Dennis Hens – CEO, Bulbitech

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18.11.2020

Tags: Norway, Bulbitech, Medtech, Ophthalmology

Dennis Hens, the Dutch CEO of Norwegian neuro-opthalmology device player Bulbitech, outlines the company's journey to market, how its technology can support both optometrists and neurologists in their work, and gives an overview of the investment landscape for innovative medtech in Norway.

Can you begin by introducing yourself and Bulbitech?

I have a predominantly business background, having worked for pharma firm GSK, a large health insurance provider, and at a family office in my native Netherlands before joining Bulbitech as CEO 18 months ago. Bulbitech occupies a unique niche: detecting neuro-ophthalmic disorders early through its eye tracking technology

How does your experience working in different sectors help you in your current role?

A lot! When I joined Bulbitech, the company was in the R&D stage, with two separate value propositions – hardware and software – and was very confused as to how to present itself to the outside world. Therefore, I decided to unite these two value propositions in terms of branding and marketing.

My time at GSK, which of course specialises in pharmaceutical products, was useful in this process, and my experience in health insurance gave me some insight into the reimbursement codes that exist for the kind of technology that we develop and how it fits in the ophthalmic/optometry landscape. Finally, in terms of investor readiness, my background in investing for the family office helped me to set the steps in the right direction that the company needed to take.

What have been the major milestones in Bulbitech's history?

When I joined in 2019, the company was producing prototypes at a technology readiness level (TRL) of four or five [TRL one and two being basic clinical research and TRL eight and nine being system test, launch and operations – Ed.]. Therefore, I emphasised the importance of getting these prototypes to potential clinical users. We are now partnering with several specialised eye hospitals in Norway and have ongoing clinical testing at Sankara Nethralaya Eye Hospital in India, allowing us to quickly gather feedback on both our hardware and software.

One of my main goals was to tie eye doctors to the company, which we have now achieved. Our chief medical officer, Bjørn A. Helland-Hansen, is an eye doctor, which gives us sound proof within the company that what we develop makes clinical sense.

Having moved from TRL four to seven or eight, at the end of Q4 2020 we expect to be CE approved, which is obviously a major milestone for any medtech company.

Can you outline the technology behind Bulbitech and the problem you are trying to solve?

We offer diagnostic support through eye tracking, especially in the neuro-ophthalmic landscape. When a patient goes to the hospital, often there is not a single neuro-ophthalmologist on duty or, having travelled more than four hours to get to the hospital, there are long waiting times.

Our eye-tracking camera – Bulbicam – connects to a working station on which our Bulbihub software can be used and attempts to solve this problem. This hardware-software combination can be deployed anywhere; the system is based in Northern Norway, but the outcomes and data can be shipped to a neuro-ophthalmologist in Trondheim or in Oslo. This creates an extended arm for neuro-ophthalmologists, making neuro-ophthalmology available to patients in a local setting. Patients will no longer have to travel for hours just to take a diagnostic test; something that no

longer makes sense today when everybody can be connected remotely.

We have developed three tests for which Bulbihub can be used: a visual field test based on eye movement perimetry; a pupil test, because we know a lot of glaucoma patients have pupil defects; and a ptosis test which is related to the fact that droopy eyelids can be a symptom of glaucoma. These three tests allow for early stage screening for glaucoma, something that both optometry and ophthalmology currently focus a lot on.

What is the timeline to market and what is your vision in terms of international strategy?

The timeline to market at this point is very simple. We still have two more activities to become CE approved: electrical safety testing and for our external manufacturer to pass a supplier audit. Both of these are low-risk; in terms of electrical safety we have already tested our previous prototypes and our external manufacturer is already ISO-13485 certified. Therefore, we should be ready to launch from Q1 2021.

We have already signed multiple letters of intent with distributors in the Nordic countries as well as Western Europe. Now we are also looking to expand our commercial activities with the launch of our series A investment proposition and Bulbitech has applied for a fast track to innovation grant under the EU’s Horizon 2020 program. Moreover, we are also engaged in early stage conversations with one of the world’s largest optician chains, which is interested in using our technology.

How easy is it to secure investment in Norway where medtech is relatively underdeveloped? What kind of education to investors require about Bulbitech and its technology?

Norway is a very good country to start projects. In the pre-seed and seed stage people here are very investment-minded and there are a lot of angel investors and well organised angel networks who, once they understand a problem and can envision a solution, are willing to commit. There is also a good national incentive to invest, with tax returns on investments, which makes the pre-seed and seed stage a very attractive investors landscape.

However, at later stages of a company’s development things get more difficult. Norway only has a population of five million and there are not a lot of specialised medtech and biotech venture

capitalists (VCs) or private equity. Therefore, most major investments are made through investment bankers with international networks or via syndication partners. There are a few good potential investors in this field but finding investment can feel like looking for a needle in a haystack.

