Start-up profiles: The Big Five

The VC Factor

VC-backed start-ups operate in a number of diverse sectors, across various geographic locations, and of course, they were a target of VC investments at different stages of their business development. All of this makes the analysis of VC-influenced growth a daunting task. Therefore, we need to step up our game and introduce a more sophisticated statistical approach.

Is there another way to look at start-up growth?

Multidimensional cluster analysis is a convenient analytical tool that groups start-ups according to common performance characteristics. For example, according to number of employees, turnover, total assets, intangible assets and operating costs. One way to define start-up performance based on these measures is the four-year compound annual growth rate (CAGR), starting from investment year. We could classify 93% of firms, that is, those still active in the fourth year after the VC investment. The rest, 7% of all start-ups, had defaulted by this point.

The cluster analysis suggests that there are five different kinds of European start-ups, some more prevalent than others. Named after their growth pattern, we find laggards, commoners, all-rounders, visionaries and superstars. Can you guess which one will get you the most bang for your buck? To find out, let’s have a look at each profile and their characteristics in the rest of the chapter.
Before we delve into the nitty-gritty of each profile, let’s line them up and compare their progress four years after the VC investment. Each profile is characterised by a different pattern of growth across our five key financial metrics. We find that, for example, laggards didn’t really advance much, in fact their business contracted. By contrast, the rest of the profiles’ growth rates are scattered throughout the positive domain, though with large variations. Just by comparing commoners and superstars, we clearly see why the latter have earned their name.

How do we classify start-ups by growth pattern?

Start-up growth is a complex, multi-faceted process. To study it thoroughly, we must evaluate it across multiple dimensions (turnover growth, staff growth, etc.). The goal of cluster analysis is to combine start-ups in such a way that between groups, companies would differ substantially in terms of growth trends and, at the same time, they would behave rather similarly within a given group. We use a model-based cluster analysis approach, which assumes that our growth rates data is sampled from a finite mixture distribution, i.e. a collection of (hidden) “sub-populations,” each characterised by their own multivariate normal distribution. This approach is also called latent class analysis. By the way, how should we measure growth? Our choice to use the CAGR incorporates the view that start-up growth, like many other natural phenomena, should be evaluated on an exponential scale (rather than on the basis of a linear scale). See Appendix B for additional details on our approach.

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<th>Laggards</th>
<th>Commoners</th>
<th>All-rounders</th>
<th>Visionaries</th>
<th>Superstars</th>
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<td>Costs</td>
<td>-38%</td>
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The five start-up profiles and their average growth rates
Laggards

“Honey, I shrunk the start-up”

Laggards are the underperforming firms, but fortunately only 3% of start-ups fall into this category, making it the smallest one. Four years after the VC investment, laggards are characterised by negative growth in all financial indicators. They lost half of their staff and about 40% of their turnover. Their intangible assets as well as costs contracted by around a third. Total assets decreased slightly less than the intangibles – by 24%.

Start-ups in the manufacturing sector had a relatively higher probability of underperforming, whereas firms in services stood a lower chance. The laggards group also reveals large regional divergence – DACH firms were less likely to go under, as opposed to those in the British Isles, Benelux, Sweden and Portugal. There were also more underperforming start-ups in the five-to-ten-years-old age group relative to younger or older groups. Proportionally, more laggard firms were invested in 2007 compared to the following years: businesses kick-started immediately before the financial downturn suddenly had to navigate through very rough waters, which may have contributed to their untimely downfall.

Four-year average growth rates

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More and less likely to be found in... *

*Locations of higher/lower concentration of laggards compared to their overall share.
In places with "No strong evidence", the concentration does not significantly deviate from the overall share in the EU VC ecosystem.
Commoners

Four-year average growth rates

“The good, the bad and the...ordinary”

The commoners group is the most numerous, representing 56% of start-ups, whose growth is best characterised as “mild”. Commoner start-ups record positive but sluggish growth rates across all financial indicators. Their workforce increased by 6% while total assets slightly less, by 5%. Turnover recorded the highest growth rate (20%) across all indicators, followed by costs (11%). Commoners are not particularly innovative as evidenced by the intangible assets growth - only 1% on average.

ICT start-ups were the least likely to grow mildly as opposed to firms operating in the services industry, which had the highest probability of following a mild growth trend. Later-stage ventures stood a higher chance of becoming commoners in comparison to seed and start-up firms. Region-wise, firms operating in Germany were relatively more likely to enter this group compared to the rest of Europe. Overall, most commoner start-ups were distributed evenly in the rest of the regions. Young start-ups (two years old or younger at investment date) were the least likely to fall in this profile, while the opposite was true for firms older than five years. Start-ups also had an equal chance of growing mildly across different investment years.

