, there was a real market gap corresponding to this transition phase, and we saw this as a real blue ocean from investors' perspective, who were also very active on both sides of this gap. Based on this point of view, the United States has a much more complete market in the different segments of the financing game, which allows for end-to-end support. In France, we had understood the first brick, but the rest was and still remains an issue to be dealt with.

Analysis of the causes of the market failure concerning scale-ups

One of the reasons for this flaw is that the equity market in France is very inefficient for capitalizations below one or two billion euros, and this is an important issue that is still unresolved. The idea therefore came up to create a fund in which institutional investors, and more precisely insurers, would be associated. In fact, there are many pro-

ducts to capture French savings, but these were not well thought out, particularly among life and pension insurers. In this universe, there are significant sums that can be managed with low liquidity and long duration, but which are managed in a very – or even sometimes too – conservative manner. We were therefore looking to capture a small part of these funds in order to raise them for investment in listed scale-up projects. To consider tickets not for 2 to 3 million but for 50 to 100 million euros, or even more. One of the funds that ended up doing this is Partech. They were interested in this subject and they said "my problem is that the companies I'll bring to a size of 50 or 100 million euros in value, I won't have the means in France and Europe to take them to the next scale tomorrow ". Our project therefore aimed to respond to this famous market failure, which is a lack of financing for real scale-up constructions, which is what the United States really has with the large venture.

Regulation

However, when it comes to the insurance universe, a first difficulty encountered in this survey was to be faced with an extremely regulated universe with also behavioral aspects to take into account: indeed, banks and insurance companies are part of a system and work quite well together, and as long as one does not move, the others do not move either. The second difficulty encountered was all the rate constraints, valuation methods and prudential ratios of insurers, which are real constraints. We fought hard to address these subjects in order to show that it was possible to take them into account.

Seeing the future through private equity

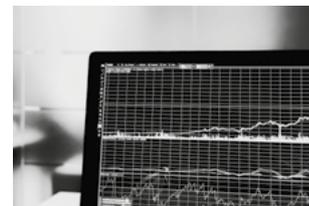
If ten years ago the scale-up part in France and in Europe was poor, fortunately things have improved a little bit because some private equity players – with the support of public authorities – are increasing in terms of fundraising size, with fundraising at 50-100-150, and ticket sizes rising to 10-15 million. All this was unthinkable ten years ago. Hopefully it will continue. I think it will, because the technological dimension of many solutions is a response to crises like the one we are experiencing now.

Generally speaking, the role of private equity

in financing the economy has been considerably strengthened just about everywhere. In the United States, the private equity market has done very well because it has been a response to the cumbersome nature of public markets, which are now proving to be relatively unsuitable because they are too cumbersome, costly and transparent. Managers of listed companies lose a lot of time in procedures and communication management. Moreover, in France and in Europe in general, many stock market performances have proved unattractive. In this context, private equity, on the contrary, provides the same funds, but over much longer periods of time, although paradoxically it has a poor image with the general audience. In fact, these are players who really want to work on value creation because they are there for several years and want to double or triple their investment in a structured way, investing over a longer period of time. Investors are sensitive to this, they no longer want the stock market to demand performance every quarter, whereas sometimes certain subjects require longer periods of time. This is not new, but over the last ten years it has accelerated on both sides of the Atlantic.

With the current crisis, the world has become even more unpredictable. Several CAC 40 companies have declared that they no longer send forward looking statements. When such large groups no longer give forecasts because no one is seeing clearly, you have an idea of the violence of the context. Our private equity clients are fortunate that they are not asked what will happen in the next quarter. Private equity is working very differently in this crisis and is rolling up its sleeves. It is working on refinancing and strategic changes to adapt to the new context.

Today, there is no longer enough proximity work on the stock market. Funds like Amundi or BlackRock, that buy half a billion of L'Oréal shares, do not really work on what they invest in: they mainly do stock picking and they do not get involved, unlike private equity, where getting involved and not just investing is an integral part of the business, and it's much more interesting for everyone.



Challenges of the Euronext market and specificities of successful companies on the stock market

As part of the fund raising mentioned above, we analyzed nearly one hundred IPOs that took place on Euronext between 2011 and 2018, and we noticed long-term performance levels. The conclusion was implacable: 80% of the companies that had undergone IPOs on Euronext over this period were below the IPO price: in other words, it was a bloodbath! You had 80% of the companies that after several years were worth less than their IPO price. How can you make this market credible, when during this same period the CAC and Eurostox major stock exchanges had performed well?

We draw three lessons, based on the 20% of listed companies that had successfully completed their stock market performance: their IPO price had been very reasonable, their management had not over-promised and they had always brought to the market the results they had promised.

