

Mercator NovioTech

Science Meets Business Nijmegen



Sigrid Helbig: The Economic Board
hands-on strategy



Antoine Fraaij: Radboud Innovation
focuses on societal impact



Start Up Mix & AGreen: Radboud students pitch ideas
at Social Enterprise meeting



Radboudumc

Radboud University





Dutch National Military Museum - lighting and indoor climate testing

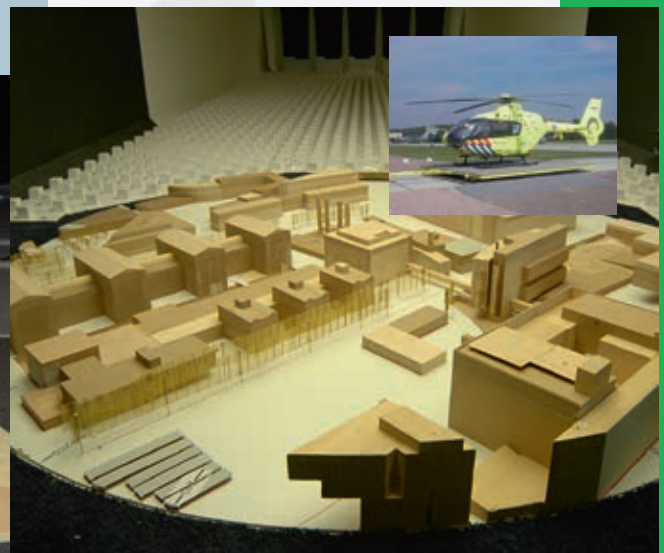
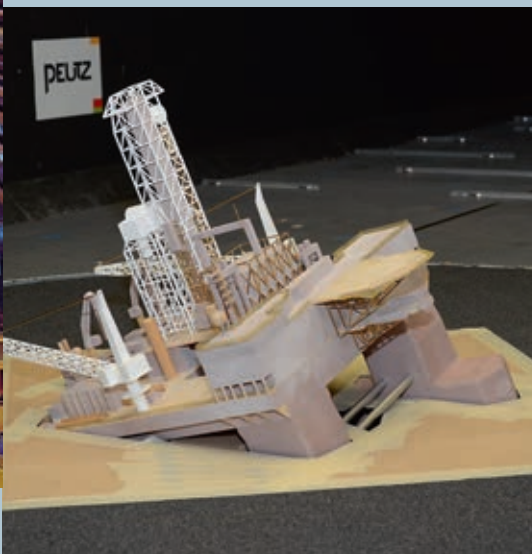


Innovative improvement of human functionality



Tonhalle Düsseldorf - acoustics

Semi-submersible drilling vessel for Marin/Frigstad - scale model for wind load testing in wind tunnel



Radboudumc Nijmegen - research into air quality relating to air ambulance helicopters

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Investing in your future!



More innovations with knowledge startups

The province of Gelderland demonstrated it on 25 May: startups are indispensable for the renewal and growth of the economy and for employment opportunities. Startup50Gelderland was an excellent chance for Gelderland to showcase its innovative businesses during the Dutch Presidency of the EU. The theme had been introduced globally by StartupDelta and queen of the startups Neelie Kroes and her heir apparent Prince Constantijn. To be ranked as one of the top Gelderland startups, businesses with growth potential had to be less than 7 years old and be certain of attracting investors. The resulting Gelderland Startup Top 50 was revealed on 25 May with Mellon Medical as the winner. This medical technology business was founded in 2013 and has been located on the Novio Tech Campus since 2014. It develops instruments that enable surgeons to stitch with one hand, thus making the procedure more stable, faster and more precise. As well as Mellon Medical, the startup rankings include other businesses located on the Nijmegen campus locations Novio Tech Campus and Mercator Science Park, collaborating with knowledge institutes and using startup funds such as KERN, *Gelderland Valoriseert* and Red MedTech Ventures. Knowledge remains an important factor underpinning innovations and new businesses, all of which can make a better start with the support of early-stage startup funds.

In this issue of the Mercator NovioTech magazine you can also read that the municipality of Nijmegen is committed to strengthening the startup ecosystem together with knowledge institutes and campus locations. In April the new Startup Nijmegen location at Nijmegen central train station was opened. Nijmegen stations Heyendaal and De Goffert are also appealing to innovative businesses. This is where several startup networking events were held this spring in collaboration with knowledge institutes, such as the one held by SMB Life Sciences and the ICT Network Nijmegen. You can read more on these in the current issue. On 24 May, HAN University of Applied Sciences organised the Young in Business event, aimed at entrepreneurial students. At Radboud University, May is Radboud Entrepreneurial Month with lectures for students, particularly those studying management and physics. The guest lecture on Corporate Social Responsibility on 24 May was well attended and there was clearly interest in the Social Enterprise meeting on 28 June at Radboud University, aimed at entrepreneurial researchers and students, young as well as experienced social entrepreneurs. Students and researchers want to use their knowledge to create an impact on society, as well as working towards their own futures. Startup businesses are one good means of realising this goal, under the motto: 'think social, act business', or 'improve the world, start a business'.

Startups are one of the paths by which academic knowledge finds its way into society. In order to realise more 'Societal Impact' with the education and research conducted there, Radboud University has set up Radboud Innovation as an academic networking organisation, enabling a university that is rooted in society to use its knowledge to contribute to social and economic innovations, in collaboration with government, businesses and other social partners. Read more on this subject in the first article of this issue.

Ir. Drs. Antoine Fraaij,
 Radboud Innovation,
 BV Campus Radboud University.

Drs. Hein van der Pasch,
 Radboud Innovation,
 BV Mercator Incubator Nijmegen.

Dr. John J. Schalken,
 SMB-Life Sciences.

Ir. Rikus Wolbers,
 Novio Tech Campus.

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Radboud Innovation: roadmap to valorization and innovation

In September 2015 Radboud Innovation was founded as the new valorization unit at Radboud University (RU). Together with the faculties, Radboud Innovation supports valorization and innovation at RU and elsewhere, as a socially-engaged university. Director Antoine Fraaij formulated the mission and goals, and drafted a roadmap for the coming three years which will lead to more visible societal impact of the research and education at Radboud University.

Universities train academics, conduct research and valorize knowledge in order to contribute to innovation and economic and social development. In addition, there is an increasing emphasis on public-private cooperation and regional relevance. Antoine Fraaij: "Valorization activities take place within faculties and institutes belonging to Radboud University and Radboudumc. Working in their own field of knowledge, researchers do not always see how other scientific fields could also be relevant for their research. Radboud Innovation aims to combine existing expertise and manpower as well as create a stronger appeal to third parties, thus allowing us to show the entrepreneurial and social side of the university more effectively. For research funding requests it is ever more important to demonstrate who your external partners are and the social relevance of the research. This means there is both political and social pressure for universities to contribute by adding economic and social value to knowledge. In this context the Ministry of Education, Culture and Science introduced the Dutch National Research Agenda. Starting from 140 questions to science, it is being used as the basis for creating new connections in the different fields of research. Radboud University's response to this will be to help Radboud Innovation to look for connections and collaborations within the university and beyond, other EU countries included. Brussels expects new

impulses toward social, technological and economic innovation from the East Netherlands region and is offering opportunities for financial support.

This emphasises the need for Radboud University to put itself on the regional, national and international map. Radboud Innovation will do its utmost to link themes from the unpredictable outside world to the relevant scientific fields and lines of research at the university. The challenge is to match the right people and partners at the right time. It is not possible to do demand-driven research in the sense of 'you ask, we deliver', but it is possible to link a social issue to ongoing research. We will then also look for connections to external partners whose questions match our major research themes. In this way we can improve the way we show what we as a university have to offer. It is also the reason that Radboud Innovation's focus is primarily external."

3-phase roadmap

In his networking organization at central and faculty level, Antoine Fraaij has drawn up a roadmap for developing the network in three phases. "In the first phase we will map each faculty's own valorization goals and ambitions. In the second phase we will translate the valorization strategy into focus areas and strategic themes, mostly per faculty. Parallel to this, in other words in the third phase, we will develop these priorities into multidisciplinary projects and strengthen alliances with governments, social organizations and businesses. It is all about improving the visibility of the excellence of our science. In consultation with the municipality of Nijmegen, the Arnhem-Nijmegen region, the province of Gelderland and the East Netherlands area, we want to present a clearer image towards The Hague and Brussels about the strengths of Radboud University. The subjects we deal with are related to social themes in Brussels. The 'Societal Challenges' within the European funding programme Horizon 2020 are aimed at finding solutions for the most pressing social issues and those solutions could come from a multidisciplinary and integrated approach supported by Radboud Innovation."

Antoine Fraaij gives the term 'valorization' a broader meaning. "The classic form of valorization is to create new business opportunities. Complimentary to this is a new focus on adding social value, based on a good internal network and cooperation with external partners. That is of course the reason why we opted for Radboud Innovation as a campus-wide networking infrastructure. Knowledge transfer involves people and requires collaboration between partners in the university and externally.





Our network is also part of the Startup ecosystem of the city of Nijmegen, and we have a great deal of contact with the Centre for Valorization and Entrepreneurship (CcVO) at the HAN University of Applied Sciences, for example in the new business project Gelderland Valoriseert (Gelderland Valorizes). On campus we work with the valorization team of Radboudumc and off campus with stakeholders like Health Valley, Novio Tech Campus, Oost NV and The Economic Board Arnhem Nijmegen. We all aim to send the same message to the outside world, meaning the university can also help our external partners to progress by functioning as an innovation motor. They recognize Heyendaal as a top location in the region when it comes to innovation and employment."

Change perspective

Radboud Innovation's service portfolio includes Research Support, Project Development, and New Business Development & Facilities. Antoine Fraaij: "Research Support is centred on the scientist, for instance by providing funding advice with descriptions of impact, information meetings and project partner search. At Project Development we can take over the tasks of setting up partnerships and forming and maintaining lasting collaborations. At New Business Development & Facilities we focus on entrepreneurial students and scientists, and assist with things like applying for patents, starting a spin-off business and collaborating with these and other innovative businesses. The availability of facilities is crucial, for example iLabs, skills labs, Mercator Science Park, Mercator Incubator, Radboud Research Facilities and Radboudumc Technology Centres, all aimed at regional collaboration. Radboud Innovation wants to breathe life into 'Change Perspective', the motto of the RU's strategy, and provides appealing, socially- relevant examples from research support, project development and business development."

Dr. Antoine Fraaij, Director of Radboud Innovation: "Radboud Innovation wants to combine existing expertise and manpower and add new strengths to achieve a higher profile for Radboud University in the outside world."