*Locations of higher/lower concentration of commoners compared to their overall share. In places with “No strong evidence”, the concentration does not significantly deviate from the overall share in the EU VC ecosystem.
All-rounders represent 19% of all companies—the second-largest group after the commoners. All-rounders were certainly more innovative than commoners (intangible assets increased by 39%) and what is more, their turnover soared by 141% against an increase in costs by 65%. In the same time, staff as well as total assets grew by around 50%. Therefore, the most fitting way to describe this profile’s growth would be “balanced”.

Start-ups from different sectors had a comparable probability of ending up in the all-rounders group, with ICT a bit more and services and manufacturing a bit less represented. Later-stage ventures were less likely to fall in this profile in comparison to early-stage ventures. Across regions, start-ups in the British Isles as well as in some areas of Germany, particularly in the northern and western part of the country, had a higher chance of following a balanced growth path. In contrast, firms in other parts of Germany as well as Hungary were less likely to experience balanced growth. With respect to age, there was a greater number of young firms in this profile than older firms, and the probability of investing in all-rounder start-ups increased after 2010.

*Locations of higher/lower concentration of all-rounders compared to their overall share. In places with “No strong evidence”, the concentration does not significantly deviate from the overall share in the EU VC ecosystem.
Visionaries are by far the most innovative firms in the bunch and include 7% of all start-ups. They boast the highest growth rate in intangible assets – an astounding 534% over four years. Visionaries also performed relatively well in other indicators, ranking as the third best profile in most of them. Their turnover grew by almost 40% on average, while costs by 30%. Total assets and staff also increased by respectively 32% and 23%.

Interestingly, there were more visionary start-ups in the manufacturing sector than in any other. There were also fewer seed-stage firms in this group than from the rest of the stages. Poland, Latvia and Denmark hosted relatively higher share of innovative companies. The British Isles, however, recorded the highest number as opposed to DACH, which had the fewest. This result could be linked to the previous finding that there were relatively more laggards in the British Isles than DACH: if British Isles companies take on relatively more risk on average, they are expected to be more innovative but also to fail more often.

Firms aged two to five years were the most likely to end up among the visionaries while the youngest start-ups (two years old or younger at investment date), the least.
What happens when everything goes according to (business) plan? Superstars include 8% of all firms and their most remarkable feature are their sales results. They recorded an impressive growth of 358% in operating revenue compared to a 157% growth in costs. At the same time, superstar(t-up)s more than doubled their staff and total assets. This profile achieved the highest growth rates after four years in almost all indicators but intangible assets, which still grew at a considerable 340%.

Two-year-old start-ups or younger at investment date are over-represented in this profile while all other age groups were less likely to become superstars. With respect to the investment year, there were relatively more superstars backed in 2011 to 2013. ICT firms had on average 17% higher chance of explosive sales growth than the rest of the sectors. Later-stage ventures were less likely to become superstars than their seed and start-up counterparts. There are some regional differences as well, with relatively more firms operating in Austria, Poland and Denmark and fewer in the British Isles and Benelux.

*Locations of higher/lower concentration of superstars compared to their overall share. In places with ”No strong evidence”, the concentration does not significantly deviate from the overall share in the EU VC ecosystem.
What happens to start-ups after two years of growth?

Looking at start-up growth two years instead of four years after the VC investment does not result in major differences across start-up profiles. Most companies stick to the same group anyway. The commoners is the most stable profile, with almost 82% of firms remaining after four years as well. They are also the group most start-ups gravitate towards, particularly from the laggards profile - 53%. Laggards are also the companies with the highest probability of defaulting - 29%. However, relatively few start-ups (from any given profile) default before their fourth post-investment year.

...two years later

We see more defaults between four and six years of growth than between two and four years. Why? Well, it’s a question of fund life. In line with other studies, we find that most VC investors stick to their invested companies for at least four years - resulting in only 7% of defaulted start-ups at year four. After that, under-performing investments tend to be written off, resulting in 10% default rate by year six. Naturally, laggard companies are still the most likely to default, with more than 20% of firms sharing this fate. Conversely, superstars are the least likely to go bust.

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The commoners emerge as the most stable profile after six years as well, with 87% of companies maintaining their status. If there were only two groups, under-achievers (laggards and commoners) and high-achievers (all-rounders, visionaries and superstars), it would be more likely for an achieving start-up to switch to a non-achieving profile than vice-versa. At the same time, “big jumps” are very rare, i.e. almost no under-achieving start-up moves to a very successful profile or the opposite. Superstar firms turn out to be the most resilient, as they are the most likely to remain within a high-achieving group.
A recap of the five start-up profiles and their average growth rates

But what really was the role of VC?

The five profiles do a fine job at summarising the different types of VC-backed start-ups in the European ecosystem, as measured by the growth they experience after investment. But where is the "VC factor"? In other words, would start-ups not backed by VC firms (VCs) experience similar trajectories of growth? And if so, are there differences in the actual growth rates? To answer these questions and uncover the true "VC factor", it’s time to bring into our analysis a new class of start-ups: those not backed by VC.
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