Additionally, many of the investment banks that we talk to are willing to invest in biotech or medtech but have traditionally been focused on Norway's more well-established industries of forestry, agriculture, fishing, and oil and gas. Therefore, there is a need to educate them about the steps that need to be taken to become a mature medtech company. That is something that could really be improved in Norway.

The Nordic countries have a strong research footprint neuro-ophthalmology. How is Bulbitech collaborating with consortiums or research groups in the region and using its geographic position to its advantage?

It was difficult for us to enter the clinical landscape in Norway but fortunately now we are in talks with some good partners, including Oslo University Hospital, which is interested in our technology, and Helgeland Hospital in Northern Norway, with whom we are on the verge of signing a cooperation agreement.

We have also recently been approached by a neurologist working at St. Olav's University Hospital, the neurological centre of which is world-renowned and has won a Nobel Prize. Their work is very different from what we generally do – winning a Nobel Prize for research with mice is far from employing a diagnostic device in human beings and doing research with that – but once we have passed CE approval, these kinds of collaborations will become much easier.

Prior to the COVID-19 pandemic diagnostics were an often-overlooked part of the life sciences value chain. Do you sense this shifting and how are you planning to raise awareness of the importance of diagnostics in neuro-ophthalmology?

There have certainly been a lot of therapeutics developed in recent years – rightfully so – but for patients to access therapeutics, they first need technology to define exactly what their needs are; something which can only be done through correct diagnosis. Diagnostics has been somewhat overlooked but that does not mean that it cannot be improved; I believe that with the right approach, diagnostics companies can be very interesting, especially in those areas where there is a

shortage of certain medical professionals, such as neuro-ophthalmology. With the rising demand of an ageing population and a shortage of professionals, technology can step in and fill the gaps in both diagnostics and therapeutics.

Big Pharma will be a driving force behind this shift. Due to the substantial amounts of capital that exists there, they can gain wider acceptance of the importance of diagnostics than diagnostics companies alone can. In our case, Big Pharma is increasingly interested in eye movement perimetry, so there are multiple opportunities for collaboration and growth.

What is the potential for Bulbitech in terms of partnerships with Big Pharma companies focusing on ophthalmology treatments?

There is a lot of potential. For instance, research shows that some early stage drugs against Alzheimer's or Parkinson's have a positive or negative effect on eye movement, which our device is more than capable of detecting. Diagnostics companies like ours have a huge opportunity to partner up with pharma companies developing such drugs for both the eye and the brain. Our focus tends to be more on the physiological side of the eye and the processes that occur when a person interprets data or sees lights, which affect eye movements.

The Norwegian National Health and Hospital plan 2020-2023 contains a big focus on the digitalisation of healthcare and hospitals; what kind of opportunity does it present for Bulbitech?

It presents us with an opportunity in the sense that Norway is now beginning to look at entire supply chain. The country is currently still a little bit too hospital-focused, whereas other countries are already thinking about outsourcing diagnostics. Centring all diagnostics in a hospital setting in a country like Norway is not particularly wise; most Norwegians want to live, work and study in their towns, so the culture is more conducive to diagnostics being conducted locally and remotely.

Creating a data-driven infrastructure will be important, as Norwegian hospitals are still rather introverted, looking at their own facilities and thinking how they themselves can improve, rather than how they can work with primary care professionals and opticians to share data and ultimately make better decisions.

Hospitals are currently part of the medical supply chain, but they should become better integrated into the value chain and help create a more patient-centred patient flow rather than the current supply-demand dynamic. For Bulbitech there are major opportunities to connect to the central system being established in Norway.

Where do you see Bulbitech in five years' time? Where do you want to lead it?

We want to be in a position where eye doctors and opticians are familiar and comfortable with implementing eye tracking in their diagnostic processes. As part of our five-year plan we want to be selling in India and China, which will mean that we have conquered the markets of Europe, North America, and Asia. That is where we want to be, but before that we have the responsibility to educate people on how to use eye movements and our technology in optometry and ophthalmology diagnostics

What kind of leader are you and what is your leadership style?

I am a very typical Dutch leader! My Myers–Briggs Type Indicator (MBTI) is ENFP [A Campaigner (ENFP) is someone with the Extraverted, Intuitive, Feeling, and Prospecting personality traits. These people tend to embrace big ideas and actions that reflect their sense of hope and goodwill toward others. – Ed.]. I like to connect and give my team members a lot of responsibility within certain boundaries and strategic pathways that we put down as a company. If they have questions, they are always welcome to ask, because I know that nobody knows everything. If there is a problem, I hope that people find me open and approachable. This company is not about Dennis Hens, but about making our technology available to patients that need it the most.

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