He continues: "We represent the university in a complex landscape with a wide diversity of partners and stakeholders. We bring partners together and combine forces as a networking organisation, adding value with knowledge resources, concrete propositions, policy incentives, advice and support activities and facilities. Together with the university communications department we are working towards finding better ways to exhibit, promote and market RU knowledge and expertise, on the 'marketing of science' and strengthening the Radboud's reputation, thus making our substantial societal impact more visible."

Smart Specialization Strategy

Gelderland's Smart Specialization Strategy has two main themes: 'Smart & Sustainable Industries' and 'Concepts for Healthy Life'. Antoine Fraaij: "Within each of the two main themes, three specific sub-themes have been highlighted. In particular we put a strong emphasis on the subject 'Healthy Brain'. It is essential to find ways of connecting our unique scientific position with the Donders Institute to other scientific fields. In order to do so, we collaborate with the Radboudumc valorization team. We are also working on alliances and strategic relations 'from traineeship to alumni policies, from knowledge and innovation to new business activities'. We project a life-long learning cycle on the world outside the university."

The Radboud Innovation network has a central expertise team currently consisting of twelve people. The network has a fixed contact person for each faculty. "In the alpha/gamma areas we are making extra investments in ambassadors. This creates valorization teams for each faculty, further connected to each other through the valorization network. Radboud Innovation continues to follow its roadmap and wants to come up with more ingredients and plans that can strengthen each other. The external connections are crucial: to Brussels, to regional, national and international partners in society and business, with a keen eye on the Dutch National Research Agenda, which may become an important framework for the future distribution of research funding."

Radboud Innovation supports the organization of 'societal impact'



Shared Facilities Novio Tech Campus: sharing is the new buying

*Left to right: Han van 't Klooster
CEO PharmaCytics, Rikus Wolbers director
Novio Tech Campus, and Hans van der Steen
project manager at Avivia*

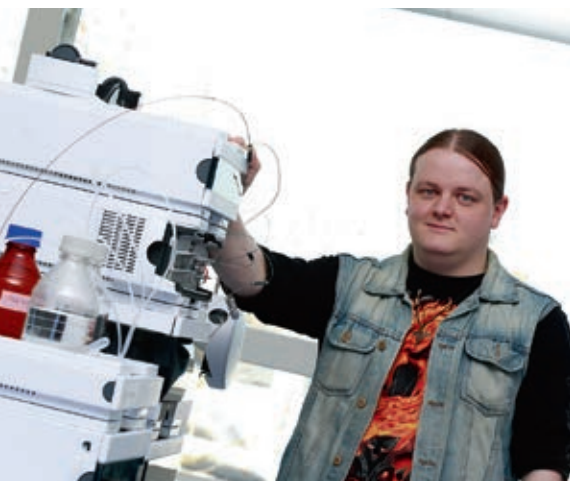
At the start of this year Novio Tech Campus Service opened a new service for entrepreneurs on and off campus: Shared Facilities. On the top floor of the M building a complete laboratory has been kitted out with both new and used equipment that can be rented and used by entrepreneurs.

FACILITIES

"Young entrepreneurs who want to start their own business straight after university, often do not have the means to buy expensive equipment," explains Rikus Wolbers, director of Novio Tech Campus. "They have been used to using the facilities available at university, but now they have to invest. With

Shared Facilities we want to offer a solution: a complete lab with equipment that we can rent to young entrepreneurs. We have various advanced equipment such as a new high-performance liquid chromatography mass spectrometer (HPLC-MS), a gas chromatography mass spectrometer (GC-MS) and an ion-

chromatograph. The lab is mainly equipped with 'workhorses', equipment that we can safely assume will be used frequently. Besides these, the inventory consists of all standard laboratory materials such as glassware, fume cupboards, an industrial glassware washer, an autoclave, various gases and so on. What's



Equipment at Shared Facilities, Novio Tech Campus

- HPLC 1: Agilent/HP 1100 series with VWD detector
- HPLC 2: Agilent/HP 1100 series with DAD detector
- LCMS: Agilent 1260 Infinity with 6-column changer and DAD detector, linked to 6120 Quadrupole MS (single-quad with ESI or APCI source).
- GCMS: GC Agilent 7890b with FID detector, MS HP 5973 single-quad, linked with a headspace autosampler (CTC Combipal)

- Genevac centrifugal evaporator
- Ionchromatograph
- Autoclave
- Fume cupboards
- Gases (natural gas, nitrogen, helium, technical air)
- Industrial glassware washer
- Various glassware

Interested in the Shared Facilities at Novio Tech Campus? Please contact lab manager Gillian Siebers:
gillian.siebers@ijslab.nl

more, we are neighbours with IJ5Lab - a collaboration between the ROC (regional education centres) Rijn IJssel and De Leijgraaf, and its partners HAN University of Applied Science and Radboud University - with facilities that can also be used by businesses. Both IJ5Lab and Shared Facilities are under the supervision of lab manager Gillian Siebers. The Novio Tech Campus is also the second location of iLabNijmegen, the partner of the iLab location in building 3 of the Mercator Science Park on the Radboud University campus. Our customers do not have to be located on campus; businesses from elsewhere can also rent the Shared Facilities lab, even for short periods. "We operate expensive high-tech equipment, so it is important that it is operated correctly. Should a user need assistance, there are sufficient qualified people present who are willing to assist and able to give advice," emphasises Rikus Wolbers. "For some of the more complex equipment, if necessary, arrangements can be made for the main users to perform tests for others on an hourly basis. The lab manager ensures efficient use and planning of the equipment."

User and supplier

PharmaCystics has been located on the Novio Tech Campus since mid 2015. The pharmaceutical company is working on a method to improve the bioavailability, i.e. the absorption, of medication. CEO Han van 't Klooster is enthusiastic about Shared Facilities. "At the lab we can use standard equipment like the glassware washer or autoclave which you need regularly, but are still too expensive for one partner to purchase on their own. We use the LC-MS on a daily basis. Since it has been located here, the processing time of the test has vastly improved. If it had not been here, we would have had to go back and forth to the university, hoping for an available LC-MS, and then waited for the results. This really saves us days time-wise. Shared Facilities didn't exist when we set up here, but we did campaign for it because this service is very important for us."

Avivia, also located on the Novio Tech Campus, is another one of its users, "But we also supply equipment to Shared Facilities", says Hans van der Steen, project leader at Avivia. "Avivia is still in the development phase, but it does have a lot of equipment available. So far we are not utilizing it to its

full extent, so in consultation with NTC-Services we have put our equipment at the disposal of other entrepreneurs, ensuring better capacity utilization. For us, we now also have access to the LC-MS of Shared Facilities. A device such as this costs several hundred thousand euro and if utilized at only 10 % of its capacity, it would be far too expensive for us to purchase."

Rikus Wolbers: "Shared Facilities has not been set up on a true revenue model; if we manage to cover costs, our goal has been achieved. We aim for a capacity utilization of about 60-70 %. The most important thing for us is to provide added value for our tenants and businesses from outside the campus, thus strengthening the connection with our contacts. As a resource, Shared Facilities offers a competitive advantage and enhances the image of Novio Tech Campus. You can already see how the 'sharing' phenomenon boosts mutual cooperation as well as improving the atmosphere on campus. All things considered, a service like Shared Facilities is an extra reason for many tenants to stay here and for new tenants to locate here. Sharing is winning, in all respects."

FACILITIES ON THE RADBOUD CAMPUS

Radboud Research Facilities

Radboud Research Facilities is a collaboration between Radboud University and Radboudumc, supported by the province of Gelderland. Businesses, research institutes and startups can use the equipment, facilities, knowledge and expertise available at these organizations. Innovations are stimulated by collaboration with scientific research. Radboud Research Facilities offers a wide range of facilities and expertise in five fields of research: Biochemical Screening, Biomedical Imaging, Neurology and Motion, Health Supercomputing and Nanobiology & Microbiology.

www.ru.nl/radboudresearchfacilities

Radboudumc Technology centers

The Technology Centers at Radboudumc offer top-class facilities for research, education and access to expertise, equipment and research data. Experts help to search for solutions to research questions. The centers are organized thematically: Animal studies; Biobank; Bioinformatics; Clinical trials; Data stewardship; EHR-based research; Flow cytometry; Genomics; Investigational medicinal products; Health economics; Human Physiology; Image-guided treatments; Imaging; Micro-



Mercator III location of iLab Nijmegen and several innovative companies on the Radboud University Campus

scopy; Mass spectrometry; Statistics; Stem cells; Translational neuroscience.

www.radboudumc.nl/RESEARCH/TECHNOLOGYCENTERS

iLab Nijmegen

For technological startups and innovative businesses in health, life science & chemistry, iLab Nijmegen provides specific advice on business development and the requisite contacts with researchers, facilities and commer-

cial premises. iLab Nijmegen has one location on the Novio Tech Campus and one on the Radboud University campus. At both sites, startups and innovative businesses can start their businesses in the Mercator buildings where they can turn to Radboud Innovation Science and Mercator Incubator Nijmegen to make contacts with researchers and access business support.

www.chemielink.nl/locaties/ilab-nijmegen



Ir. Eveline van Hoppe, director of IJ5Lab

IJ5Lab: Let's connect

IJ5Lab is a Centre for Innovative Expertise (CIV) in the field of laboratory technology, focusing on the Chemistry, Agro and Food, Life Sciences and Health sectors. The IJ5Lab was founded in 2011 and was given an extra impulse in 2015 under the leadership of director Ir. Eveline van Hoppe, formerly Human Capital Chemistry programme manager for the Top Sector Chemicals. IJ5Lab is a collaboration between vocational colleges ROC RijnIJssel (Arnhem-Nijmegen) and ROC De Leijgraaf (Oss) together with a number of businesses and is located at the Novio Tech Campus (building M).

