

Can the Entrepreneurial Spirit of Academic Inventors and the Competitive Advantage of the Region Enable the Growth of Academic Spin-Offs?

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Science commercialization has always been an important driver to stimulate the economic development and innovation activity across industries and nations. In this regard, academic spin-offs (in the following: ASOs) are an important vehicle to transfer a scientific invention from the university into the market. For instance, the German-based ASO BioNTech, which produces the vaccine together with Pfizer, has not only prevented the worst case scenario during the COVID-19 pandemic but also generated average sales revenues up to \$15bn in *post-pandemic* phases. Clearly this shows a very exceptional case and the truth about ASOs is that only a handful of ASOs are capable of generating high returns. Indeed, to date many ASOs stagnate and rather remain *life-style* companies. But what exactly determines the success of ASO?

First and foremost, the role of the academic founder is crucial in shaping the future path of the spin-off firm. In the case of BioNTech, the founder and CEO Uğur Şahin - together with his wife Özlem Türeci- has proven that academic scientists can also become successful entrepreneurs. Yet, the majority of academics simply lacks the commercial mindset which is needed to turn the academic invention into a scalable business model. In that regard, the region can complement the knowledge gap of ASOs. In line with Michael Porter's school of thought, the *competitive advantage* of a region has serious consequences for the future prospects of ASOs. Relevant regional resources such as local accelerator programs, a strong industry base - from which potential customers and suppliers can be formed - as well as legal and financial expertise can support the ASO along the technology transfer process.

But how important are the effects of both the firm and the region for the performance of ASOs? In our study we tried to find an answer to that question and examined more than 3,000 ASOs from 99 regions out of 10 European countries. So what exactly did we find out? First, the results of our study suggest that the effect of the firm explains most of the variation in ASOs. In other words, decision on the firm-level - including those of the CEO and other majority shareholders such as VCs- are deemed to be essential drivers of ASO's success. This finding is in line with other studies trying to better understand the determinants of firm performance. Second, our results indicate that the region, in which the ASO is situated, explains a fair share in the variation of ASO performance. This is especially true for the sales indicators *ROA* and *Sales Growth* pointing to relevancy of the regional context in translating research results into the market, and generating sales and profits out of them.

In a nutshell, the implications of our study show that academic entrepreneurs can offset the lack of commercial knowledge by reaching out to regional stakeholders. Yet, the barrier for ASOs to enter new or established markets is high. Hence, we strongly encourage academic entrepreneurs to follow a certain strategy:

1. Get in touch with the local start-up ecosystem to connect with potential business partners, legal advisors, and external investors. If your ASO is at a very early-stage of development, it is advisable to join an incubator program in order to increase the firm's visibility to the external world.
2. Escape the academia bubble. Be open to new ideas and changes in your business model.

Be prepared to decrease ties with your parent organization and establish new ties with external stakeholders.

3. Recognize the potential and expertise of both academic and non-academic stakeholders. While the former ones may act as scientific advisors the latter ones should function as board of directors to share their managerial and commercial knowledge that can enable firm growth.

Clearly, these suggestions are not only relevant for academic entrepreneurs but might also be helpful for local entrepreneurs and intrapreneurs from large corporations to stimulate the entrepreneurial spirit of a region.

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