

Financing biotech ventures in Scandinavia

Scandinavia's Medicon Valley is experiencing a spurt of funding, prompted by a combination of government and private capital.

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Obtaining sufficient capital resources for the initial financing of biotech startup companies is essential for a nascent venture's long-term success. For example, recruitment of the best researchers, an expensive proposition, is critical for establishing a necessary top-quality research program if a company is to have a shot at success. Furthermore, significant financial resources are needed to assure that researchers have sufficient funding to pursue their ideas for a prolonged period of time. This is crucial for optimizing the research and developmental output of a biotech startup.

In Scandinavia, where biotech is undergoing a sudden spurt of support, this requirement for capital is magnified by the fact that European investors have a longer time horizon for success. This means there must be an upfront commitment for larger pools of capital than if investors were merely looking for a quick return on their investment. Yet despite these caveats, venture funding is increasingly available for the initial financing of biotech ventures in the Medicon Valley of Scandinavia.

Public sources of finance

Several sources are available for the initial financing of biotech startups in Scandinavia. Typically, the idea for a company comes from research performed in academia, which is funded by local grants and government programs. The funding for research at this level is on the order of \$10,000 to \$20,000 per year. This financing is strictly noncommercial, and often the grantor of these funds demands a clearly defined barrier between the publicly funded and commercial aspects of a project. Recently, academic institutions and funding agencies in Scandinavia have begun including provisions for "pay-back" financing or

"forced patenting," requiring researchers to take the steps necessary to establish the intellectual property rights that develop from publicly funded research. As an incentive, an inventor can receive \$30,000 to \$40,000 in additional funding in exchange for patenting his or her work. The inventor also stands to receive approximately 30% of any future patent royalties.

Another initial source of capital in Scandinavia are the so-called business angels—informed capitalists who as individuals have the capital resources to make a pri-

and the proof of concept studies necessary to seek further financing from larger private venture sources. At these sites, projects can quickly—over weeks to months—gather enough evidence to prove to the prospective venture capitalist that the work is supportable and the developmental risk is proportionally low. Sites of innovation provide both initial funding, typically \$40,000 to \$50,000, and laboratory space and equipment to the entrepreneur at a favorable price. In exchange, the sites often demand part ownership of the startup, typically in the range of 5–20%.

Table 1. European funding information on the Internet.

European Commission—DG III—Biotechnology	http://europa.eu.int/comm/dg03/publicat/bio/index0.htm
Community Research and Development Information Service (CORDIS)	http://www.cordis.lu/src/s_016_en.htm
GrantsNet—AAAS	http://www.grantsnet.org
Investorlink	http://www.investorlinks.com/service-venture-directory.html
The Danish Growth Fund	http://www.vaekstfonden.dk
Sites of Innovation (DTI Innovation)	http://evu.dti.dk/forsker.htm
Medicon Valley Academy	http://www.mva.dk
Copenhagen Capacity	http://www.copcap.dk

ate investment in a startup venture. Often, however, the business angel's most important contribution is knowledge, or intellectual capital, because most were themselves entrepreneurs who successfully started their own firms. This experience and know-how is invaluable for a startup to surmount the many hurdles to becoming self-sustaining and profitable. Table 1 lists several sources of information on locating potential angels.

Another growing source of initial financing in Scandinavia derives from so-called sites of innovation, or incubators. These organizations, funded by a mix of private and public monies, administer research and development facilities and basic research equipment for a diverse collection of entrepreneurial projects.

They typically fund initial basic research

Private venture capital: due diligence

During the first half of the 1990s, the worldwide financial community recognized the high risk involved in funding biotechnology business ventures, particularly in the US and the UK. As a result, available private venture capital more or less evaporated. During this time, the biotechnology venture capitalist was educated, sometimes painfully, about the specific properties an investor should demand of biotech projects. It was recognized that a thorough and specialized process of due diligence was necessary to decrease the risk of investing in low-potential, high-risk biotech ventures.

This process of due diligence demanded specialist knowledge about basic scientific research evidence, the clinical application of basic scientific results, and development and

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marketing of biomedical products in a larger pharmaceutical company setting. As very few venture capitalists had this background, they kept their investments away from the biotech market for several years. Many biotech project entrepreneurs, therefore, still find the step of going from the incubator environment to the venture capitalist investment the largest hurdle to becoming a biotech company.

The amount of initial investment from a single biotech venture capitalist typically does not exceed \$6 million. The issue of quickly resolving patent applications and proof of concepts demands a swift initial investment followed by a larger investment. This implies that a lead investor injects a small amount of capital to assure the synergy of the patent portfolio, the scientific results, and the research and management teams.

Thereafter, both to diversify risk but also to increase the long-term relationships

Pharmaceutical alliances are often seen as the Holy Grail for a startup venture.

between investment houses, venture capitalists often syndicate in biotech investments over a longer range of time. Short-term refinancing of biotech projects is not an optimal approach, as the entrepreneur has to attract funds on a competitive basis in each period.

An efficient solution can only be achieved through a long-term contract that allows for inter-temporal risk sharing. Another word for this is staged financing, whereby specific milestones have to be satisfied before a refinancing of the projects by the same group of investors is to occur. In this way, the funds will be allocated by the entrepreneur as intended, regardless of how the funds are provided over time.

Scandinavian countries have recognized the need for government-supplied capital resources for startup companies. In Denmark, the government sponsored fund is named VækstFonden, and in Sweden the name is Industrifonden. They typically operate as adjuncts to the venture capitalist, in that they supply approximately 30–50% of the total initial investment. This capital is supplied as a loan to the entrepreneur at a favorable rate (5–10%) and does not demand equity. In addition, loan payback is deferred or forgiven if the project does not meet its stated goals. Other countries have similar same organizations (see Table 1).

To diversify the risks inherent to these

projects, the entrepreneur can commit to alliances with either academic research laboratories or with pharmaceutical companies. In the academic alliance, the goal is to have a research problem guided by an expert in the basic scientific area, with the actual research done by a PhD in the laboratory of the expert. An added benefit is that the often-expensive equipment needed for such research is already at the site. Thus, expenses are kept low while many possible ways for reaching the goal are studied, tried, and either adopted or abandoned by the biotech company. This method is widely used in Europe, where even small biotech companies fund an academic research program, thereby typically acquiring ownership of the patents from the research. One such example is Bavarian Nordic, a Danish-German biotech company upholding extensive collaborative alliances with research institutions in Munich.

Pharmaceutical alliances are often seen as the Holy Grail for a startup venture, in that they validate the young company and demand strict adherence to a certain strategy demanded by the pharmaceutical company. Though often seen as a panacea, biotech companies should be careful not to wed their personnel and intellectual property to a strategy of research difficult to abandon if the strategy seems unprofitable. It is often wise for the biotech company to keep as much research in-house, or at least out-license specific tasks to other smaller biotech companies, thus increasing the value of the company. This is more true in Europe than in the US, where many biotech companies may give away shares of the company (long-run upside potential) for a larger capital resource alliance with a larger pharmaceutical company (short-run upside potential).

Eventually, the prospect of taking a company public faces every entrepreneur. The entrepreneur sees this as another way to acquire the financing needed to grow and develop the company, while the venture capitalist sees the initial public offering as the endpoint of their venture participation, allowing them to cash out of their initial investments, i.e., the exit strategy. This is of course the same case in Europe.

Conclusions

The European financial setting might be tough to penetrate for a startup biotech candidate, and as situation that is detrimental to the many possible early projects needing venture capital financing in the short run. But this hardship in the race for capital resources will probably select for the best biotech projects in the long run, with the lowest risk of failure joined together with the best profile of yields. ///