Eveline van Hoppe: "Our aim is to improve the interaction between education and the labour market. We have three key result areas. The first concerns fine-tuning the influx of students to the demands of the labour market, adapting the course to the real world, promoting laboratory technician education and creating appropriate traineeships. Our second key result area is 'supporting normal business operations', that is to say training, acting as an intermediary for personnel and sharing knowledge, e.g. by organizing courses and information meetings with other parties. Our third key result area, 'contributing to innovation', means that businesses can come to IJ5Lab for practical assignments, research questions or facility sharing. This is ideal for young startup businesses that want to have their first routine research carried out in this manner, or for companies that want to outsource development or optimization of their methodology, hence gaining time and accelerating their innovation process. It is also ideal for businesses, like those that do not have all facilities available themselves, but do have a chemistry-related research question. We help to formulate the correct research question, consider whether it could be used as a traineeship assignment or if it might fit into the cur-

riculum or the talent programme for our best students. We have at our disposal a well-equipped lab with a lab manager or a coach present at all times. We have been accredited by SBB (Cooperation Organization for Vocational Education, Training and the Labour Market) so students are allowed to complete their traineeship at IJ5Lab. This is ideal if a company has an assignment but cannot offer traineeship coaching. Routine analysis, development and optimization of methodology are possible, as well as specific assignments. At the moment, for instance, our students are testing a large number of HPLC columns, fit for very diverse purposes, for the shared facilities of the Novio Tech Campus. Another example is a food product transport company that wants to know where it stands prior to the periodic compulsory checks, but does not have the necessary facilities itself. These are wonderful assignments for students, straight from real life! It goes without saying that in such cases we provide a non-disclosure agreement. Due to these realistic research assignments, students gain a clearer view of trade and industry practices. In fact, many of our trainees manage to get a permanent job with their trainee company after graduation. As such we are also the ideal hunt-

ing ground for the recruitment and selection of new employees."

She continues: "Recently the Enterprise Fund Nijmegen allocated a subsidy that Radboud University is using together with HAN/Bio-Centre and IJ5Lab to set up the 'Nijmegen Education and Innovation Centre'. Here we are bringing together the chemistry laboratory technician courses of the MBO (vocational training college), HBO (applied university of science) and VWO (pre-university education), acting as a single contact point for commercial inquiries. Students can work on company-oriented assignments from the regional business world under the supervision of a researcher or lecturer. Each level of education brings its own expertise, varying from fundamental and application-oriented research to routine analysis. Combining forces in this way adds value for all parties concerned, especially for companies that can have tailor-made research assignments carried out at applied university or pre-university level, instead of being restricted to vocational college level."

If you want to know more or to plan an introductory meeting, contact:

www.ij5lab.nl / info@ij5lab.nl

Symposium on successful entrepreneurship

The third edition of the Innovation Bootcamp at Novio Tech Campus was once again very well attended. The programme was dedicated to successful entrepreneurship in Chemistry, the Life Sciences, Health and High Tech. Keynote speaker of the day was Hans Schikan, former CEO of Prosensa and now a successful entrepreneur. One of his activities includes sitting on the advisory board of the Nijmegen-based company Khondrion, which expanded rapidly when collaborating on research of the Radboudumc led by Professor Dr. Jan Smeitink.



Hans Schikan

and the arrival of several interested takeover candidates. In 2014 the American BioMarin Pharmaceutical Inc. took over Prosensa for the sum of \$ 680 million, with the prospect of another 80 million should Drisapersen gain FDA approval in 2016 and a further \$ 80 million if approved by Europe before February 2017.

Following the keynote speech, there were workshops on informal investors as a source of finance, product development and the protection of knowledge. IJ5Lab, HAN BioCentre, Radboud Research Facilities and Novio Tech Campus Services gave a presentation on their (shared) facilities.

The event was concluded with pitches by Vivalt Screening (tests on worms as an alternative to testing on mammals), AnApply (online platform for an honest and efficient job application process), Clothes2.me (3D simulation for the consumer in their own digital fitting cubicle) and JointSphere (an implant for repairing damaged knee cartilage). Various companies and organizations from the region such as Hezelburcht, VWGNijhof Accountants and Tax Advisors, Van den Wildenberg & van Halder Lawyers, Hoge van Gerven Solicitors, RedMedTech Ventures, BDO, IJ5Lab, Health Valley and Flavius Insurance and Finance displayed their services as a 'table-top expo'.

The 3rd Innovation Bootcamp was made possible by Novio Tech Campus, Radboud University (Faculty of Science), SMB Life Sciences, Mercator Incubator, HAN University of Applied Sciences and Gelderland Valoriseert.

Schikan compared the development history of Prosensa with all its ups and downs to a 'ride in a rollercoaster'. Prosensa is a Dutch biotechnology company founded in 2002 as a spin-off of the Leiden University Medical Centre, focusing on the development of a so-called orphan drug for the rare disease Duchenne Muscular Dystrophy. Orphan drugs used to be of less interest to big pharma companies, but in recent years they have come under the spotlight and become a very 'hot' area for investors. Thanks to regulations in the US and in Europe, orphan drugs benefit from all kinds of incentives, such as a seven-to-ten-year non-patent market exclusivity, as well as various financial and fiscal advantages. Furthermore, governments like to support the development of these companies. The first clinical proof of concept of the new medicine Drisapersen was encouraging. At the time, Prosensa had seven programmes in the pipeline and decided to partly enter a

partnership. In 2009 an agreement was made with the British pharmaceutical giant GlaxoSmithKline (GSK), with GSK offering the future sum of about 500 million euros depending on the success of the new drug for the rare muscle disease Duchenne. As subsequent research results were unexpectedly disappointing, GSK decided to end the collaboration in 2013.

The participants in the study, however, did see the advantages of the drug and Prosensa decided to perform another thorough check of the data. In the meantime Prosensa reclaimed the full rights and continued the research. In 2014 the new data were submitted to the Food & Drug Administration (FDA) in a report describing both the positive features of the drug but also some negative aspects. This led to an accelerated approval (AA). The FDA report was put on the Prosensa website in its entirety, resulting in positive media coverage



Peutz: impressive experimentalists

Peutz is an engineering and consultancy firm specializing in acoustics, noise control, vibration technology, building physics, sustainable building, wind and environmental technology, safety, working conditions and pyrotechnics. Peutz still has its headquarters in Mook/Molenhoek near Nijmegen, two other Dutch locations in Zoetermeer and Groningen, as well as locations in various European countries.

PRESENTATION



Ir. Ferry Koopmans, CEO at Peutz

"We are real experimentalists," says CEO Ir. Ferry Koopmans. "By running experiments in our laboratories, we test empirically if what we as engineers have come up with and calculated, will actually work in practice. We have our own acoustic, building physics and climate laboratories, a fire safety lab and a wind tunnel, making our firm unique in Europe and beyond. This in turn means that most of our projects can be niche projects."

Peutz was founded in 1954 as 'Ir. V.M.A. Peutz, physical engineering, Consultant Engineer', when Victor Peutz, a physical engineer from Delft, arrived in Nijmegen. In the early 1960s the agency was involved in the construction of the Faculty of Mathematics and Physics at the university. Victor Peutz' father, Prof. Ir. Frits Peutz, was the building's architect. The newly-built Nijmegen Faculty of Science was an important factor for the first growth of the consulting firm.

Currently over 200 people are employed by Peutz in 10 locations in Europe and they are known the world over for their consultancy in building physics, acoustics, fire safety and the envi-

ronment. Ferry Koopmans: "We closely follow developments in society, link these to our experimental research and try to find solutions to current issues. We invite our clients to networking days with themes such as 'Beyond the crisis. Can we build and do business freely within new frameworks?'. We stir up discussions, looking for solutions. A programme on 'Industry and building noise' fits in with the improving economy, especially with issues such as increasing nighttime manufacturing. Other themes are 'Who dares to take the risk of storing dangerous substances?' and 'Living and working in safe and unsafe areas.' For themes such as these we are both technical researchers and strategic thinkers, advising companies and governments and looking for the best opportunities for coordination."

Airflows and vibration-free areas

Ferry Koopmans gives examples of challenging projects: "Research into vibration-free areas in hospitals, cleanrooms and nanolabs. For various academic nanolab and research institutes we have been called upon for vibration-free installation of equipment. In the design of rooms even the smallest vibrations caused by trains, buses or low-frequency sounds, for instance, need to be prevented."

Polluted air causes indoor climate problems. Peutz comes up with solutions. "We model and calculate airflows, research the operation of technical installations and give design and modification advice. For Radboudumc we researched the air movement, air quality and exhaust gas flow when an air ambulance helicopter lands or takes off. In our wind tunnel we had already built a model of UMC Groningen to simulate various wind speeds, wind directions, and the arrival and take-off of the air ambulance. We were able to demonstrate how and when the exhaust fumes were able to enter the hospital and how they spread. Combined with measurements from inside the hospital we predicted which concentrations of exhaust gases would accumulate. Based on these findings the air grilles were moved. Our findings and forecast models are a guideline for planning heliports and emergency power systems."

Wind tunnel experiments and fire safety

Ferry Koopmans continues: "For the realization of public buildings and offices it is key that visitors and users feel at ease. Important factors are ventilation, thermal comfort, fire safety, experience of sound levels, use and control of natural light and

the colour experience, all factors we can calculate, test and forecast. We conduct research into fire-safe car parks and road tunnels, relying on aspects such as use of fireproof materials, a proper ventilation system and compartmentation. Another example is research into the safety of facade panels and outdoor ceilings. We have developed an effective test setup in our wind tunnel that we can use to determine the influence of wind load and suction effects on this type of constructions.”

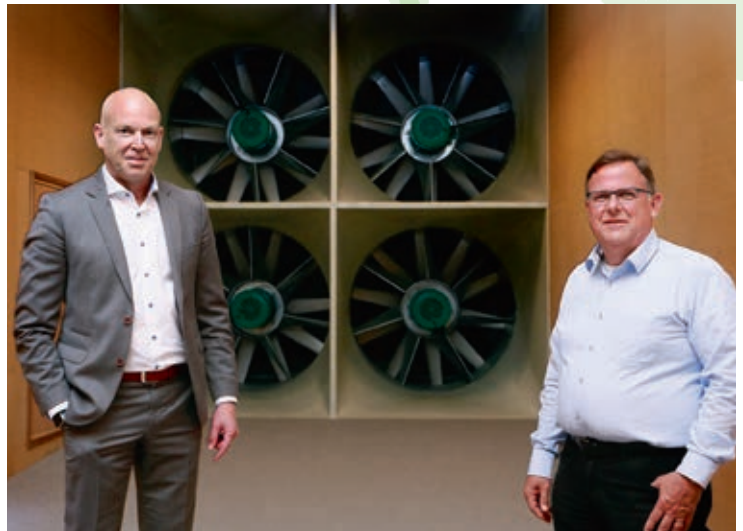
For the Rotterdam Market Hall with its enormous and striking glass facades at both ends, Peutz carried out various modelling calculations and wind tunnel tests. Because this high building could possibly create a serious ‘chimney effect’, Peutz carried out intensive research into the fire safety both for visitors of the Market Hall and for nearby housing. Ferry Koopmans: “We can respond quickly to current issues, for example the wind and fire safety of festival tents, the wind microclimate around large buildings like the WTC Utrecht and living safely close to the chemical industry.”

