Venture Capital in Europe

Creating an innovation ecosystem for life science

Europe is home to one third of the top 50 life science universities and in 2019, was the source of more life science publications than the US, albeit with a similar number of articles in the top 10 journals. However despite the quality of the research, Europe produces 0.29 times fewer patents than the US and has less venture financing available by a factor of five.[1] Nonetheless, Europe is observing an increase in venture capital (VC) funding as well as a sprouting of programmes, grants, and incubators supporting translational research. Simultaneously, several VCs have adopted a model by which new companies are founded and built internally. We suggest that this model can significantly impact the translational efforts of European life sciences research and in turn, contribute to building a successful innovation ecosystem.

The traditional idea of company creation built solely on the shoulders of an entrepreneurial scientist is slowly changing. The successful translation of novel scientific breakthroughs requires a broader perspective as well as expertise in pharmaceutical drug development and strategy. Factors such as the design of experiments, clinical development and product differentiation, commercial strategy and building the right team can play a crucial role in the success or failure of a biotech startup. VCs are uniquely positioned to help address many of these issues due to their accumulated experience as well as their vast network of domain experts. From a return-on-investment perspective, venture creators can potentially benefit from higher returns since they can take significant ownership of new companies as founders, and then continue to fund them.

Several US VCs including, among others, Atlas Venture, Third Rock Ventures, and Flagship Pioneering pioneered the current venture creation model (Table 1). Over the years, these firms, and others, have built companies from bold ideas, novel scientific breakthroughs, and collaborative scientific work performed by key opinion leaders in respective scientific areas. At its core, the model focuses on identifying novel breakthroughs, generating new concepts, developing and testing hypotheses with key experiments, and forming a holistic view around the scientific, clinical, and commercial dimensions of an asset.

Several European VCs have adopted this venture creation model (Table 2) either as a core activity or as an additional investment strategy.

In adopting this model, the VC often makes a strategic choice about whether to build an asset- or a platform-centric company. Asset-centric approaches rely on a specific asset, either a novel target or a biological insight developed by an academic group, or a therapeutic agent spun out from an existing biotech company. Asset-centric approaches are less resource intensive than platform-centric approaches but may have less potential for a lucrative exit. Platform-centric approaches typically require more time to develop and generate value, but may also have more transformative potential across many therapeutic indications. While some VCs strategically prioritise one approach over the other, the choice usually involves a careful assessment of the risk-reward ratio versus the resources required to develop the asset or assets, as well as the diversification of the fund's portfolio.

In most cases, early-stage company creation is a virtual effort. The team and tasks may be geographically spread-out with outsourced experiments performed by academic groups and contract research organisations (CROs) where the respective expertise and capabilities are. Partnerships with research groups at different universities are key for early hypothesis testing and access to field-specific expertise. However, some VCs prefer in-house experimental work as an alternative approach to outsourcing. Versant Ventures, a US VC with presence in Europe, built "discovery engines" in different geographic locations. The latest discovery engine –

Table 1 – Venture creation model behind Atlas Venture, Flagship Pioneering, and Third Rock Ventures. Data sourced from the respective VC websites.

VC	Model	Entrepreneur in residence	Example of company creation
Atlas Venture	***Discover*** Identify breakthrough science ***De-risk*** Validation and maturation of projects ***Shape*** Develop a business strategy ***Strengthen*** Hands-on work	Large group of EiRs co-located in Cambridge, US to help launch companies	Arkuda Therapeutics
Flagship Pioneering	***Explorations*** Hypothesis generation on novel concepts ***ProtoCos*** Validation and testing of concepts ***NewCos*** Significant capital, continued scientific and team development ***GrowthCos*** Attracting outside investors	In-house team of company creation	Tessera Therapeutics
Third Rock Ventures	***Discover*** Identify breakthrough science ***Launch*** Company development on all fronts with interim roles ***Build*** Transition of team and continued development ***Transform*** Bringing products to patients	Group of EiRs	MOMA Therapeutics

Ridgeline – is based in Switzerland and includes an experienced R&D team with laboratory space. In contrast, BioGeneration Ventures, a Dutch VC, builds companies under a more virtual model. Whereas in-house wet lab facilities and personnel allows building expertise in specific areas and faster hypothesis testing, outsourcing may be less resource intensive and flexible.

