

Quantib

The SME leading the way into the future of radiology

Rudolf Scholte is the COO of Quantib, a company of “young and passionate people dedicated to advancing healthcare by writing awesome algorithms”, as stated on their website, that he and professor Wiro Niessen of the Erasmus Medical Center in Rotterdam co-founded in 2012. With over 25 years of management experience in the healthcare industry, he has spent the last ten years focusing on building innovative start-ups.

Quantib began life as a spin-off from the Erasmus University that houses the Biomedical Imaging Group Rotterdam led by Wiro Niessen that researches the application of new technological innovations for medical imaging analysis. “The unique thing about this,” Rudolf points out, “is that the Erasmus University does not have a specific physics or computer science department and as such is forced to internalise these skills within its medical centre where the physicists, mathematicians and computer sciences among its staff are geared to

medical imaging analysis.” A major reason for the group’s success is that it is actually housed inside the medical centre, working together with radiologists, neurologists and other specialists. This means that the developments are really focused on the clinic’s needs. “Just imagine the benefits of sharing all that knowledge, next to the coffee machine!”

AI +

When General Electric Healthcare visited the centre and saw for itself the work that was

going on, it proposed a collaboration and become a launching customer for the innovative technologies that were being created. “And so we had a substantial agreement in place to get Quantib off the ground,” Rudolf explains. “Looking at the company’s business, several buzzwords come to mind, such as artificial intelligence (AI), machine learning and deep learning – these are the technologies that play a key role in medical image analysis. We all know how AI got the better of the human world champion in Go! Well, we use the same kind of AI to ‘win’ but with an essential addition – a deep understanding of clinical usage

high-tech companies. Where we are different,” Rudolf says, “is our deep knowledge of clinical workflows, diagnostics and clinical processes. The innovation takes place in tweaking and optimising our algorithms in such a way that they can easily be used in combination with all the other software radiologists are already using. You have to realise that all vendors provide slightly different programs for processing, storing, viewing and reporting of medical cases. To not unnecessarily complicate the radiologist workflow even further, we have to make sure our product integrates seamlessly with the software being used currently.”

of the project is to develop novel technologies in radiation oncology for improvement of the quality of life for cancer survivors by using real-time MRI imaging in order to enlarge treatment accuracy and minimise healthy tissue doses. A future ITEA project, IMPACT, which is also led by Philips, will involve Quantib’s work on enabling the shift from evidence-based to intelligence-based healthcare, promoting automatic data collection and artificial intelligence throughout the complete clinical pathway.

Adding value to clinics and patients

“Funding is a vital ingredient, there’s no denying that,” Rudolf admits. Quantib recently secured a significant amount of fresh funding from Holland Venture and Innovation Quarter to enable the company to scale up its international expansion ambitions and establish new partnerships with leading international academic hospitals. “But let me make one thing clear,” Rudolf stresses, “it’s not about the money. It’s about adding value to clinics. That’s a key criterion for selecting people – they must be committed to this goal. There is so much work that has to be done in that area, and that is our primary motivation. Our first commercial product targets better diagnosis of neurodegenerative diseases – everyone knows that Alzheimer’s is a tremendous societal challenge, with millions of people and their families affected. We currently lack an effective therapy. This process starts with developing an effective drug, which means selecting the right kind of drug for development. We can help by analysing the images in the very early stages of clinical research and identifying the differences in things like the rate of brain shrinkage. The same goes for multiple sclerosis – we can help identify early on what works and what doesn’t. The data science can make the difference. A colleague of mine has calculated that the amount of data generated in the next two to three years will be more than in the past three hundred years. We want to use that data to ‘supercharge’ our radiologists so that they can help find solutions to these major societal challenges in healthcare.”

More information

<https://www.quantib.com>



and the clinic’s underlying workflow.” The first area where Quantib applied this valuable combination of different types of expertise was neurology. In collaboration with GE Healthcare, Quantib developed its first product: Quantib Brain, a plug-in to the GE branded software that radiologists use to view and assess medical images.

Tweak and optimise

Quantib goes further than simple medical imaging analysis – its solutions involve the complete workflow from reading the image to diagnosing the patient. Key to this whole process is software. “Our product is software – data science. We use the software to analyse the data and try to use it in a more intelligent way. It’s not the software and algorithms on their own that distinguish us from other

Power of collaboration

Quantib’s work of tweaking and optimising its algorithms is strongly supported by participation in programmes like ITEA that provide an opportunity to collaborate in funded projects. “It certainly helped us in the past,” Rudolf says, “as programmes like ITEA encourage the large companies to work with SMEs, which they may not be inclined to do otherwise. Of course, it’s a chicken-and-egg scenario. You need to prove yourself, but you also need the opportunity to do so.” In the very successful ITEA project BENEFIT Quantib did just that. In collaboration with, amongst others, Philips, the company assisted with the development of an ‘Organ-at risk’ segmentation tool for brain tumor treatments. Additionally, Quantib is involved in the current ITEA STARLIT project, collaborating with partners, including Philips and Elekta. The aim