Dutch standards for wind microclimates

“For industrial companies Peutz researches issues like the influence of sound on the surroundings and environmental factors. We also take care of permits. In a slightly provocative way we raise social themes, such as during a recent meeting titled ‘Environmental zoning, administrative plaything or business safeguard?’ Businesses have been forced to put on the brakes for quite some time because of the crisis. Now the economy is picking up with highly dynamic results. The government has rather ambitious plans for environmental legislation, but are they compatible with current developments in the business world? Take



Model of a location with buildings is lifted into the wind tunnel



CEO Ferry Koopmans and Albert Alders, Senior Advisor wind technology

issues like air quality. The existing calculation models in this field are simply inadequate. Peutz has developed a wind tunnel model that allows you to predict the level of air pollution to the nearest microgram. Large cities like Amsterdam, Utrecht, The Hague and Rotterdam have asked for advice in solving their inner-city air quality problems. We are extremely knowledgeable in the field of wind microclimates. In the late 1990s we laid the foundations for the Dutch standard for wind climate NEN 8100 *Wind nuisance and wind danger*, based on our expertise and experience.”

In the field of acoustics Peutz is also internationally renowned. “In 1975 we introduced the phenomenon of variable acoustics, which allowed us to make the acoustics in concert venues suitable for multifunctional use. In theatres such as the Casino in Den Bosch, Theater de Spiegel in Zwolle and the famous Centre Pompidou in Paris we were able to improve the acoustics by researching and making use of special materials and acoustic clouds and baffles. In Nijmegen we were involved with the renovation of theatre De Vereeniging and pop stage Doornroosje. The Tonhalle Düsseldorf is another special project, where architectural esthetics and acoustic functionality have been brilliantly combined. The Amsterdam Concertgebouw with its world-famous acoustics is also a Peutz project. You need to be able to speak the language of all of the building’s users. For the new National Military Museum we researched the damaging influence of light on valuable museum pieces, and whether the amount of light was sufficient to display the collection to its best advantage. Engineering with a human touch. Much of our work has to do with experience and empathy. Someone once described us as ‘nerds who love ballet’. I couldn’t have put it better,” smiles Ferry Koopmans.

INTERNATIONALISATION

After the oil crisis in the 1970s, Peutz opened its first foreign offices in Paris. This was followed by locations in Düsseldorf, Dortmund, Berlin, Lyons and Leuven. Offshore safety turned out to be another discipline well-suited to our expertise and international projects. “Offshore safety revolves around issues such as the wind load of oil platforms and drillships, the stability of cruise ships, the flight safety of helicopters, explosion risks and fire safety. Our research and calculation models are put to work for clients worldwide, whether that’s China, Scandinavia or America. We also have all the expertise you need on sustainability: sustainable energy use for equipment, sustainable building, conceptual

designs of climate installations. The majority of our R&D activities take place in Molenhoek, due to the location of our labs there, which all our offices make use of. Peutz has employees from many universities with a range of degrees, such as aerospace experts from TU Delft, planners from the University of Groningen, mechanical engineers from TU Eindhoven. Projects demand a large diversity in disciplines and the right setting for specialists. We carry out integrated projects with a high level of specialist depth. We have the right people for that!”

www.peutz.nl



Promising Health Care innovations at Health Valley Event 2016

Taking centre stage at the Health Valley Event 2016 were new crossovers leading to promising innovation. With over 1,000 participants, the new CineMec Nijmegen was the place-to-be for care providers, knowledge institutes, companies and startups, with various parallel sessions held throughout the day. During the opening of the plenary programme, chair of the day Inge Diepman led a discussion between Chris Doomernik (Managing Director of Health Valley), Hubert Bruls (Mayor of Nijmegen) and Michiel Scheffer (regional minister for Economics, Education and Europe for the Province of Gelderland), dealing with the importance of Health Valley, connections, industry, entrepreneurship and innovation in health care.

EVENT REPORT

Photos: Jack Tillmanns

After the opening, several keynote speakers gave their own vision on the central theme: 'Where Crossovers Lead to Innovation'.

The first to speak was *Prof. Dr. Melvin Samsom*, former chair of the board of directors of Radboudumc and CEO of Karolinska University Hospital in Sweden since 2014. Together the Karolinska Institute and Karolinska University Hospital form a leading organization internationally for academic patient care, research and education. In his speech he compared the Swedish and Dutch health care systems, praising the efficiency of first-line care in the Netherlands and the relatively 'simple' organization of health care in Sweden. He also explained the radical reorganization of the Karolinska University Hospital, where traditional departments such as surgery and internal medicine are disappearing and will be replaced by 280 'patient paths', which are being developed together with the patients.

Keynote speaker *Prof. Dr. Pauline Meurs*, chair of

the Council for Health and Society, sounded a critical note about the "unrestrained inflation afflicting the term innovation". In the context of innovation she also criticized the use of terms such as 'scaling up and rolling out'. She views innovation more as an organic process and the innovator as a scientist, an activist as well as a pragmatist. She also questioned the notion of crossovers and the metaphor of the bridge commonly used in this respect.

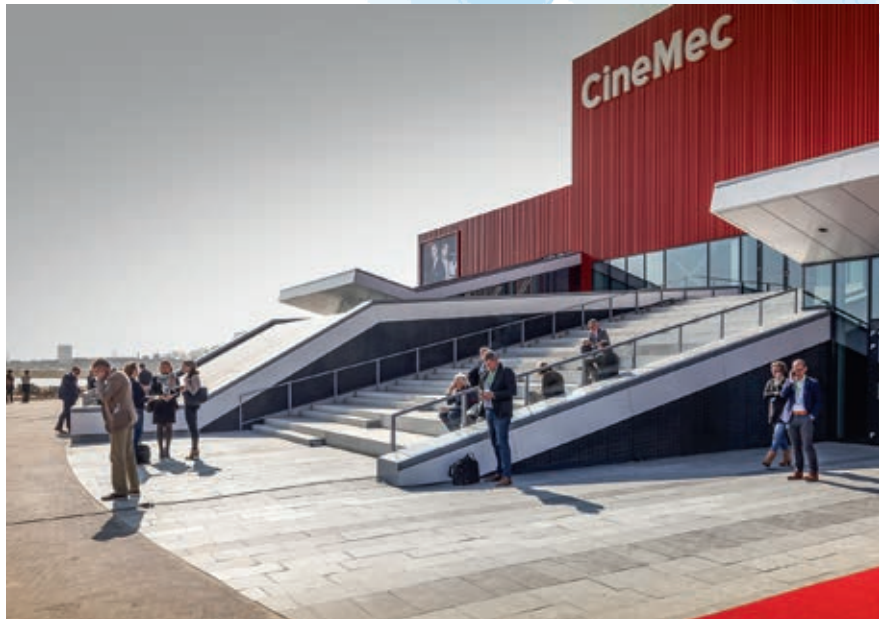
According to her it is not about crossing over from one discipline to the other, but primarily about how to weave together the riverbanks, i.e. the places where they come together. "Innovation occurs where disciplines meet or clash. It is all about *interdisciplinarity*. Professionals who follow their noses, who are able to put their own abilities into perspective and know how to forge coalitions with people with different opinions, are in the best position to

Chris Doomernik, Managing Director of Health Valley, opened the Health Valley Event 2016 by striking a gong



discover something new and to put it all into practice. You will find innovation hiding in the corners, in the unexpected and unregulated areas and it should most certainly stay that way." Speaker *Prof. Dr. Ir. Albert van den Berg*, scientific director of research institute MIRA at the University of Twente, presented some examples of *lab-on-a-chip technology*. He believes crossovers create many useful things, like a laboratory on a chip, for example. "To make a successful innovation from a crossover between medical people and technologists, the most important ingredients are (according to Albert van den Berg): open your mind to people and technologies, be sensitive and also be willing to talk to people who use a different jargon". MIRA works closely with nanotechnologists, hospitals and insurers. "That means that you have to be brave enough to look beyond your own borders so that you can come up with technological innovations that will have a direct impact on health care."

Oscar Kneppers, founder and CEO of the Rockstart startup programme, was keynote speaker number four. He indicated that one week previously (10 March) it had been Demo Day for ten selected startups who participated in the Rockstart Digital Health accelerator programme. At Cultuurspinnerij Vasim in Nijmegen, these ten startups presented themselves to 250 parties interested in digital care, amongst them dozens of international investors. During the programme the startups received over € 400,000 in extra financing and the numbers of employees per startup was more than doubled. More than 75 international investors contacted the startups in order to discuss further



The new CineMec Nijmegen is a modern congress facility

financing and future expansion. The international startups established collaborations with local health care institutes such as the AMC, Sint Maartenskliniek, Radboudumc, Pluryn, SIZA, Philadelphia, Pharmaccess, several general practitioners' practices and health insurers. Oscar Kneppers then gave the floor to two of the successful startups selected.

Wang Long Li, CEO of *Tinybots* presented the small robot Tessa as a buddy for people suffering from dementia. The robot is equipped with speech recognition and can give reminders to forgetful patients as well as being able to communicate with professionals and family carers. The small robot can take over part (up to 15 %) of the care, thus reducing the cost of care. A

pilot project using 100 Tessa robots will start this year and in 2017 Tinybots wants to put 2,000 of them on the market.

Amin Zayani of *MedAngel* showed an app with a mobile sensor that keeps track of the temperature of diabetes drugs in the refrigerator or during travel. These drugs must not become too warm or too cold, but if they do, the app will give a signal. In doctors' practices too, these drugs have to be stored at the correct temperature. This is why the company is now developing the MedAngel Pro version for this target group, enabling interim surveys that can be required in the interests of patient safety by health inspectors.

ScopeControl (Dovideq Medical) wins National Health Care Innovation Award 2016

For the first time ever, the National Health Care Innovation Award was presented during the Health Valley Event 2016. Three contenders were eventually nominated, chosen from the more than one hundred applications who entered via zorginnovatie.nl: Aeonose, ScopeControl and Silverfit RePhagia.

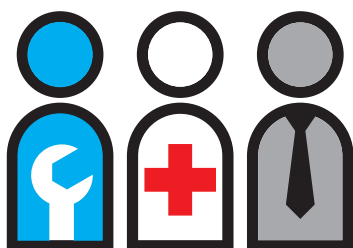
ScopeControl received 62 % of the votes and was presented with the Care Innovation Award 2016 (€ 15,000). ScopeControl is a device that is able to check endoscopes for contamination and defects. The product was developed by Dovideq Medical.

Rephagia by the company SilverFit is a device for people suffering from problems with swallowing or eating and drinking (dysphagia), helping them with swallowing exercises.