So this concerned a very marginal number of companies that had really succeeded in creating value, and the stock market did not allow the emergence of champions in the end. It is therefore essential to find lasting solutions to strengthen the equity of these future French and European scale-ups.





Mylena Pierremont, Circles & President, French Tech Mission

Founder and CEO,
Connected Circles &
President Europe, French
Tech Mission

Innovating, yes, but to what end?

It is very important in the world of innovation, to never forget for whom you are innovating. "Technology for technology's sake" leads to ideas that are not necessarily those that can be put on the market. Defining the target audience, understanding the future user and analyzing customer insight are the fundamental steps that must accompany the innovation process. Because today, if we don't respond to a real need, whether it is latent, future or existing, we are not precise enough in what we develop and we spend a lot of time rebuilding our business model. I was working at Philips when they developed the mp3 technology. At the same time, Apple launched the iPod. Everybody told me: "Milena, it's not possible, we are much better than them!" I said, "You know, innovation is about meeting a need with a brand, it's about understanding what the consumer wants. At that time, consumers didn't want all these complicated technologies for sound, they just wanted a small battery to store their music on. So in fact, when you compare this idea of the mp3 which was very generic and the iPod which was plugged in by Apple and well marketed, you realize that you don't need to have the best technologies but just the technology to put it in a product: this is what I call a value proposition.

I believe innovation is to understand the value proposition. Today, I'm in a science park surrounded by these young startups, all these technologies, AI and data engineers, all these people who are the equivalent of Saclay, and the same thing applies: if we don't see what will be done with the technology we develop, or where we're taking

the technology to find a positioning, we lose a lot of time. That's why I believe very much in this tripartite approach where we position companies, experiences, technology on one side and the public sector or funding on the other.

Structuring your innovation

Today, we can no longer say that things take a long time. We have moved into an accelerated mode where we are experiencing a disruption in this way of acquiring our skills, getting insights, testing and learning quickly. We can no longer justify not doing good customer insight because "it takes time". Today, thanks to these new technologies, to all these ideas that have abounded in startups, we can get insights quickly, we can go out and test within 24 hours, so we have to put people at the head of these innovations who understand the importance of basing them on a value proposition.

I think that among the success stories, some of them were born out of a stroke of luck, but most of them have been accompanied by a well-controlled process. I am therefore convinced that innovations should be led by people who challenge the status quo. In large companies, we need to challenge the status quo through training, we also need to get sociologists to work, to get all this new science to work, in order to fully understand the consumer of tomorrow, in short: to help put insights into music.

Europe vs. the United States: market or cultural differences?

Although the market is more complex in Europe than in the United States, where we have a single market, I think we should not exaggerate the

cultural differences in Europe. We have a level today as a European citizen, who is increasingly homogeneous. Of course, there are markets in which there is a specificity that depends on the local level, such as the health market for example, but I would say that when technology is



there to bring about a disruption or a better way of life, we can no longer find the excuse to say that we are a culturally complicated market.

The market is still complex in terms of regulation though, but from a consumer perspective, I think it's a false problem. Look at companies like Blablacar, car sharing, mobility: apart from the small local bias that you can have, these are concepts that fit in all markets. Good insights come and go across geography. The real strength is to be optimistic and to go and see how it will work rather than why it won't work. And what we learn most from America is that even when things don't work, we find a way to make them work. And maybe it's the cultural problem that makes it less successful in Europe. We tell ourselves that the others are different from one European country to another, but Texans are very different from Californians too. This is why I approve Saclay's approach, where engineers, salespeople, and companies work side by side and where the government helps. I think these are fantastic initiatives because they are the beginning of the hub in which we will be able to incubate innovations.

Coming together to innovate

I also commend the work that is being done at French Tech and that allows people of different nationalities who have the same passion for tech to talk to each other. It is this movement, this great ecosystem that is being created to win together. And that's why I believe that Europe today has a big card to play. It will come through young people who see France, who see Holland and who don't have all the cultural bias.

Moreover, what's wonderful in tech is that everything is open source: when you find something, you put it in the chats and another engineer in another country can start from your idea. I would say that it's this new generation that's going to help us to make it possible for us to work together, to make the cultural bias no longer exist. It is in this complementarity of forces that we will be able to move forward, because the engineer who does not have a good salesman, may still have a beautiful product and develop it, but he won't necessarily sell it. Successful companies are humble enough to think from the outset that they will need the other functions.

