

Technology, Media & Telecommunications Practice

# Winning formula: How Europe's top tech start-ups get it right

We studied Europe's top 1,000 start-ups to learn how they succeed in the region's fragmented value pool and found the answers lie in four distinct strategic plays.

This article was a collaborative effort by Kim Baroudy, Philipp Handel, Anne Hürxkens, Bouke Marsman, Tobias Strålin, and Jaap Vriesendorp, representing views from McKinsey's Technology, Media & Telecommunications Practice.



#### European start-ups are being created and

growing at an unprecedented pace these days, attracting the attention of global investors, customers, and corporate partners alike. In the process, they are proving the conventional wisdom wrong: launching a start-up amid the continent's fragmented value pool doesn't necessarily have to be such a challenging proposition.

Despite the range of systemic challenges start-ups still face, including regulatory and cultural challenges, growing numbers of dynamic new ventures are thriving. These bold players offer valuable lessons for others aspiring to similar heights—and to a European continent striving to stay economically and technologically competitive with the rest of the world.

To better understand how these standouts succeed, we studied the top 1,000 European tech start-ups founded after 2000 in 33 countries, which include 21st-century companies such as Spotify, Adyen, and BioNTech. We analyzed them along 15 critical growth dimensions and variables such as geography and vertical, as well as on the requirements for the time, funding, and revenues it takes to reach unicorn status (see Exhibits 1 and 2; also see the sidebar,

### Exhibit 1

Almost two-thirds of the top 1,000 start-ups and scale-ups in Europe were founded in the United Kingdom, Germany, and France.



#### Top 12 countries of origin of top European start-ups and scale-ups, number



Note: Figures may not sum to 100%, because of rounding. Source: Crunchbase; Dealroom; PitchBook; McKinsey analysis

# Biotech and healthcare, B2B SaaS, and fintechs make up more than half of Europe's top start-ups and scale-ups.

### Companies in sample by industry, % (number)



Note: Figures may not sum to 100%, because of rounding. <sup>1</sup>Software as a service. <sup>2</sup>Internet of Things. <sup>3</sup>Augmented reality/virtual reality. Source: Crunchbase; Dealroom; PitchBook; McKinsey analysis

"About our research," at the end of this article). Three key insights emerged from our analysis:

- Successful European tech start-ups follow one of four distinct roads to success: network, scale, product, or deep tech, each with its own characteristics regarding revenue growth, employees, and other similar markers.
- Different strategic plays require different success factors, such as overindexing on

commercial roles for scale players, focusing on an initial product hook for product players, or pursuing M&A activities for scale and network players.

Reaching unicorn status requires on average
€100 million to €200 million in funding, with
70 to 80 percent of the companies that make it achieving the €1 billion valuation mark within ten years of founding.

### Four winning strategic plays

Our research on the top 1,000 European tech startups showed that these companies follow one of a small number of distinct paths to successful scaling, built around a core strategic approach: network, scale, product, or deep tech. While these categories are not mutually exclusive, each of them provides a path to scale. We believe this classification provides practical utility for entrepreneurs, executives, and investors as they launch and attempt to scale ventures (Exhibit 3). By assessing themselves with regard to these strategic plays, European start-ups and scale-ups (and their investors) can spend less time and effort trying to figure out what they do best or how to do it on a wider stage and instead make better, faster decisions and focus resources for the greatest effect. Yet, knowing what strategic approach to embrace is only part of the equation. It is also critical to know what tactical moves tend to lead to success for each of the different strategic plays (Exhibit 4).

### Exhibit 3

Cluster analysis shows that Europe's top tech start-ups and scale-ups pursue four strategic paths, or plays, to succeed.

Visualization of strategic plays, including three dominating verticals in product play<sup>1</sup>



<sup>1</sup>Cluster-validation techniques were applied and a dimensionality reduction was done to visualize the strategic plays based on 11 key variables: vertical, number of countries with office presence, revenues, relative valuation growth per year, relative funding growth per year, number of employees, share of roles (commercial, operational, product/tech), share of employees from Europe's top 100 universities, relative number of acquisitions per year, patents granted, trademarks registered. <sup>2</sup>Software as a service.