Aeonose, developed by eNose, is a breathalyser device (electronic nose) allowing rapid non-invasive diagnosis using exhaled air, e.g. for head and neck cancer.



Social networking on the event floor



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www.technologyforhealth.nl



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9th edition
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Mikrocentrum: Sharing knowledge at Technology for Health 2016

Every year Mikrocentrum organises various trade fairs, day events and courses for a broad audience in high tech manufacturing, government, and knowledge and educational institutions. Saskia Baeten is trade fair manager of Technology for Health, taking place on 11 and 12 October in Congress Centre 1931 in Den Bosch.

Saskia Baeten, trade fair and conference manager at Mikrocentrum

"Mikrocentrum aims to increase the knowledge of the audience and to broaden their network, in short, training, events and business. We realise this by organising ten trade fairs, some 30 knowledge and networking events and about 150 specialized courses in twelve disciplines. In addition to this, we have set up the Mikrocentrum High Tech Platform which over six hundred businesses have already joined. They are able to take part in all kinds of networking events such as the annual conference, are listed in an annual High Tech Business directory and can profit from interesting discounts.

Big Data

On 11 and 12 October, the 9th edition of the Technology for Health trade fair takes place in the Congress Centre 1931 in Den Bosch. "Technology for Health is a trade fair with a conference programme," continues Saskia Baeten. The event is an annual meeting place for professionals who are involved in the development of medical devices. Suppliers, developers and service providers get together for the yearly update from their field of work and to start up new projects. We expect about 75 exhibitors, and there is a special area for startups where new businesses can present their ideas and possibly make a match with interested businesses or partners. Main sponsor of the trade fair is Medtronic, who will give a keynote lecture on Big Data. We put together the conference programme with 40 lectures and thematic workshops in cooperation with FME Life Sciences & Health, Health Valley and Pontes Medical. The R&D side and products that are still in development phase take centre stage. Health care professionals who have an idea and are looking for help to realise it are very welcome. That focus fits in perfectly with Mikrocentrum's vision of sharing knowledge and broadening networks."

Serious gaming in health care

Besides the Technology for Health trade fair, Saskia Baeten is also responsible for the new Virtual Revolution trade fair that took place in Veldhoven last March. Virtual Reality is a topical issue and is making inroads into the most wide-ranging fields. During Technology for Health we are organizing a session on 'Serious Gaming in health care'. Using Serious Games you can make complex processes easier to understand and experience, for example

in the field of surgery. We are also planning a 'Robotics in health care' session. In other words, you are welcome to visit Technology for Health, the best R&D trade fair in the Benelux," says Saskia Baeten.

More information: www.technologyforhealth.nl



Event floor Technology for Health 2015

TRAINING

In the field Technology for Health Mikrocentrum also offers nine specialized courses including 'Quality control of medical devices according to ISO 13485 and ISO 1497', 'CE marking of Medical Devices', a course on FDA medical devices that gives an insight into how to market a medical product in the US. They also offer a course on the practical implementation of the GMP guidelines (GAMP 5) and a course on 'In vitro diagnostic medical devices (IVD)'. The complete overview can be found on the website:

www.mikrocentrum.nl/opleidingen/technology-for-health

Innovation Barometer positive on Nijmegen climate

The city of Nijmegen and its partners are investing in a strong Nijmegen knowledge economy, paying special attention to innovative startups and incubators. To measure the effects, an Innovation Barometer has been developed. This reveals the development of startups, the functioning of incubators and the innovative power of SMEs. The results of the Innovation Barometer 2016 show that the knowledge economy in Nijmegen is heading in the right direction.

Nijmegen offers a good base for innovation and innovative businesses. The employment market is growing and various conditions favouring innovation are held in highly regard. Businesses are also positive about their own innovative developments, according to the first Innovation Barometer in May 2016. Nijmegen's employment market is picking up again in comparison to previous years and the number of jobs has once again risen in the past two years (+380). As well as this, business dynamics seem to have improved over time as the number of businesses starting and closing down is increasing. These are both important indicators for a positive growth in the innovative force in Nijmegen.

At about 56 % (29 out of 52 businesses), the majority of the innovative entrepreneurs is satisfied or very satisfied with Nijmegen's innovation climate, against only 6 % of entrepreneurs who are dissatisfied. When asked for ideas to improve the innovation climate, a strong division between the extra needs of startups and larger businesses becomes apparent. Startup innovative businesses mainly indicate the need for an inspiring work environment, connections with like-minded entrepreneurs and low entrance thresholds for things like working spaces, the many different facilities required and financing. Larger businesses emphasise their desire for links to the national and global economy and ways to bring this about.

Businesses in the top sectors Energy & Environment Technology, Semiconductors & Technology and Health are generally more positive than other Nijmegen businesses about the business climate in Nijmegen and developments here in recent years. Sources for this research include the Dutch business climate monitor in 2014-2015 and the Provincial Employment Survey (PWE, Provinciale Werkgelegenheidsenquête 2015). In addition, a selected number of innovative entrepreneurs in Nijmegen were surveyed. The innovation barometer is now being developed further and will be held every two years.

Large choice of locations for startups in Nijmegen



On April 12 city councillor Turgay Tankir officially opened the new building of Startup Nijmegen (photography: Fotopersburo Niek)

The municipality is keen to stimulate the founding and growth of startups across the whole city. To add to the high-tech locations for knowledge and technology startups on the NovioTech Campus and the Mercator buildings on the Radboud campus, on 12 April this year, city councillor Turgay Tankir opened StartUp Nijmegen's new building at Stationsplein 26. The service industry and self-employed entrepreneurs can come here for flexible working spaces and opportunities for support and coaching related to financing, marketing, administration and IT services. Until 2019 the city will be investing €400,000 in facilities for starting businesses and is maintaining contacts with partners in the city to help with general coordination and fast startup growth. Councillor for Economics, Employment and Income Turgay Tankir tells us that "Starting innovative businesses mainly need an inspiring work environment, connections with like-minded

At the end of last year the 1st Hackathon Nijmegen took place. In 48 hours over 40 students from 10 educational institutions worked together in 11 teams to develop new app solutions, demonstrating young software (and business) talent. The theme was 'CONNECTING Sports AND Health'. The winning team, Ulliemam, won the cash prize of €2,500 with their 'digital stop coach', an aid to giving up smoking. (photography: Fotopersburo Niek)



Economic Innovation

Together with its partners the City of Nijmegen has drawn up the Economic Innovation Agenda 2020. This focuses on enhancing the knowledge economy and business, emphasizing support to startups, facilitating SMEs and acquisition. Key cornerstones are:

More organization as well as innovations in SMEs

Cooperation between implementing organizations, knowledge institutes and governments and coordination of initiatives all create new opportunities: for business abroad, for instance, for the stimulation of innovation and for the use of knowledge. The partners of the Economic Innovation Agenda also want accessible amenities for smaller businesses such as working spaces, facilities and the creation of a community spirit. Apart from this, it also provides opportunities for strengthening the regional identity of larger businesses by promotion and positioning.

A proactive approach

The City of Nijmegen and the knowledge institutes want to work together to demonstrate Nijmegen's global areas of excellence so that it becomes clear which businesses are a good match, so that acquisition can be focused on businesses that fit in with the Nijmegen knowledge infrastructure. This in turn will lead to a strengthening of coherent clusters of knowledge institutes and knowledge-intensive businesses. The Economic Board Arnhem-Nijmegen will continue to put into practice regional positioning and promotion.

Enhancing the startup ecosystem

There now is a central spot (hub) for startups in the service industry with flexible working spaces for the self-employed, namely StartUp Nijmegen near the station. The aim is to also create an ecosystem for innovative Startups in the Nijmegen region, especially in the fields of Health, Semiconductors and ICT.

There are big opportunities for knowledge spin-offs, innovation and valorization within the 'power houses' Radboud University, Radboudumc and HAN University of Applied Sciences. The knowledge institutes stimulate and facilitate this development and students have united themselves in an organization: Entrepreneurial Nijmegen Students.

Startup locations such as Mercator Technology & Science Park, Novio Tech Campus, the two Innovation Labs (iLabs) and also the Splendor factory and the Honig complex show a positive trend. What's more, there are interesting networks for startups such as the ICT Network Nijmegen, the Science to Business Café and Science Meets Business.

Nijmegen has become an official partner of the organization StartupDelta, accelerating its recognition at national level. National and international private investors are exhibiting an increasing interest in investing in startups in Nijmegen and the Rockstart Digital Health Accelerator has also come to Nijmegen, bringing with it startups from abroad who fit in well with the Health cluster.

entrepreneurs and a low entrance threshold for aspects such as working space and financing. For this we are working together with partners in the Nijmegen Startup Ecosystem, such as the knowledge institutes, startup organizations and other businesses, whenever possible together with the municipality of Arnhem and the Province of Gelderland."

This also involves locations where many innovative startups have already established themselves: on NovioTech Campus that means mainly startups in chemistry, the life sciences & health and in the high-tech industry. Here there are laboratory facilities and support for their business development from SMB Life Sciences. On the Radboud University campus, innovative businesses can look towards the four Mercator buildings with their premium business spaces and flexible rental periods. This is where you will find science-based startups and other innovative businesses collaborating with Radboud University, making use of modern facilities, advice and networking events. University startups can take advantage

of Mercator Incubator Nijmegen. Businesses also have access to the research facilities of the university and Radboudumc. The HAN University for Applied Sciences also has locations here with many practical facilities. Nijmegen Heijendaal is not just the name of a train station, it also boasts the largest concentration of knowledge and expertise, new businesses and access to top-quality employment in the region. Novio Tech Campus also promises to go through a rapid growth in the coming years. The city of Nijmegen and the Province of Gelderland are therefore very much aware that to allow more growth, innovation and business activity in the city and the region, both campus locations in Nijmegen need to be enhanced by improving the infrastructure, public transport, accessibility and national and international promotion.

One of the Nijmegen startup locations:
Mercator II on Radboud University's Mercator Technology & Science Park Nijmegen (photography: Broer van den Boom Fotografie)



Mellon Medical winner StartUp50 Gelderland

CEO Liewwke de Jong was present in the Eusebius church in Arnhem on 25 May to receive the award as number 1 in the Top 50 of Gelderland startups. Mellon Medical, founded in 2013 and located on the Novio Tech Campus since 2014, develops equipment that enables surgeons to suture with one hand. The business owns the patent for one-handed suturing technology. The technique makes suturing more stable, faster and more precise.

Information: www.mellonmedical.com.