Cooperation among foreigners is also important. It will go through different levels of cooperation. First of all, getting to know each other well, that is, making the effort to meet each other, to understand each other and to take the step of saying that together we will go faster, together we will do better. And therefore, to recognize the needs of these different technologies thanks to social networks, which create a community of people who will be informed and be able to connect with each other.

The secret is to go fast in the go to market. We're not America, that's why we have to go fast when we go from France to the Netherlands to Germany to England... It's this geographic acceleration that we need. It can be done through this informal but very strategic communication. A "top idea" is going to be pushed, it must be culturally relayed throughout Europe because it will create opportunities. It's thanks to this cultural tapestry that an innovation can be born, can grow. I think that this ecosystem of people who understand each other and help each other will go faster than our regulations.

Big business: a responsibility in its own right?

There is an awareness and a responsibility on the part of the people who are lucky enough to be in large groups with important positions to help the scale ups that will be the lungs of tomorrow. And we're not there yet. Today, when we are small scale ups and we want to push the big door of a large group, it's more complicated. Large groups are still too afraid of risk. Americans do it because it is more integrated in their culture to take risks.

On the other hand, we must not forget that digital technology creates jobs, the jobs of tomorrow! French tech accounted for 25% of hires last year. We shouldn't ask ourselves questions, go out and look for ideas, go international, find ways to innovate. The disruption will come through people who are better able to work with the tech of tomorrow. We will have to work in this world.



René Thomas-Nelson, Fahrenheit 212 Innovation & Strategy Director

Gap between breakthrough innovation and commercial outlet, France vs. United States

Compared to other countries, there is a greater gap in France between research, i.e. people who create breakthrough innovation, and those who find opportunities in the market. French research is very powerful because it is done with great depth, for many years, in an almost disinterested and disconnected way from the business, on subjects that seem to be peripheral but on which we will find the most disruptive things. However, the product's shift towards business applications is not immediate, therefore there is not always a commercial outlet. This is the case in many French companies, unlike in the United States where research budgets and researchers are much more aligned and with clearer perspectives. A researcher meets an entrepreneur, and it is the meeting between the two that will push a new product to the market.

Deep tech: a tool for acceleration

France is an engineering country in spirit, where technological innovation is valued much more than commercial innovation. For a long time in France, there were only deep-tech incubators because low-tech was not considered innovative enough and did not receive state subsidies. You even had to "transform" your startup by adding a bit of technology to get subsidies.

Deep-tech offers an interesting focus because we are often in the lower layers of innovation, where we have the most skills, where we can more easily overcome regulations (driven by the commercial side of innovation) and language barriers (because these are often subjects that go to the heart of the technology). We can

cite several examples such as Algolia, a search engine technology created by two Frenchmen, Snowflake, or Criteo, a very disruptive startup that has changed the face of advertising on the web. These very disruptive startups became international very quickly.

The French startups that accelerate the fastest and the simplest are therefore those that focus on a technology and not on the customer experience because they avoid some of the friction found in low-tech.

Collaborating with startups when you are a large corporation

In France, the culture of innovation has changed a lot. A few years ago, corporations didn't know how to work with startups. Indeed, large corporations are very controlled and standardized in terms of reporting and consolidation of results, focused on their efficiency, with an industrialized operation, which is complicated when it comes to working with startups because it calls into question their functioning. In the event of a collaboration, either the startup is a tool that easily adapts to these processes or it is something that represents a future business for the company. In this case, the whole company will do everything to slow down the startup when it is bought, or its collaboration when it is outside, which is very hard. I think this pattern is repeated in France but also in the United States. However, today, thanks to open innovation, the acculturation to startups has taken place and large corporations have gained in maturity on these dimensions.



Does Europe offer enough culture of innovation to allow startups to develop?

As far as innovation is concerned, Europe has caught up well in terms of culture and ability to raise funds. Many tech entrepreneurs have succeeded, and continue to develop the innovation ecosystem in France. However, when a critical mass is reached, we see that startups that are going to become more than unicorns must seek funding beyond European borders.

In addition, there is a real difference in France, where there is very strong regulation in addition to European regulation, which can be a brake that is difficult to circumvent.

The mistrust of startups towards large corporations

There is a kind of arrogance in corporations that tend to think that the startup needs them or their funding. These corporations think that they can acquire any startup easily, which is not always true. Indeed, the latter are sometimes reluctant because they themselves have the capacity to raise funds, are afraid for their independence, do not want to be hindered or want to manage their projects as they see fit. It is therefore not necessarily easy to recruit the fifty best startups in Paris, as the example of Station F creates an emulation but that not all the best startups necessarily want to join.