Virtual companies strongly benefit from experienced entrepreneurs to drive them forward. In VCs these are often led by venture partners or entrepreneurs-in-residence (EiRs). EiRs are typically repeat entrepreneurs and former CEOs who bring a wealth of experience to help drive several company creation projects in parallel. The availability of qualified and experienced talent is of special importance in the early stages of company creation and strategic development. Several US and European venture creators employ EiRs to help launch new companies. As a European example, Novo Seeds engages with serial entrepreneurs for early-stage company creation through its EiR team BiOrigin.

Table 2 – A few examples of European VCs with venture creation initiatives.

Venture Capital firm	EU Location	Model	Example of company creation
Advent France Biotechnology	France	"Scout, Build, Develop" approach. Sourcing innovations and co-founding new companies with scientific founders. Partner with entrepreneurs and help build a management team.	Augustine Therapeutics
BioGeneration Ventures	Netherlands	EiRs and virtual model. Seeking differentiated innovation and shaping/ building the company with the founders.	VarmX
Medicxci	UK	Asset-centric approach. Help and support setting up virtual asset-centric companies. "The Foundation Institute" initiative as an idea factory.	Morphogen IX
Novo Seeds	Denmark	Innovation ecosystem approach. Building new biotech companies from scientific breakthroughs aided by experienced EiRs.	Galecto biotech NMD pharma
V-Bio Ventures	Belgium	Finding, building and financing new companies. Providing interim management until significant fundraising.	Augustine Therapeutics
Versant Ventures	Switzerland	Ridgeline discovery engine with R&D team and wet lab space.	Monte Rosa Therapeutics

The ecosystem approach

Novo Seeds is the early-stage company creation team of Novo Holdings A/S. Its venture creation model has led to multiple company creation projects primarily within the Nordic region. Over the past decade, Novo Seeds has built a pipeline of new companies through the identification of novel scientific breakthroughs and pre-seed financing. Different elements of the ecosystem are conducive to new company creation, from the Novo Nordisk Foundation, to the BioInnovation Institute and Novo Seeds. The Foundation provides significant grants to academic groups fostering basic research, which are crucial to develop and cement the understanding of biologic mechanisms. BioInnovation – a Foundation initiative – offers funding opportunities for company incubation and maturation, together with wet lab access. Novo Seeds builds, finances and supports new companies through the different stages of development. Novo Holdings also finances new VC funds to further support and strengthen the ecosystem. This is of special importance in Europe where the volume of VC funding is substantially smaller than in the US. Together, these groups build an integrated innovation ecosystem where novel ideas can be developed by academic groups, translated with the help of BioInnovation and Novo Seeds and further financed and supported by Novo Seeds in the following stages of company development. Such an integrated approach fosters novel science, attracts talent and ideas, while ultimately contributing to fighting diseases.

As the number of programmes, grants, incubators, and VCs increase in Europe, we would like to see the continued deployment of talent, and an increase in venture creation efforts. This can be done while building integrated innovation ecosystems. The ecosystems can take several forms, from virtual efforts to connect geographically separate initiatives, to more concentrated hubs of resources and expertise such as those in Copenhagen, Denmark. Either approach could connect programmes supporting basic, translational and company creation efforts in a more seamless way, driving projects continuously. An approach such as this in Europe will translate more scientific discoveries into high quality biotech companies and capitalise on the quality of European research.

Reference:

Biotech in Europe: A Strong foundation for growth and innovation, April 2019, Franck le Deu and Jorge Santos da Silva.

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