The age limit for the companies to be eligible for StartUp50 Gelderland was 7 years. Startups also needed to have growth potential and be of interest to investors. In addition to Mellon Medical, the startup-top includes several other businesses that are located on Novio Tech Campus or Mercator Science Park and are cooperating with the knowledge institutes, e.g. JointSphere, NovoLanguage, Xenikos, Yellowbag, Sit & Heat and Fysio24. For more information:

www.startup50 gelderland.nl

BBB Career Event

On 18 May, Prof. Stan Gielen, dean of the Faculty of Science at Radboud University, opened the annual BBB Career Event in the Huygens building. With an eye on their future career, students could meet over 45 businesses at the information stands and during various workshops.

Prof. Stan Gielen



*Liewwke de Jong
CEO Mellon Medical*



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ICT Network Nijmegen

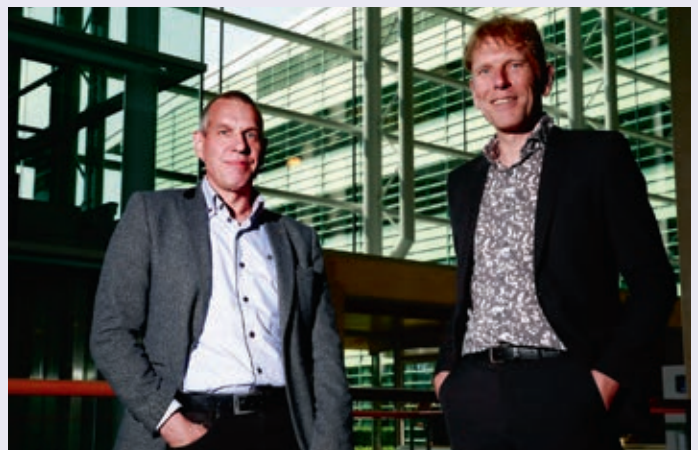
ICT & Health startups: Privacy & digital security

This spring the ICT Network Nijmegen had its second meeting on 26 May, topic: 'Identity, privacy & security in the digital society', organized together with Mercator Incubator and the Radboud Computer Science student association Thalia. Location: the Huygens building at Radboud University. Speakers: Jaap-Henk Hoepman, director of the RU Privacy & Identity Lab, and Ronald Pikkert, CEO of the Nijmegen business Tunix Digital Security, founded at the Academic Business Centre on the Radboud Campus at the end of last century. Earlier this year the 12th MeetINN took place on Novio Tech Campus about 'ICT & Health Startups', together with Rockstart and SMB Life Sciences.

Rockstart set up on the Novio Tech Campus with the accelerator programme Digital Health in 2015. "We create the best possible growth climate for startups with support from experts and access to our investor network", explains Klaas Jan Bolt, programme manager for Rockstart. In the past five years Rockstart had 58 startups in its 'stable', 54 of which are still in existence. In addition to 'Digital Health', they run accelerator programmes for 'Web & Mobile' and 'Smart Energy'. "Our main reasons for coming to Nijmegen were the infrastructure and the dynamics surrounding health & ICT," says Bolt. After three months of scouting, Rockstart received 220 applications from all over the world for 'Digital Health'. A selection of 25 startups was invited for interviews, then the remaining 10 startups introduced themselves to international investors on 'Demo Day'. Of the businesses nominated by Rockstart, Bruxlab and Teamscope gave business pitches during the meeting of the ICT Network Nijmegen.

Ad Linssen of Bruxlab: "**Bruxlab** has developed an app for diagnosing tooth grinding or bruxism. Almost 8 % of people are affected by bruxism, 85 % of whom remain undiagnosed." Teeth grinding leads to tooth wear, damaging the enamel. The app can be downloaded from the App store or Google Play. Your smart phone records during the night and the algorithm filters out tooth grinding for analysis, allowing you to test yourself to see if you suffer from bruxism. A beta version for dentists is being developed. Bruxlab attracted an investor and developed the algorithm to make the app suitable for other sleep disorders.

Diego Menchaca presented his pitch on behalf of Chilean firm **Teamscope**: "Teamscope is an app that facilitates medics from all over the world in sharing information. With Teamscope you can efficiently, securely and effectively collect and store research data, even without being online. Not only is this a way for doctors in remote places to connect to a knowledge network, it is also possible to do research with the stored data."



Speakers during the 13th MeetINN on 'Identity, privacy & security in the digital society': Ronald Pikkert, CEO of Tunix Digital Security (left) and Jaap-Henk Hoepman, director of RU Privacy & Identity Lab

Three people from the ICT network presented their pitches. **Ensie.nl** is a knowledge platform comparable to Wikipedia, "except that Ensie shares the knowledge of clearly visible authors," says Bart Welzen, founder of the site. "They write short descriptions of a subject, definition and explanation. We create a link to the LinkedIn profile of the authors, all of whom are students, professors or managers. They share their knowledge and on the basis of their contribution they can be invited as experts for advice or to speak."

Tictag is an app based on touch technology that registers data according to a stamp principle (comparable to QR codes and NFC chips). Pieter Heersink: "Together with Erwin Klerks we developed a platform at Kudoos for retail credit or loyalty programmes. Using our touch technology the retailer can put a stamp on the smart phone. The app recognises store stamps and adds credits. We are also developing a version for scanning health insurance cards and the like."

Yellowbag is a free shopping tool for online shoppers. Jasper van Elferen: "Shoppers look for special offers on comparison websites that can often save them 5 to 10 %. Yellowbag is an app that keeps track of discounts, checking shops and markets all over the world on a daily basis. If it finds price reductions in your favourite products, it sends you a message immediately. Our technology is unique and scalable. The beta version has already been launched and we want to roll out a new release in Europe."

www.ictnetwerknijmegen.nl



The impact of startups on Health innovation

With the theme of 'Startup impact on innovation in Healthcare - sharing experiences and future outlook,' the SMB meeting on the Novio Tech Campus was well-attended. Cees Buren, member of the Board of Directors of Radboudumc, congratulated host John Schalken and his team on the results achieved by SMB Life Sciences during the past three years in their support of starting entrepreneurs and entrepreneurial researchers in the sector Life Sciences & Health in the Nijmegen/Oss region.

EVENT REPORT



Cees Buren, member of the Board of Directors of Radboudumc

Cees Buren emphasized the importance of valorization and gave a short overview of the activities and instruments belonging to the Radboudumc Holding that was founded in 2007. The Valorization department provides support in obtaining Dutch and international research funding, patenting and the marketing of new technologies. The Patent Fund is responsible for IP rights and MedValue has specific expertise on early Health Technology Assessment, enabling them to analyse whether an innovative technology has a chance of success on the open market. In the past nine years, Radboudumc Holding has founded and recruited 19 businesses, providing employment equal to 153 FTEs, and netting 44 million euros of investment.

Cees Buren gave several examples of successful businesses such as **NovioGendix** who develop tests enabling cheaper and more patient-friendly methods of detecting prostate

cancer and other cancers. The business was founded in 2006 and was recently acquired by MDxHealth for 7.8 million euros. Another successful spin-off is **Radboud Translational Medicine (RTM)**, founded in 2011. In their cyclotron facility they manufacture radiopharmaceuticals complying with the international GMP guidelines, both for internal clients of Radboudumc and external businesses and institutions. The new cyclotron facility creates important new research opportunities in the field of molecular imaging. Cees Buren also named **ScreenPoint Medical**, founded in 2014 and specializing in the automatic detection of breast cancer with Computer Aided Detection

(CAD) technology. Also mentioned were **SPL Medical** (founded in 2015) who developed a contrast medium for detecting small cancer metastases in the lymph nodes, and spin-off business **TropiQ Health Sciences** (founded in 2012) who develop medication to stop the transmission of the malaria parasite.

MDxHealth

Two of the speakers at this SMB meeting were Dr Jan Groen, CEO of MDxHealth, and Prof. Jack Schalken of the recently-acquired NovioGendix. Both speakers gave their view on the synergetic advantages of this acquisition. Jan Groen says that due to the takeover MDxHealth will now be in possession of a non-invasive biopsy test for prostate cancer, giving them access to an enormous international market. NovioGendix is a spin-off from Radboudumc and was founded in 2006 by Nijmegen's Prof. Jack Schalken (Experimental Urology - Radboudumc), Dr Willem Melchers (Medical Microbiology - Radboud University) and business development consultant Ir. Rob Tweehuysen. In 2009 the company won the Mercator Award and was well on its way to business success. As one of the founders, Prof. Schalken is convinced of the advantages of the acquisition by MDxHealth. Both businesses focus on the development of tests for the assessment of prostate, bladder and kidney cancer. MDxHealth will be marketing NovioGendix's new urine test for prostate cancer under the name SelectMDx. This test makes it simpler and faster to assess if a patient has a dangerous variant of prostate cancer.

SMB regularly organizes the Science Meets Business network meetings where people can meet at the intersection of business, science and society. For the programme and dates, go to: www.smb-lifesciences.nl



Dr Jan Groen, CEO of MDxHealth



Prof. Jack Schalken, Professor of Experimental Urology - Radboudumc

According to Jack Schalken, MDxHealth is a good choice. "It is a 100 % urological business with an excellent reputation and a product pipeline in the field of urological oncology. Our portfolios fit together seamlessly and there is a good match between the management and the executive functions. As an R&D department in Nijmegen, NovioGendix fits in very well with MDxHealth. In turn," Schalken continues, "Nijmegen offers an excellent knowledge infrastructure for health care enterprises in the shape of Radboudumc and Radboud University. The acquisition by MDxHealth was therefore a logical step," concludes Jack Schalken.

Future outlook

After this, a number of entrepreneurs gave pitches on the development of their business and their future plans.

Hans Platteeuw outlined the development of his business Avivia: from startup to scaleup. Begun as a consultancy business in 2005, Avivia evolved from pharmaceutical product developer to a business with experienced team members, a well-equipped laboratory and a broad knowledge network. As inventor Avivia has been involved with over 60 patents in total, increasingly under their own management. In the next 5 years Platteeuw expects to grow into a business with 20 to 25 employees and an annual revenue of 10 million euros.

Innatoss Laboratories in Oss develops cellular tests for the timely treatment of infectious diseases such as Lyme disease and Q fever. Maarten van der Zanden explained that their business mission for the next few years was to become the best reference laboratory in the field of cellular diagnostics for infectious diseases.

Dr Inez de Greef, CEO of Treeway

That Innatoss can claim to be renowned worldwide is made clear by the fact that the US Ministry of Defence called in their help to develop a new vaccine against Q fever, for which a consortium was formed with partners like Massachusetts General Hospital and Yale University.