Some success stories

We have startups in France on the verge of becoming unicorns. I admire startups like Vinted, which are very accessible to the consumer, European and have a strong impact. Back Market is also a very good example, which has remarkable elements such the fluidity of the customer journey and financial transaction process and which has made second-hand products attractive, simple and secure. These startups have been successful because they have a different culture and an incredible speed of execution.

The design and fluidity of the user interface, a dimension missing in France and Europe?

The design dimension is little emphasized in France, compared to the United States and Nor-

thern countries. This is not the case when we talk about product architecture and luxury design for example. On the contrary, the United States have the ability to make the user interface fluid. However, this has changed: having studied several years ago in a business school as well as in an engineering school, it was difficult to learn how to pitch with a significant impact. This has changed: now at the Ecole Centrale where I teach, all students are able to present their project. There is a significant progression even if there is still a cultural gap compared to the Anglo-Saxons.

How can large companies welcome startups in good conditions?

Large companies often try to recruit startups before they are ready to welcome them. In companies like Amazon, there is a habit of change and reconfiguration, but many companies abhor this and have very rigid organizational modes that mean that when you integrate an object that "doesn't fit the mold", the only goal is to destroy it. For me, it is therefore important that large companies question on how they can welcome innovation and reconfigure themselves. In the same way, I think it is wiser for a corporation to invest in a startup and let it develop while creating favorable conditions if possible.

Finally, the framework between the startup and the company must be managed by someone who can understand how to protect and help the startup when necessary while integrating it into the company.

The lack of resources dedicated to innovation in France: an opportunity?

As far as the development of technical professions in France is concerned, it is true that the United States has more capacity to pay. This can be seen as a disadvantage because it leads to a brain drain in the United States. However, it can also be seen as an advantage because startups that want to develop in software can get good engineers at competitive prices in France. This is also true for data science.



Chloé Tuot, Raise Lab COO

RaiseLab: RAISE, Schoolab and innovation

RAISE is a financial group with investment funds in a variety of activities including venture capital, capital development, real estate, and impact. The management teams of each of these funds actively contribute to supporting the French entrepreneurial ecosystem by donating 50% of their carried interest to a philanthropic endowment fund, RAISESHERPAS, that provides interest-free loans and mentorship opportunities to early stage startups to help sustain their growth.

Since its launch in 2013, RAISE has always been keenly aware of the positive externalities of corporate innovation and the barriers preventing their successful implementation. This led to the launch of RaiseLab in 2019, a joint venture between RAISE and Schoolab, an innovation studio focusing on fostering internal innovation through training programs on innovation topics and design thinking/lean startup/agile business methodologies, intrapreneurship programs, incubation programs for early stage startups, etc).

RaiseLab acts as a catalyzer for external innovation – also known as open innovation. We have one specific goal: maximizing the effectiveness of business collaborations among enterprises of all sizes, through a strategic consultancy practice and a physical innovation campus, the Maison RaiseLab, located in the heart of Paris.

Our consulting offers are designed to support the creation, scale and integration of new business activities. We help clients to expand or rethink their innovation strategies, source internal needs, identify external partners, launch MVPs and -- above all -- achieve scale. We support the conception, launch and deployment of

products / services resulting from these collaborations, with an emphasis on defining their success and measuring their effectiveness. This can be both for incremental innovations, as a response to an identified need to improve an existing product or service, or the creation of a new activity or business unit.

We strongly believe that corporate entities have a key role to play in supporting the growth of the entrepreneurship sector by providing them with opportunities for collaboration. Rather than being tasked with telling a startup how and in which direction to scale through an acceleration program, corporate entities would have greater impact if they identified common objectives and provided business opportunities that would generate shared economic value and set the stage for lasting partnerships.

Barriers to successful collaborations

Collaborations between startups and corporate entities often fail not because of a lack of good intention, but due to mis-alignment, lack of appropriate internal sponsorship, and -- most importantly -- because pilot projects are all too often considered objectives in and of themselves, rather than being a crucial step in the process of enabling scale and integration within a corporate entity.

When scale is identified as an objective from the get go, the framework, processes and operational management of a project are remarkably different than simply aiming for a pilot program or proof of concept. At RaiseLab, our projects are always launched in response to a clearly identified business challenge, and always include operational teams. From our experience, two key

factors of success to achieving scale and integration are 1/ alignment among business units and external project leaders and 2/ alignment among all internal stakeholders, from HR to IT, purchasing department, legal teams...etc. To ensure a successful outcome, it is essential for our team to understand how well versed our clients are on innovation topics, alongside knowing their direct and indirect objectives.

