Jens Nielsen – CEO, BioInnovation Institute (BII), Denmark



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The BioInnovation Institute (BII) is an initiative from the Novo Nordisk Foundation which aims to support entrepreneurial researchers and early-stage life science start-ups with up to DKK 18 million in founder-friendly funding. CEO Jens Nielsen highlights some of the BII's milestones and success stories since its formation and Denmark's progress towards becoming a globally competitive life sciences innovation hub.

Can you begin by introducing yourself and the BioInnovation Institute (BII)?

My academic background is in chemical and biochemical engineering. I remained in academia after my PhD to continue research, working as a professor at the Technical University of Denmark for more than 10 years and founding a large research centre with a focus on microbial biotechnology.

In 2008, the Chalmers University of Technology in Gothenburg, Sweden recruited me to build up life sciences activities at the university. At the same time, I expanded the focus of my research to include metabolism and helped build large research activities in systems biology. I remained in Sweden for over 10 years and still have a part-time affiliation with the university.

Collaborating with industry has always interested me. I have been entrepreneurially engaged and have started six companies from my research groups, most of which are still thriving in various

areas.

This background in science, entrepreneurship, and collaboration with private companies led to me joining the BII as CEO. This is an initiative from the Novo Nordisk Foundation with almost half a billion euros in funding over the next 10 years to support early-stage life science innovation.

What led to the decision to separate the BII from under the Novo Nordisk Foundation?

The BII started in 2018 under the Novo Nordisk Foundation, however, at the beginning of 2021, it was separated as an independent non-profit institute that receives funding from the Foundation.

The decision to become independent from the Novo Nordisk Foundation was to allow for alternative business models for financing in the long term. Furthermore, while the affiliation with the Novo Nordisk Foundation group has its benefits, particularly in Denmark due to its power and influence, it can be a preventative factor when looking to collaborate with others.

Looking at the past few years, what milestones have been achieved so far?

Since 2018, approximately 45 companies have been taken through the BII's program and these companies have raised nearly 130 million euros in capital either through investments or soft funding from various granting agencies in the EU and Denmark. This figure is approximately fourfold the amount these companies have been given by the BII. This achievement demonstrates that the relatively small amount of capital, in combination with the network, infrastructure, knowledge, and help provided by the institute, attracts further investment to these businesses and accelerates their growth.

What are the criteria used by the BII for choosing research projects?

The BII covers all three verticals in life sciences from novel pharmaceuticals, to health tech solutions, to the bio-industrial space. The bio-industrial space specifically is demonstrating significant growth due to the green transformation, novel foods, and plant-based foods with new ingredients.

The criteria that the BII seeks are businesses that are built on excellent science as it enables the company to pivot and find potential markets as its project advances.

Furthermore, the potential market for the technology needs to exist to attract further investment and grow the business. Finally, the company's team needs to be extremely capable from the beginning; however, the Institute can help build that team for them. These three factors for success based on the science, market, and team are the primary concerns for investors.

What is the formula that works when matching entrepreneurs with researchers to build these teams?

There is not necessarily a perfect formula for this team building as it is difficult to engineer and control this matchmaking. It is predominantly based on the chemistry between the entrepreneurs and the scientists interested in entrepreneurship that will make these partnerships work in the long term.

However, there is an element of educating, particularly the scientists, to pass the science and knowledge onto the entrepreneurs that will work to sell that science and attract financing to convert it into products. Scientists must understand that this is the best process to remain involved in the journey of this science. From this, they can learn from the science and product's progression, maintain their positions at the university and continue to do research to build other companies. In this regard, the BII's educating role is important to provide examples of best practices for these partnerships between scientists and entrepreneurs.

Could you highlight some of the main support services that you provide to your startups?

Firstly, the BII provides infrastructure with fully-functioning labs for companies to use and begin experimenting from day one. This separates the Institute from other incubators that rent the lab space to companies and the startups need to provide their own equipment.

Secondly, business developers are affiliated with each company and provide a mentoring role to build the case and provide guidance on networking.

Finally, the BII is associated with several scientists, investors, and people in industry. The Institute is well-connected to experts in companies across Denmark, and the BII hosts regular sessions for companies to pitch their company to investors.

This process has become easier with Zoom meetings. In two-hour sessions, investors listen to the pitches, provide feedback to the companies, and consolidate the contact between the business and potential investors.

What would you say is the goal of many of your startups? Is it to be acquired?

I believe this trend of pharmaceutical companies buying startups will continue to a large extent. These buyouts grow the biotechnology ecosystem with large pharmaceutical companies sourcing their growth and diversification from small biotech startups.

However, big pharmaceutical companies that purchase a company are only buying the asset and not necessarily the value provided by the people. The movement of a business' talent is more difficult, particularly if the employees are built into the core competencies of the company.

As a result, if a sufficiently large ecosystem is built here in Copenhagen, I believe big pharmaceutical companies will begin to settle in the area due to assets being purchased at a higher frequency and access to the ecosystem's talent. This has occurred in Boston with companies migrating to the city over the last 20 years. While Copenhagen cannot be directly compared to Boston, the concept remains of becoming a European hub and destination to build companies that will further strengthen the local pharmaceutical ecosystem.

How can Denmark compete with bigger innovation hubs such as Boston and Cambridge?

It is hard to compete due to the intensity of these environments in regard to research. However, looking at statistics such as per capita, Denmark stands out as a strong environment for life science research.

The larger companies in the area are able to provide the expertise and competencies for early-stage startups that require strategies for drug development from experienced individuals.

Consequently, a strong pharmaceutical industry is required to indirectly support these competencies of drug development and clinical trials. In my opinion, Copenhagen has these elements to become a key pillar in the global life science environment.

Additionally, partnerships across Medicon Valley into Sweden could include Lund University, one of the largest universities in Europe, as well as the University of Copenhagen and the Technical

University of Denmark. In this way, we can become more comparable in terms of volume with the Greater Boston area.

What is the international ambition of the BII? Can the model be replicated in foreign countries?

The BII has offerings such as Venture Lab, a 12-month acceleration program built to enable scale and distribution, which could be replicated in other countries. Companies could follow the same program in different geographic locations and be considered the same cohort while collaborating and exchanging ideas. This is a future possibility that would require the right partner and further financing.

Do you have a particular example that you would like to share of a successful startup or program that has received funding from the BII?

Twelve Bio is a company out of the University of Copenhagen with new CRISPR technology for genome editing technology. We helped them begin to identify the business opportunity for their excellent science and strong IP positioning. The company committed to both Venture Lab and Creation House, another of our programs, to define the strategy and were the first company to attract a foreign investor as the only investor.

This proves the Institute’s model works with a foreign investor trusting that the BII has correctly vetted and built the companies in its program. The BII can be proud of increasing the attraction of international capital with TwelveBio now expanding and seeking the next round of financing.

Another company, Chromologics, in the bio-industrial space, uses a fungus to produce a special colorant. Through the program, Chromologics managed to find its niche market to focus on. This company was started by a young researcher in academia that had to be trained as an entrepreneur and has now raised approximately three million euros in financing.

While this figure is lower than that of some of the best-known success stories in the pharmaceutical space, it is a good example of a young scientist converting into an entrepreneur through the help of the BII.

What are the strengths of Danish innovation and what keeps you excited about the future?

Scientists from across Europe have applied to our program and want to move here. We have a fantastic offering in the sense of expanding the ecosystem in Denmark and the rest of Europe. My goal is for Europe to become better at translating research and science into products for the benefit of human society.

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