Source: Crunchbase; Dealroom; PitchBook; McKinsey analysis

### Each of the four strategic plays has its own characteristics, with different types of companies that pursue them.

### Strategic plays

	Network	Scale	Product	Deep-tech
Strategy	Become more valuable as they gain users; these companies drive product adoption and usage to become the winning platform	Achieve early sales growth to reach critical size and economies of scale	Prioritize developing superior products and outstanding customer experiences that are distinct, bringing competitive advantage over direct growth	Focus on research and development early on to commercialize scientific breakthrough
Examples	Often marketplace, mobility, and social- media start-ups, such as Delivery Hero (on- line food delivery) and Tier (micromobility)	Frequently e- commerce, con- sumer, or media companies, such as Spotify (music and other audio) and Zalando (fashion and lifestyle)	Usually B2B SaaS <sup>1</sup> providers or fintechs, such as N26 (neo- banking) and Personio (HR software)	Generally companies that work on AI, hardware, bio- tech, or healthcare; Lilium (electric air-mobility service) and Graphcore (accelerators for AI and machine learning) are examples of deep-tech players
verticals,- %				
100	23Media and content68Marketplace	27 Media and content   71 E-commerce and consume	35Fintechor40B2B SaaS	16 Hardware   81 Biotech/ healthcare
Details	Network	Scale	Product	Deep-tech
	Require highest funding of all plays to subsidize early usage with an average fund- ing of €243 million compared with the €164 million across Europe's top 1,000 start-ups and scale-ups	Need to reach critical sales early on, which is reflected in highest average revenue being significantly higher: €826 million compared with €277 million for the top 1,000	Require least amount of funding— €145 million on aver- age—compared with other plays; product players focus on building strong vertical integration and high product innovations to gain lasting competitive advantage	Have low number of employees: 211 employees on average compared with 488 for the top 1,000; deep-tech start-ups first focus on and invest in R&D before increasing sales' head count to launch new products or services
Average employees, <sup>3</sup> number	982	890	418	211
	Average 40	0		

<sup>1</sup>Software as a service. <sup>2</sup>Based on number of companies in strategic play. <sup>3</sup>Last known full-time-equivalent count as of 2020.

#### Exhibit 4 (continued)

## Each of the four strategic plays has its own characteristics, with different types of companies that pursue them.



<sup>4</sup>Revenue data not available for all companies in top 1,000; figures based on subset. <sup>5</sup>Based on number of companies in top 1,000.

Source: Crunchbase; Dealroom; LinkedIn; PitchBook; McKinsey analysis

Our analysis suggests a range of five such critical factors are at work. For network players, it's crucial to win local markets one by one and not try to grow globally in one fell swoop. Scale plays need to overindex on building strong commercial capabilities. Both network and scale players benefit from M&A. Product-play companies need to prioritize a compelling product and narrow use case initially, while for deep-tech plays, attracting the best research and development talent is most important.

### Winning markets one by one: Network plays

As is often the case in other parts of the world, network effects can be global or local. The network effects in the sharing economy happen on a city and even neighborhood level, while the network effects from social-media companies are often more global. For example, brokerages can harness network effects across geographies, while businesses in the sharing economy or other locally-consumed services can benefit at the local level. Among the companies we studied, those that successfully pursue a network play make a trade-off between being right and being fast: they need to expand internationally to grow, but they first need to focus enough effort on individual markets to become the dominant local platform.

These types of companies tend to be marketplace, mobility, and social-media start-ups, such as Delivery Hero (online food delivery) and Tier (micromobility). They require an addressable market that is concentrated in a relatively small geographical area such as a city—a "hyperlocal" market. Because languages, cultures, and governments vary so widely among European cities, successful network-play start-ups enter these markets one by one, adapting their go-to-market strategy as they proceed, rather than all at once with a global approach as might be possible in a region with more uniform characteristics between cities.