Success story: SNCF Reseau

An example of a successful collaboration is a project we undertook for SNCF Reseau concerning rail safety. We were asked to help find an efficient way to announce the passing of trains in remote areas across France with enough advance notice that those working on rail maintenance were able to get out of harm's way. The selected solution combined technology from two startups, including tracking technology actively used in the equestrian industry. We substituted a train for a horse, and the rail maintenance worker for the finish line. After being successfully tested in a few locations, the solution is in the process of being rolled out in other markets across France.

Prior to launching the solution sourcing phase, we spent a lot of time understanding the underlying persistent challenges and context through a series of interviews, analyses of existing services, etc. that informed a scenario planning. We then had a wealth of information to enable us to readily identify a startup working in a completely unrelated sector, deploying technology that could be applicable to this particular pain point. As the end goal was a national roll-out of the solution, we specifically designed a project management framework designed to address potential challenges throughout the collaborative process, rather than be confronted with them at the end of the pilot project. This included bringing in relevant sponsors at various stages, testing and adjusting the solution with operational teams, KPIs based on both effectiveness and economic value, risk assessment analyses....



Conclusion

Each collaboration requires tailor-made support, because each case is unique. At RaiseLab we are not subject-matter or industry experts, but have a strong expertise in complex project management and have developed our own methodology and tools to enable successful collaborations. It is a real added value to have a trusted third party providing the methodological and pedagogical aspect to the project, who asks pertinent questions at the right time, involves relevant internal and external experts, identifies relevant actionable KPIs and sets up the project roadmap, understands when to take calculated risks (and when not to)... all the while providing the level of customization expected for strategic consultancy work. Successful collaborations of this nature range in complexity; an external coach facilitating the implementation of best practices from conception to delivery and scale can be the difference between an outcome that makes for good PR and one with tangible, measurable indicators of success that speak for themselves.





Daniel Weizmann, VWR Avantor & Medef Ile-de-France

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Innovation, at the heart of business concerns

Today, the subject of innovation is more than ever at the heart of discussions for entrepreneurs and companies in the sense that growth can only come through innovation. There are two types of companies: companies based on products and a stable business which give them some ease, and small companies, which have no model to rely on since they are starting up. Their approach to innovation is thus different.

In the pharmaceutical sector, we know that today's industry will certainly not be tomorrow's because there are a lot of new technologies and if we don't follow them, our turnover will disappear. The difficulty of innovation is therefore to be able, on the one hand, to exploit what we have, and on the other hand, to foresee the future.

Innovation, anticipated or forced

There are two types of innovation: anticipated innovation, and innovation "gun to your head", as it is the case with pharmacology, which realized ten years ago that if it did not innovate, it would die. Indeed, technologies have evolved, particularly in the field of oncology, where innovation is moving at the speed of light. This has pushed pharmaceutical groups into innovation in a way that is perhaps a little forced. Startups, for their part, have no choice: they are forced to innovate in order to exist.

Barriers to innovation

a. the search for funding

I believe funding is a hindrance today in France and other European countries. The Anglo-Saxon world has a much greater agility on the financial risk aspect through its institutions but also through its banks that are not afraid to help and that are oriented towards innovation. In Europe, it is therefore complicated for companies with innovative ideas to finance and implement them.

b. its place in the hierarchy

The culture of innovation is important in a company. The management of top Anglo-Saxon groups is much more culturally accustomed to taking risks and moving forward on its innovations than in Germany, for example, which innovates in terms of engineering but where an innovation can take time to come out. Old Europe has trouble innovating because it does not have this culture of risk, and it is not in the DNA of European companies either.

In my opinion, a group's culture of innovation comes through its leader, who will set the tone of the strategy. Twenty years ago, there were strategy leaders. Today, except for large groups, we can see that they have disappeared in favor of restructuring and cost saving. But innovation is not just about launching a new product, it is also about having a vision of a company's development. Leadership and innovation are intimately intertwined. This is why innovation must be put back at the heart of the strategy and link to high levels in the hierarchy. It is said that if you want to understand a company's strategy, all you

have to do is read the organization chart. I think that in France, we are too conservative in this respect, which is a barrier to innovation.

c. the culture of failure

The culture of failure also handicaps us enormously in Europe and particularly in France. Americans and Asians have a culture of failure that is much more successful than ours. Admitting that one has made a mistake is not a problem in the United States and in Asia, unlike in Europe. Unfortunately, failure is part of innovation. You can't be innovative without accepting the fact that you have sometimes bitter failures.

d. over-regulation

Another barrier to innovation is over-regulation. All laws exist in Europe, but some countries over-regulate. An American shareholder doesn't care whether you innovate in France or manufacture in France. He wants to go fast and have a return on investment without it costing him too much. On the other hand, Europe has a power of attraction for innovation that is extremely important. Despite all that is said about France, it remains extremely attractive to investors because it has infrastructures, schools and a very high level of education. If there weren't the barriers mentioned, European countries would be even more attractive.

e. culture

Americans know that Europe is complex because it is made up of many countries, each with its own culture, regulatory system, language, etc. Despite this, Americans remain attached to Europe because they know that it represents an important market. So, they often set up organizations and leave Europeans in place to deal with the problems of heterogeneity between countries. I don't think that this heterogeneity is an obstacle for them.





