

Revolutionising the Diagnosis of Sleep-Disordered Breathing



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Sleep-disordered breathing is surprisingly common and a major contributor to health problems such as high blood pressure and congestive heart failure. Sound sleepers take their undisturbed rest for granted. For those who suffer from sleep-disordered breathing, there is no such thing as a good night's sleep. Over 60 million people in Europe and the US alone are affected by this condition.

In 2003, the UCD spin-out company, BiancaMed, launched a pioneering product that radically changed how sleep disordered-breathing is diagnosed. At the heart of the company's proprietary technology was a highly sensitive, radio frequency motion sensor that detected respiration and movement without being connected to the body.

It uses sophisticated biometric software to convert motion data into a measurement of sleep and made it possible to monitor those with sleep problems at home in their natural sleeping environment. Prior to this, diagnosis was expensive, complicated and typically involved a patient being wired up to monitors in a sleep laboratory.

BiancaMed was a spin-out from research undertaken in UCD's School of Electrical, Electronic and Communications Engineering by Professor Conor Heneghan and Dr Philip de Chazal. The company's third co-founder was Dr Conor Hanley who is widely experienced in technology commercialisation.

BiancaMed was set up at NovaUCD in 2003 and Dr Conor Hanley says the experience of being based there was extremely positive. “The actual physical environment is very nice as there's an architectural mixture of old and new. There's a coffee shop at the heart of the building and the cost of a coffee was kept deliberately minimal to incentivise entrepreneurs to congregate, mingle and share ideas,” he says.

“Developing a start-up can actually be quite a lonely path and the emotional support of having people around you in a similar situation was very valuable. This idea of an open area is something we've replicated in our new offices at NexusUCD. So too is having labs close to our desks as we did at NovaUCD. We have tried to capture some of the essence of NovaUCD by creating a working environment that is conducive to collaboration.”

Hanley says the fledgling company also benefited from NovaUCD's programme of guest speakers, visits from service providers and the availability of the NovaUCD Campus Company Development Programme. “They covered all the bases from formal business

training to providing access to experts and mentors and interaction with other companies going through the same process. This helped accelerate the learning process,” Hanley says.

“We have evolved quite significantly since we were set-up and the supports and services provided at NovaUCD certainly made it easy to grow,” he adds. “For example, the building is designed in such a way that the space is flexible so you can have more room if you need it.”

One of BiancaMed's early investors was the US-based medical devices company, ResMed, a global leader in the development of products for the diagnosis, treatment and management of respiratory disorders, particularly sleep-disordered breathing. In 2011 it acquired the company, which has since been renamed as ResMed Sensor Technologies.

“ResMed is committed to advancing innovative technology in sleep and respiratory medicine and BiancaMed was a strategic acquisition that has allowed it to expand its diagnostic range and patient reach,” says Hanley who is now Senior Vice-President, ResMed Ventures & Initiatives.

“We had global ambitions from the start and set out with the vision of moving monitoring from the hospital to the home. Looking to the future there is going to be much greater connectivity between the home and the hospital and remote monitoring will play an increasing role in this. ResMed's vision is helping change people's lives one breath at a time so culturally they were quite aligned with us and it was a good fit.”

Following the acquisition, the company graduated from NovaUCD to NexusUCD, the Industry Partnership Centre, located adjacent to the main University campus at Belfield. ResMed Sensor Technologies employs over 30 people at its new base and plans to expand its facility at NexusUCD with the creation of up to 50 new jobs over the next three years.

“Ireland has quite a few things to offer companies like ResMed such as the technology and expertise we've built up here around medical devices,” Hanley says. “Secondly, there's a lot of foreign direct investment around IT and thirdly there's quite good industry-academic collaboration. Other positives of being located in a small country include being able to network quite well, test business models and interact easily with people.”