Every year about 600,000 people die of malaria. The parasite appears to be becoming resistant to current medication, which is consequently losing effect. Koen Decherer spoke about the TropiQ's new medicine that prevents the transmission of malaria. TropiQ received the sum of one million Dollars from the Bill & Melinda Gates Foundation for research into this new anti-malarial drug. The business is testing substances on an industrial scale that can block growth of the malaria parasite in mosquitoes, thus preventing the spread of the parasite from mosquito to man. TropiQ expects the final cost per patient will be only one dollar.

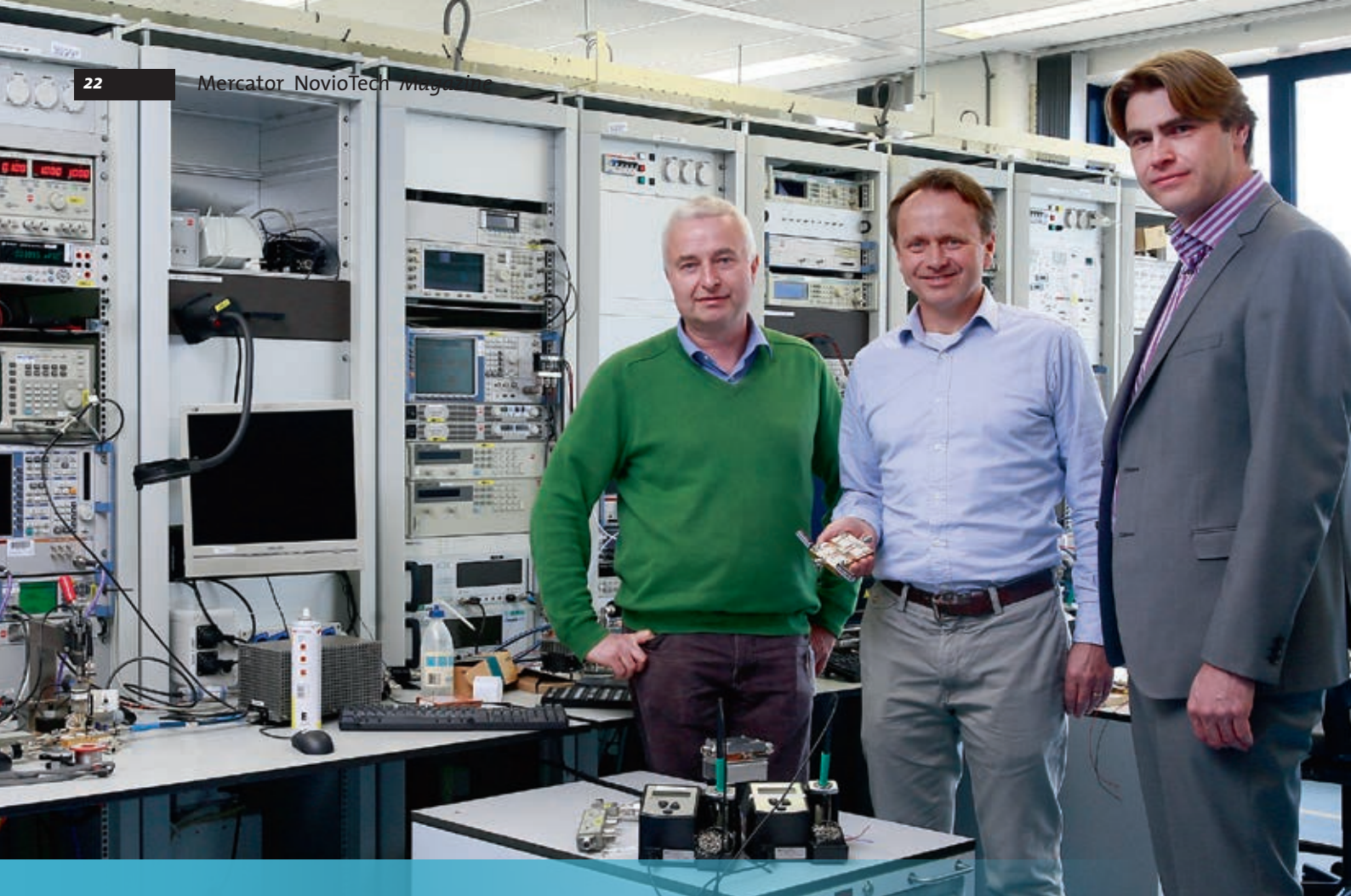
The final speaker was Inez de Greef of Treeway, a biotech enterprise that is developing medi-

cation for Amyotrophic Lateral Sclerosis, or ALS. Treeway was founded in 2012 by Bernard Muller and Robbert Jan Stuit, both ALS patients. During their search for suitable medication both founders decided to take the fundraising and research into their own hands. Together with a team of drug experts Treeway has developed the drug TW001, which Treeway now wants to test on patients. Based on a clinical phase II/III study with ALS patients, Treeway is aiming to gain clearance to market the drug. The new drug makes long-term daily use possible and oral administration is patient-friendly. The startup Treeway is a unique and inspiring example of how 'the patient' can be involved with the diagnosis and therapy of their own disease.

SMB regularly organizes Science Meets Business network meetings where people can meet at the intersection of business, science and society.

Programme and dates:
www.smb-lifesciences.nl





From left to right: Rik Jos, fellow in RF Technology at Ampleon, Nick Pulsford, Senior Vice President at Ampleon and Bart Jacobs, patent attorney at Arnold + Siedsma.

Ampleon: focus on RF energy

Since 2015 Ampleon, a spin-off of NXP Semiconductors, has been located on the Novio Tech Campus in Nijmegen. The business specializes in the development and manufacture of high frequency (HF) power semiconductors for data and energy transmission. Mercator NovioTech Magazine spoke with Nick Pulsford, Senior Vice President at Ampleon and Rik Jos, fellow of RF Technology at Ampleon, about takeover, product development and plans for the future. Also interviewed is Bart Jacobs, patent attorney at Arnold + Siedsma, about the management and development of the patent portfolio.

PATENT LAW

Ampleon's independent status has a remarkable background. NXP Semiconductors wanted to take over the American industry competitor Freescale Semiconductors, but this fusion would make their market share in RF power too high. In order to comply with the requirements set by the American antitrust authorities and to free the way for the planned acquisition, NXP decided to sell its own RF power department. With an investment of 1.8 billion dollars the Chinese investment company Jianguang Asset

Management Co. Ltd (JAC Capital) enabled the NXP RF power division to transform itself into the independent business Ampleon.

"We deliberately chose Nijmegen as the location for our main offices," says Nick Pulsford. "We have our roots here and it is where R&D, product development and assembly take place. Besides Nijmegen we also have a location in Shanghai from

which we serve the Chinese market, a design centre in Toulouse (France), an application centre in Smithfield (US) and a manufacturing site in Manila on the Philippines. Globally we have about 1,300 employees, 300 of whom work in Nijmegen. We are developing a complete range of LDMOS (laterally diffused metal oxide semiconductor) and **GaN** (gallium nitride) **RF signal amplifiers** for the transmission of data and energy. We have a global business and focus on various markets with varied applications. The mobile infrastructure market, for instance, for which we supply signal amplifiers for cellular networks that send signals to mobile users from base stations. In the coming years the quantity of telephone and data traffic will increase tremendously, and networks will need extensive upgrades. This requires a new type of signal amplifier with a higher bandwidth and more power. We also develop products for the broadcast market, aerospace and defence, as well as for industrial lasers and medical equipment. Our main focus is on the new market for **RF energy**. Instead of data transmission, this deals with energy transmission. RF energy is a real growth market for us, and we are active in both the consumer and commercial markets of cooking, lighting, heating and drying. Ampleon is also one of the founders of the RF Energy Alliance, an alliance of businesses that are interested in innovative applications of RF power technology as an adjustable source for heat and power."

"We are working on new applications based on the GaN technology, the first products of which we have just marketed," adds Rik Jos. "The material gallium nitride is very suitable for high-power and RF technology, because it is very reliable at higher voltages and temperatures. An important application is the future 5G technology, the fifth generation mobile communication technology, which demands a very high frequency. In contrast, the current mobile communication infrastructure operates in a frequency range of 2 to 3 gigahertz, whereas with the 5G technology we are talking about a range of dozens of gigahertz. The entire mobile infrastructure and digital control will change completely as a result. Separate antennas will be replaced with antenna panels sending signal bundles. We don't expect 5G before 2020. It seems far away now, but so many aspects have to be researched and developed that we are already busy working on it to be ready in time. Data traffic will increase a lot, to make sure everyone can be connected everywhere.

Another of Ampleon's important innovative applications is '**solid state cooking**', a big improvement on today's microwave technology. For solid-state cooking we use several RF sources to get energy to a specific place. The heating process is constantly monitored and if necessary adjusted to make cooking much more efficient, faster and increase food safety, but in particular to make food better-tasting. The food products are heated or defrosted evenly, instead of an over-heated outside and a half-defrosted inside. This technology can be applied to consumer equipment as well as to industrial food preparation, but also in medical environments, where the even defrosting of blood plasma ensures the structure is not damaged.

In lighting we have developed some interesting innovative applications as well. In cooperation with the HAS University of Applied Sciences for Agro, Food and Landscape, we have set up a research programme on the **application of plasma lighting in greenhouse horticulture**. It researches the effects of the light spectrum of plasma lighting on the growth, quality and taste of crops. Plasma lighting is energy efficient and sustainable and gives a warm natural light, ideal for use in stadiums or for street-lights. Plasma lights, or LEP lights (light emitting plasma), make use of HF power semiconductors that heat the gas in the lamp, giving a light spectrum comparable to that of natural sunlight."



Patent portfolio

"We stimulate all our designers to record their findings," continues Nick Pulsford. "Based on that research information we assess whether something deserves to be patented or if we should treat it as a 'trade secret'. Sometimes you choose not to publish something and to keep certain findings secret. We have a broad patent portfolio allowing us to cover certain application fields in technology, design or packaging."

As patent attorney at trademark and patent office Arnold + Siedsma, Bart Jacobs is on location one day a week for advice and support concerning the patent portfolio. Bart Jacobs had been working for years at NXP as an RF circuit designer for mobile phones. Because of this he has excellent knowledge of the organization, the design process, the product and the market. "Decent IP management is crucial for an innovative high-tech enterprise like Ampleon. It is an important part of the business strategy," he emphasizes. "When someone was needed at the newly-founded Ampleon to manage the patent portfolio, we started discussions. It was a good match from the start and now I'm here on location one day a week on behalf of Arnold + Siedsma. Whenever there's a problem with a patent application or if there are other patent-related questions, I can quickly contact the person in question. Ampleon has a substantial portfolio with many patents in their field. When they became independent in December 2015 these were transferred from NXP to Ampleon."