XI. Acknowledgements

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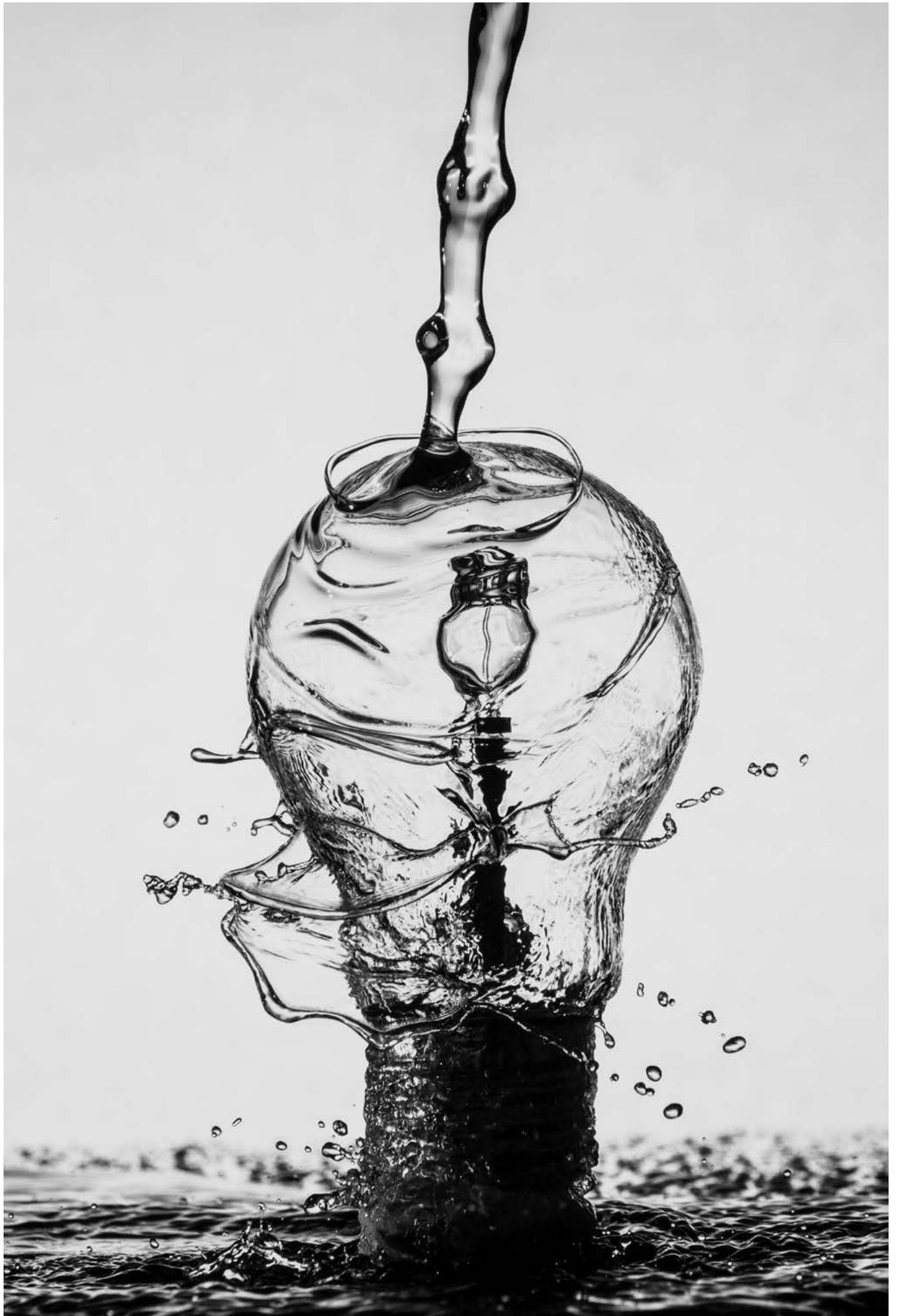
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About AmCham

AmCham represents companies that are committed to the transatlantic relationship. Founded in 1894 to promote economic relations between France and the United States, AmCham today brings together 230 French, American and European companies of all sizes and present in all economic sectors. Independent of any government, AmCham helps bring new ideas into public debate, particularly to strengthen the economic competitiveness of France.