This effect of winning market by market is visible in the experiences of shared e-scooter players, which operate in cities where there is really only room for a few competitors, and first movers do not always

19 Tier 27 55 40 Lime 23



Popularity of European electric-scooter companies, as measured by search



7

17

Paris

win. In numerous European cities, local competitors

its early start (Exhibit 5). For example, in Berlin, Lime

was able to provide the largest e-scooter fleet when

Google search interest) of 34 percent, beating Lime

(28 percent). So, adapting go-to-market strategies

to each new city is critical not only to winning at the

outset but also to maintaining a winning position. For

its part, Tier has found success by winning contracts

with local governments and other local publictransport companies to offer e-scooter services.

That focus can still be costly. To subsidize early

usage across a local market, network-focused

Exhibit 5

Voi

Bird

23

entering the market in 2019, with its unmatched global scale. A year later, however, Tier is leading the key market with an estimated share (based on

Tier and Voi have taken the lead over Lime despite

companies require the highest funding of all plays, with an average funding since founding of €243 million compared with €164 million for all of the top 1,000 companies we analyzed.

### Overindexing on commercial roles: Scale plays

Start-ups pursuing scale plays seek to win through rapid sales growth early on, relying on initial commercial success to create the economies of scale they need to dominate a market.

To achieve this early commercial success, outperforming scale start-ups invest more heavily in sales, marketing, and business-development roles. On average, these positions account for 42 percent



Stockholm

41

Note: Figures may not sum to 100%, because of rounding. 1McKinsey analysis based on Google search interest from January 2020 to December 2020 for the main e-scooter companies; Bird numbers include market share for Circ, which Bird acquired in 2020. Popularity was based on Google search interest for leading e-scooter companies per city in 2020 and leading e-scooter companies in Berlin 2019-20.

Source: Google; McKinsey analysis

Oslo

of all employees, compared with about 33 percent for the other strategic plays. To support sales, they have a stronger focus on operational roles (17 percent) compared with product (9 percent) and deep-tech plays (14 percent).

Overall, successful scale players tend to have the most employees—almost twice as many as product players and even three times as many as successful deep-tech players (Exhibit 6). At the same time, scale players typically focus less on product roles (28 percent) compared with about 40 percent for the other strategic plays. This is a reflection of the fact that success is generally achieved more through sales than through product differentiation.

The companies that pursue this play are frequently e-commerce, consumer, or media companies, such as Spotify (music and other audio) and Zalando (fashion and lifestyle). This is confirmed in scaleplay companies' average revenue since founding, which is the highest with &826 million compared with &277 million for companies in the top 1,000 companies we analyzed.

As scale companies mature, the relative size of their commercial functions decreases, resulting in the increased importance of other roles, particularly product and tech roles. In our sample of startups that are less than five years old, the share of commercial functions is 43 percent on average, which drops to 39 percent for start-ups that are six to ten years old, and 34 percent for older start-ups. A closer look at five of the most valuable European scale players (Farfetch, HelloFresh, Spotify, The Hut Group, and Zalando) shows this transition into product and tech roles: having matured to a degree, these scale players now have about 35 percent of their employees in commercial positions.

#### Exhibit 6

# The relative distribution of key employee roles at Europe's top tech start-ups varies between the four strategic plays.



Relative distribution of key roles by strategic play,<sup>1</sup>% of total employees

Note: Figures may not sum to 100%, because of rounding.

<sup>1</sup>Data not available for all companies in top 1,000; figures are based on subset of companies founded in 2015 or later.

<sup>2</sup>General and administrative. Source: LinkedIn; McKinsey analysis

# Expanding and consolidating with M&A: Network and scale plays

Companies pursuing either a network play or a scale play often rely more heavily on M&A to expand into new regions and consolidate markets, rather than launching in new markets on their own. This approach is especially effective for European startups, which need to enter more markets in more countries to attain an addressable market that is sizeable enough.