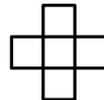
In this perspective, AmCham has numerous working groups that develop recommendations in the form of white papers and policy papers. As a platform for high-level meetings, AmCham regularly brings together business, political and intellectual leaders in order to give rise to in-depth debates and discussions on economic, social and geopolitical issues particularly related to the evolution of the transatlantic relationship. AmCham is committed to societal issues that are at the heart of its members' activities. Thus, AmCham has several initiatives on topics related to the future of work, inclusion and innovation.

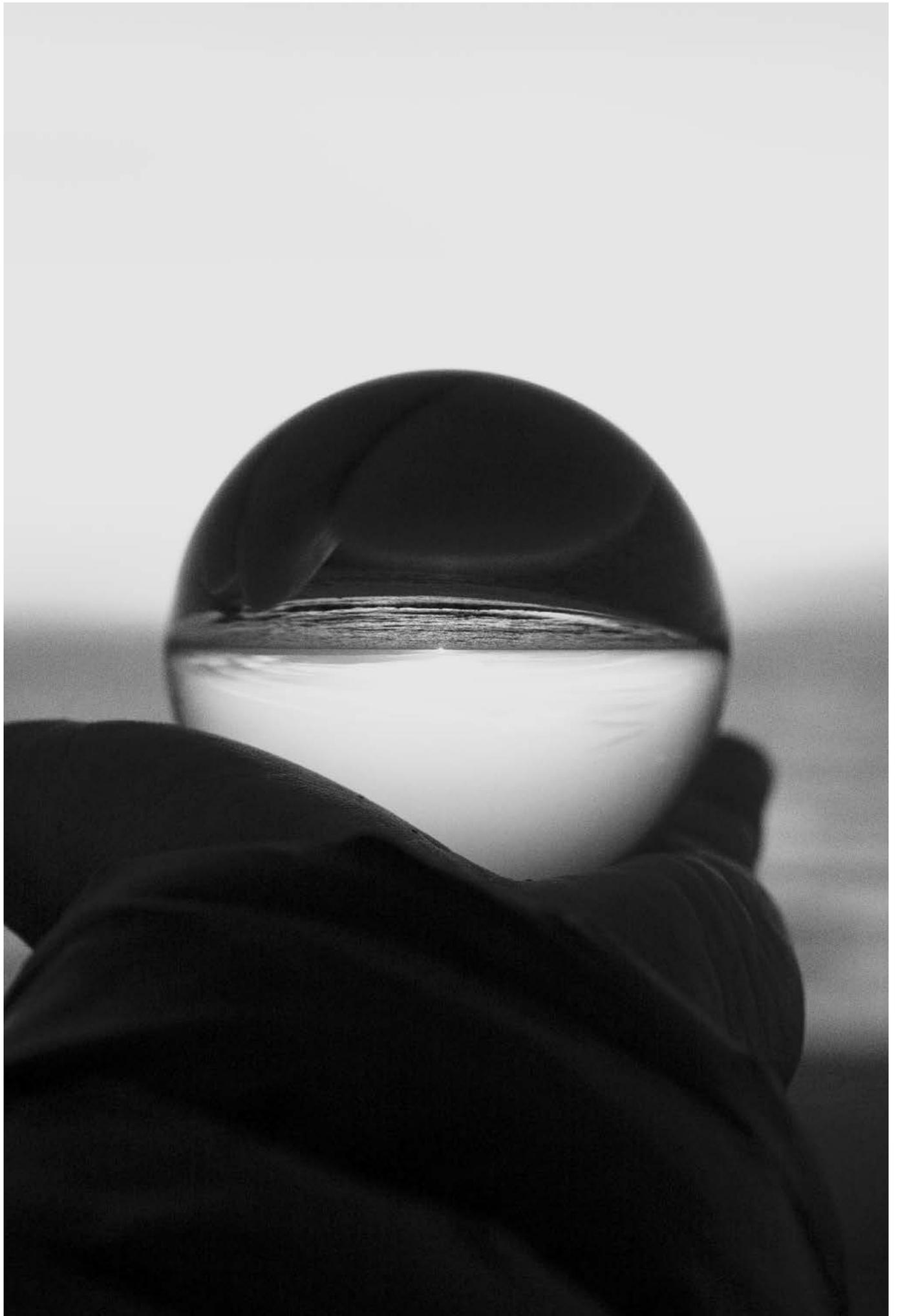




About Fahrenheit 212, part of Capgemini Invent

Fahrenheit 212 is a global innovation consultancy, part of Capgemini Invent, focusing on “non-core” innovation: creating new products, services and businesses that deliver sustainable, profitable growth for the world’s most ambitious companies. We challenge the belief that innovation is inherently unreliable and have spent the last 20 years designing the method, building the model, and assembling the minds to make innovation a predictable driver of sustainable, profitable growth for our clients’ businesses. Today we are present in New York, Atlanta, London, Paris, Stockholm and Munich.