Network- and scale-play start-ups conduct between 1.6 and 1.9 deals across all funding rounds, which is twice as many as the average in our sample (Exhibit 7). By contrast, M&A activity among ventures pursuing a product play is below the average across the group, at 0.7 deals, and most start-ups going for a deep-tech play are unlikely to engage in M&A at all.

M&A provides the opportunity to accelerate growth and can entail arbitrage effects when a large successful start-up acquires a smaller start-up valued at a lower multiple. On the other hand, heavy M&A activity can turn out to be a costly distraction, especially for early-stage start-ups, effectively slowing their organic growth. In deciding how intensively to pursue M&A, the start-ups we studied consider organizational capacity and resources to integrate the acquired company.

## Starting with a stellar offering and a narrow use case: Product plays

Successful product players start with an outstanding product in a narrow use case before moving to a full-suite offering. Getting the product (and market fit) right early on is more important to these kinds of start-ups, and so their product and tech roles—R&D, engineering, product management, and IT, for example—have greater importance. At the same time, their focus on commercial and operational roles is much lower than for the other strategic plays. Product players are usually B2B software-as-a-service (SaaS) providers or fintechs such as Personio (HR software) and N26 (neobanking). We found that product players require the least amount of funding, with €145 million in

#### Exhibit 7

# Start-ups that are network and scale strategic plays pursue the most mergers and acquisitions.



Deals per start-up by strategic play, 2000-20, number (average)

Source: Crunchbase; McKinsey analysis

funding compared with €164 million on average for all of the companies we analyzed. They are also dominant in Europe, occupying about 45 percent of the region's top 1,000 tech start-ups.

These companies' emphasis on product excellence is also visible in Apple App Store ratings. Among a subset of companies whose apps are critical to the product experience, almost 35 percent of product-play companies have developed a toprated app, as compared with an average of around 30 percent for other plays. Product quality is also more closely associated with growth for product plays—product-play companies with an outstanding App Store rating grow 27 percent faster than their counterparts with lower-rated apps.<sup>1</sup>

With relatively limited resources initially, product-play start-ups focus intensely on both reaching adoption fast and providing a strong customer experience. To help achieve this, they often develop their initial product for a select, well-defined use case. This drives early usage as well as the collection of detailed customer feedback, which is essential for further product development and scaling-up to a larger customer base. For example, N26, the German neobank, focused on adoption early, offering only basic banking products such as current accounts and credit cards. Only later did the company expand its offering to adjacent categories. After attaining scale, it subsequently moved to higher-margin products, such as lending and investing. At that point, N26 was ready to explore partnerships with other fintechs, which helped to open up cross-sell opportunities.

### Winning with top research talent: Deep-tech plays

Deep-tech players tend to work on Al, hardware, biotech, or healthcare, and so they focus longer

and more intensively on exploratory research and development than companies pursuing other strategic plays. Lilium (electric air-mobility service) and Graphcore (accelerators for Al and machine learning) are examples. The companies in this group are characterized by a relatively low number of employees, with 211 employees on average, as compared with an average of 488 employees for the companies we analyzed. As expected, they have the highest (46 percent) share of employees in R&D roles; by comparison, productplay companies have 38 percent of employees in such roles, and the percentage is closer to 30 and 28 percent for network and scale plays, respectively. As a result, they receive on average 1.87 patents per year, significantly higher than product-play companies (0.19 patents per year), scale-play companies (0.21 patents per year), and network-play companies (0 patents per year).

One important way leading deep-tech start-ups separate themselves from the rest of the pack is by hiring the top research talent in Europe. On average, 27 percent of their hires come from the top 100 international universities, which is 51 percent above the average in our sample group (Exhibit 8).<sup>2</sup> Valuations also correlate to the quantity and caliber of the R&D team. In comparing deep-tech companies with similar funding, those with a higher share of top-tier researchers achieve 43 percent higher valuations than others (Exhibit 9).

Companies pursuing a deep-tech play require more extensive funding long before they become winners. As such, they need investors that have a similar long-term vision and willingness to fund a long R&D phase. For example, Lilium, which is developing vertical take-off and landing personal aircraft, has managed to attract large investment years before reaching commercialization.

<sup>&</sup>lt;sup>1</sup> We defined growth as addition of full-time-equivalent employees.

<sup>&</sup>lt;sup>2</sup>As defined in the Academic Ranking of World Universities (ARWU) 2020; "2020 Academic Ranking of World Universities," ShanghaiRanking Consultancy, August 2020, shanghairanking.com.

Deep-tech companies hire more talent from Europe's top 100 research universities. Employees hired from top 100 research universities by strategic play,<sup>1</sup>%



<sup>1</sup>As per the Academic Ranking of World Universities (ARWU) 2020 published by ShanghaiRanking Consultancy. Source: ARWU; LinkedIn; McKinsey analysis

#### Exhibit 9

Deep-tech companies' valuations correspond to the amount of talent they hire from Europe's top 100 research universities.

Deep-tech companies by share of employees from Europe's top 100 research universities<sup>1</sup>



<sup>1</sup>Academic Ranking of World Universities (ARWU) 2020 published by ShanghaiRanking Consultancy. Deep-tech players founded in 2010 or later.  $^{2}n = 66$ .  $^{3}n = 64$ .

Source: ARWU; Dealroom; LinkedIn; PitchBook; McKinsey analysis

# What it takes to build a European tech unicorn

In our analysis of the most successful European tech start-ups, we looked at the amount of time, funding, and revenues required to build a unicorn across each of the four strategic plays (Exhibits 10 and 11). *Time required.* Most of the companies we studied reached unicorn status within ten years of founding. Network and deep-tech players especially tend to reach unicorn status early, while significant shares of scale players (24 percent) and product players (31 percent) take more than ten years.

### Exhibit 10

# Most of Europe's top tech start-ups reach unicorn status within ten years, with some moving faster depending on their strategic play.



Time to reach valuation of €1 billion by strategic play, % in time slot

Note: Figures may not sum to 100%, because of rounding. Source: PitchBook deal data as of May 2021; McKinsey analysis

Most of the companies we studied reached unicorn status within ten years of founding. Network and deep-tech players especially tend to reach unicorn status early.

The funding and revenue required to reach unicorn status varies depending on the strategic play.



Median funding required to reach unicorn status by strategic play, € million

### Median revenue required to reach unicorn status by strategic play,<sup>1</sup> € million



<sup>1</sup>Revenue in the fiscal year prior to reaching unicorn status; value interpolated where data unavailable. Source: PitchBook deal data as of May 2021; McKinsey analysis

Source: PitchBook deal data as of May 2021; McKinsey analysis

*Funding required.* To reach a valuation of €1 billion, these companies, on average, required €100 million to €200 million in funding, implying a valuation of five to ten times the capital raised. However, this figure differs quite significantly among the strategic plays. Network and deep-tech players required the highest funding amount, approximately €200 million, to reach a valuation of four to six times the capital raised. Scale and product players required lower funding (approximately €80 million for scale players and €160 million for product players) to reach a valuation of ten to 12 times and five to seven times the capital raised, respectively.

Revenue required. We found a wide difference in typical revenue levels among the companies pursuing different strategic plays and reaching unicorn status. Scale players achieved approximately €200 million in revenue, implying a revenue multiple of four to six times their funding, followed by network and product plays, with approximately €50 million to €90 million in revenue at multiples of ten to 20 times funding. Deep-tech unicorns are the main outlier with typical revenue levels at about €8 million, implying a revenue multiple of 100 to 150 times, reflecting the massive promise of future revenue included in deep-tech valuations.