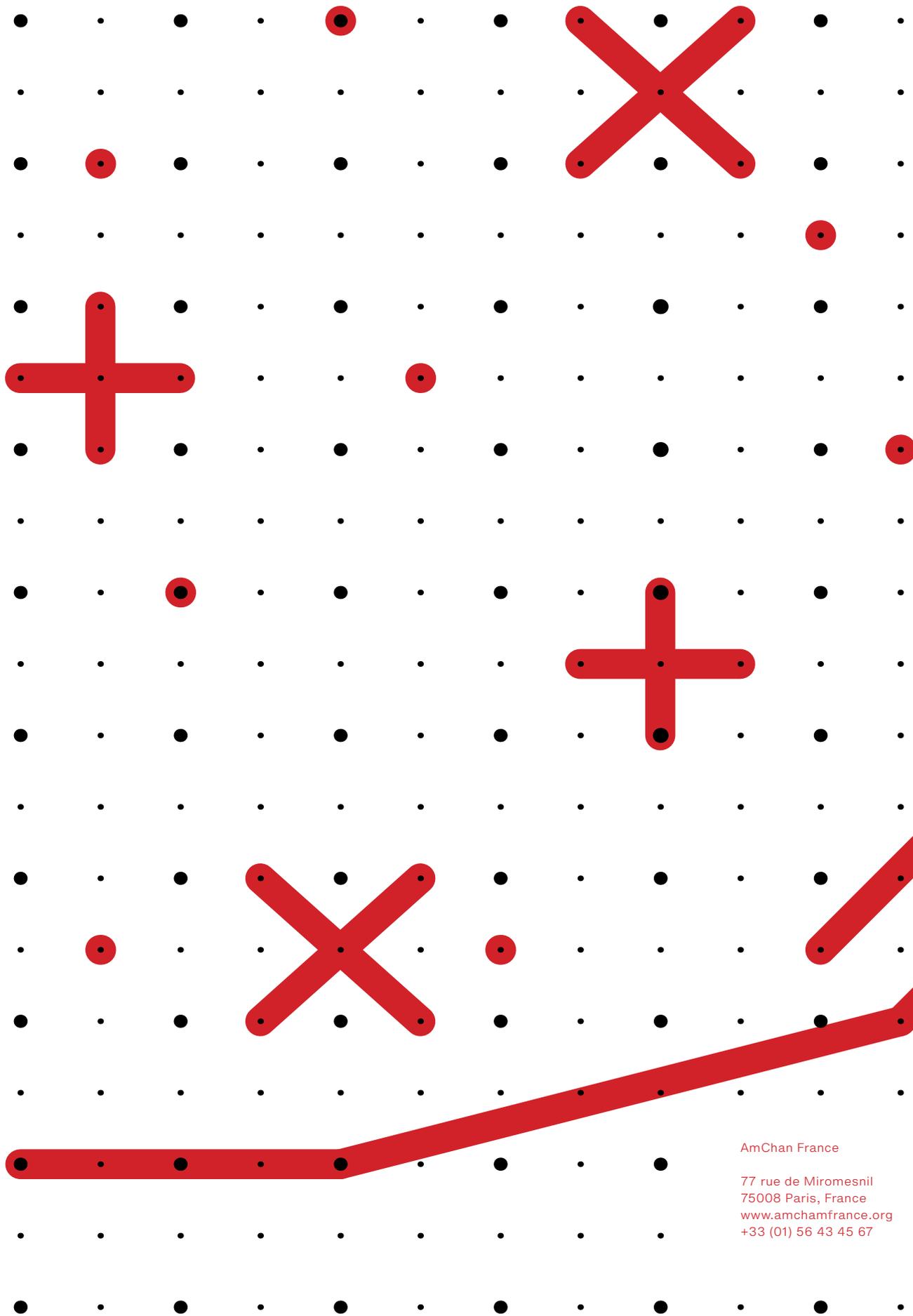




About Konsei Advisory

Konsei advisory is a boutique public policy and government relations cabinet specializing in startups and tech policy in the EU and in France.





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