### About our research

To identify European tech champions, we

selected a sample of 1,000 tech companies founded after the year 2000, based on their valuations. Our sample includes companies from 33 European countries; among them, the United Kingdom is home to the most start-ups, with one-third of the sample, followed by Germany and France. The companies in our sample cover nine verticals: AI, B2B software as a service (SaaS), biotech and healthcare, e-commerce and consumer, fintech, IT hardware, marketplace, media and content, and mobility. Approximately 60 percent of the start-ups come from biotech, B2B SaaS, and fintech. We developed our data set in February 2021 from our proprietary integrated database that leverages sources such as Crunchbase, PitchBook, Dealroom, LinkedIn, and S&P Capital IQ. We then assessed these companies against the following 15 critical capabilities for scaling:

- Business model, which includes innovativeness and total market size
- *Tailwind*, which includes macro trends in favor of business
- Growth, which includes revenue growth rates from organic growth as well as from M&A activities
- Internationalization, which includes presence in and preparedness to enter foreign markets
- Speed of expansion, which includes the effectiveness of the sales force and marketing teams to address new segments rapidly
- *R&D intensity*, which includes the ability to innovate continuously and develop defensible competitive moats (intellectual property, for example)

- Offering, which includes the strength and maturity of the value proposition for the customer/user
- Tech architecture, which includes the agility of the front and back ends and data availability
- Scalability of operations, which includes efficiency of operational scale-up, including speed of processes and decision making
- Value creation, which includes the ability to leverage the ecosystem for partnerships, including partner management
- Founding team, which includes the mindset, educational and professional background, and role of founders
- Human resources, which includes attractiveness to top talent and retention
- Culture, which includes readiness of the organization for rapid growth (culture is learning-oriented and data-driven)
- *Funding,* which includes amount, sufficiency, and source
- Exit strategy, which includes readiness for IPO or sale

We then performed a quantitative analysis to validate our findings and a statistical analysis.

To confirm the strategic plays, we applied feature-selection techniques to define the key drivers for the different strategic plays, which resulted in 11 variables.<sup>1</sup> Clustervalidation techniques were applied using these variables to compare how similar a company is to its own cluster and to other clusters. This results in a silhouette score ranging between –1 and +1, which is a measure of how well a company fits into its strategic play. A positive silhouette score indicates that a company is well matched to its play and poorly matched to neighboring plays. Each of the plays has a positive silhouette score, with a mean of +0.14 for the full sample:

- Network-play silhouette score = +0.07
- Scale-play silhouette score = +0.09
- Product-play silhouette score = +0.15
- Deep-tech-play silhouette score = +0.19

Finally, a deep-learning algorithm was applied to reduce dimensionality and enable visualization of the strategic plays for the companies we analyzed.<sup>2</sup>

To confirm the statistical significance of the success criteria, we conducted a regression analysis<sup>3</sup> to determine the p-value. A p-value gives a measure of the probability that an observed difference could have occurred just by random chance. A p-value smaller than 0.05 (p < 0.05) is statistically significant and a p-value smaller than 0.001 (p < 0.001) is highly significant. The latter means that our findings have less than a one-in-a-thousand chance of being random. Where possible, we determined the p-value for the different success criteria:

- Network and scale plays expanding and consolidating with M&A: p-value < 0.001</li>
- Scale plays—overindexing on commercial roles: p-value = 0.063
- *Product plays:* not applicable (small sample size)
- Deep-tech plays—winning with top research talent: p-value < 0.001</li>

<sup>&</sup>lt;sup>1</sup>The variables we used are as follows: vertical; number of countries with office presence; number of employees; relative number of acquisitions per year; revenues; relative valuation growth per year; relative funding growth per year; share of roles (commercial, operational, product/tech); share of employees from top 100 universities; patents granted; and trademarks registered.

<sup>&</sup>lt;sup>2</sup>T-distributed stochastic neighbor embedding.

<sup>&</sup>lt;sup>3</sup> Logistic regression.



investors can use these findings to assess their own approach and identify quicker paths to success by concentrating their resources on the right targets. Understanding one's own product and approach within the context of these strategic plays and success factors can help organizations and players across the European start-up ecosystem follow in the footsteps of these European tech champions.

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