What has changed now that Ampleon is an independent business? Nick Pulsford: "At first we were a business line within a larger organization. At the time we weren't a core business and had an R&D budget in line with that. In contrast, the development and manufacture of HF power semiconductors is Ampleon's core business with considerable growth potential. When JAC Capital decided to invest in Ampleon, the R&D budget was immediately doubled. This enabled us to hire extra employees to boost the research, development and engineering capacity and thus to gain competitive advantages. Our Chinese investor wants to float Ampleon on the stock market within two years, so everyone is prepared to invest in the continuing growth of our enterprise. Growth is good for Ampleon, but no less so for economic development in the Nijmegen region."

www.ampleon.com/arnold-siedsma.nl



Social and technological innovation

Topics such as the changing society, technological and social innovations and local startups were discussed at the public meeting held by Rabobank Rijk van Nijmegen. Guest speakers were Danny Mekić, Mike van Rijswijk and Oscar Kneppers.

The power of the Rijk van Nijmegen

In his opening speech Antoine Driessen, chairman of the board of Rabobank Rijk van Nijmegen talked about opposing economic developments such as the increasing internationalization versus the importance of the local economy. He mentioned the linear economy which is currently still in the lead, but which is slowly being replaced by the circular economy, aimed at maximizing the usability of products. The central theme of his message was that besides industrial innovation, social innovation in particular is playing an ever more important role. Social innovation is the result of long-term cooperation. The cooperative mindset of Rabobank is exceptionally well adapted in this respect. There is good reason why Rabobank is joint initiator of the research into the 'Power of the Rijk van Nijmegen'. The purpose of this research is to give a focused incentive to sustainable development of the Rijk van Nijmegen based on well-founded knowledge and balanced arguments, with the aid of targeted projects, together with stakeholders and partners. It considers coherence and connections within the Rijk van Nijmegen and the surrounding areas in terms of commuting flows, purchase flows and commercial relationships between businesses, making use of existing statistics, research and dialogue sessions. "As a cooperative bank we like to contribute to strengthening local society," says Antoine Driessen. "That is why we started this research together with seven municipalities in this region." The findings of the research and the ideas from the dialogue sessions will be collected in a

list of opportunities and concrete projects with the title: 'Rijk van Nijmegen 2025'.

Digital health is on the rise

During this meeting innovation experts Danny Mekić and Mike van Rijswijk presented the robot NOA and addressed the opportunities and possibilities for robotics. The NOA generation of robots is very popular in Japan and is constantly being developed further. In the Netherlands the robot has now been introduced in the health care sector. Oscar Kneppers, born in Nijmegen and founder of Rockstart, emphasized the immense growth opportunities for Digital Health: health on the intersection with technology. Rockstart provides knowledge and support to startups and offers them access to mentors, networks and investors. Rockstart gives support in four formats: *Rockstart Accelerator*, a programme where startup businesses are fine-tuned and prepared for market launch; *Rockstart Spaces* which offers spaces for networking and events; *Rockstart Answers*, a feedback event where questions from startups are answered; and *Rockstart Impact*, an accelerator programme with Nepalese entrepreneurs. Rockstart has so far supported 58 businesses, 75 % of which were able to obtain further funding totalling about 30 billion euros. The businesses Rockstart supports have a number of things in common: they are innovation-driven, technology-oriented and globally scalable.

There are currently three accelerator programmes, themed Web & Mobile, Smart Energy and Digital Health. The latter programme takes place on Novio Tech Campus in Nijmegen. Oscar Kneppers is certain: "Digital Health is on the rise." He therefore predicts an enormous growth market with opportunities for startups in digital health that offer innovative solutions in the fields of Preventive Health (preventing illness), Connecting Patients (optimal connection between patient and caregiver), and Health Communication (flexible data access).

Inspiration meeting on June 28

“Social Enterprise”, Radboud University

Tuesday afternoon on 28 June, 3 p.m., an inspiration meeting for startups, entrepreneurial students and researchers will take place in the Grotius building at Radboud University. Under the slogan ‘Think Social, Act Business’ young and experienced entrepreneurs will share ideas on Social Enterprise, meaning businesses that primarily pursue social goals and added value to society. Earning money is a means to achieving those goals. Academic knowledge is used as the basis for innovations, new businesses and employment, and it contributes to a solution for societal issues. Students and researchers strive for societal impact and work on a future as social entrepreneurs. Inspiring examples will be looked at during the meeting on 28 June, organized by Radboud Innovation and the Anton Jurgens Fund. Director Mark Hillen of Social Enterprise NL will give a presentation on Social Enterprise in practice. Afterwards we will look at more cases and Prof. Bert Steenbergen, Professor of disabled care at the Faculty of Social Sciences at Radboud University, will give an introduction, discussing innovations and enterprise in



Lara Depla of student company Agreen and Vera Spiridonova of Start Up Mix (right), on their way to a pitch at “Social Enterprise” on June 28.

health care. Finally, starting social entrepreneurs will be given the opportunity to present their pitch and make new contacts. All those present are asked to give their input and give

advice, and to stimulate and support new initiatives for social enterprise. Entrance is free, registration is required. More information: www.ru.nl/radboudinnovation

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“With passion, determination and perseverance, there is much to gain for both business and leisure”

Dinali (Alaska)

Motus: affordable innovative motion solutions

“Affordable solutions offering mobility to people to whom movement does not come naturally”, that is the mission of Motus, a new business unit of CCC Projects & Engineering. In the ten years of its existence, CCC has developed into a widely-oriented engineering firm focusing on three key elements: enabling support for customers, execution of projects for clients and development of products.

Right now the product portfolio of Motus' new business unit comprises three health care products with 'mobility' as the common thread.

Leg Agitator

Dick Sas, CEO and founder of CCC Projects & Engineering, is completely involved with innovation at his company at a personal level. “Our success is determined by the cohesion and synergy in our team of over 20 highly-educated, experienced and dedicated designers and engineers in the field of mechanical and electronic control. Two years ago we were approached by the Siza care organization, asking if we could develop a leg agitator for people with multiple handicaps who are unable to move their legs. This would allow them to ex-

ercise in spite of their physical limitations, thus maintaining some suppleness in their joints and stimulating their circulation. After a proof of concept we fabricated a prototype, four of which are now being used in Het Dorp (a 'village' created especially for people with handicaps). The second version has been finished, the marketing plan is almost ready and it will not be long before we are going to actively market the product. We have had branding research done and formulated our core values and mission. Our mission is that everyone should be given the opportunity to be mobile and we want to design and produce affordable products to make this possible. 'Being mobile' does not just mean moving physically, but also has the meaning of 'moving emotionally'. The term Motus (Latin for

movement) therefore does an excellent job of conveying the meaning.”

Motus Mountainride

Inspired by one of our colleagues and Ruben de Sain, the paraplegic who made the headlines because of his crowdfunding action for his own robosuit, the ReWalk Exoskeleton, we had the idea of developing a mountain bike for paraplegics with stable torso functions. We developed a hand-driven trike with a spectacular geometry, providing all the sporting experience features common to normal mountain bikes. At the moment the testing phase is in full swing and the design study is nearly complete. We want to market this care product with the name of Motus Mountainride. The basic model will probably be followed by another version suitable for road travel and a version with an electric motor.”

Indoor Roller Trainer

The third Motus product is the Indoor Roller Trainer, a set of rollers on which you can place your wheelchair for home-training. This development started out as a request by the disabled brother of one of our colleagues.

In other words, our new Motus brand arose spontaneously and organically. Organic growth is a logical way to grow, making a company fit for the future and constantly offering new perspectives. At Motus we place great value on the idealistic aspect and we want to express our social commitment, but just as important are employee engagement, pride in our products, the urge to innovate, our image and how our clients view us.”

Dick Sas sends out an invitation: “We actively encourage interested parties and patient associations with requests for mobility solutions to contact us. First we will look into feasibility, then search for a suitable solution. We would also be interested in possible partnerships with other businesses to do this”, says Sas.

www.ccc-engineering.nl



The Economic Board hands-on strategy

Recently The Economic Board was started up with the aim of joining the forces of entrepreneurs, knowledge institutes and government in the region Nijmegen - Arnhem - Wageningen: a Triple Helix collaboration. The Economic Board has 15 members, chaired by Hubert Bruls, mayor of Nijmegen. We spoke with Sigrid Helbig, director of the project agency supporting The Economic Board.



Sigrid Helbig has many years' experience in various executive functions with large companies such as Koninklijke Frans Maas Group, De Rooy Holding and Van Huët. She is familiar with the (re)structuring of complex organizations, optimizing business processes and planning and executing projects. Sigrid Helbig describes herself as a pragmatic go-getter: "I prefer concise to-do lists to hefty reports, standing with my own two feet firmly on the ground."

Growth sectors and successful crossovers

"The big challenge for me is to bring out the strengths of all three partners in the Triple Helix. The good thing about setting up a new organization is that you can start from scratch. First making an assessment and selection of the priorities, then determining the strategy, while at the same time organizing the basics for realizing a workable organization, from logo to desk chair. For our office location we chose the commercial building Mercator II at the edge of the Campus in Nijmegen, close to the Heyendaal train station. The objective of The Economic Board is to strengthen economic growth in the Arnhem, Nijmegen and Wageningen region. This region has enormous potential, but is not yet cashing in on it sufficiently. Joining forces should lead to tangible results such as economic growth, an increase in employment and a better (international) competitive position. We focus on the growth sectors Health, Energy and Food and the development of successful crossovers between these sectors. Following examples such as Silicon Valley or Brainport Eindhoven, we want to put this region on the national and global map as 'the place to be' for these three top sectors because of the excellent infrastructure and opportunities for locating a business. To achieve this it is important for us to clearly define the audience we want to reach, but also to present the same message at home and abroad."

Group Decision Room

She continues: "We recently organized a 'group decision room' for which we developed a strategic agenda according to the Business Model Canvas. This now has to be turned into concrete action as soon as possible. With a proper action plan and good branding we need to make clear to international businesses how interesting this region is. Not merely copying what has already been carried out perfectly well by organizations such as Health Valley, Food

Valley, kiEMT OOST NV and locations like Novio Tech Campus, Mercator Science Park or Industrial Park Kleefse Waard. Our aim is to combine this kind of successful initiative and promote them in a more powerful way. For example by facilitating trade missions, inviting foreign parties to become acquainted with our top sectors, or managing the representation at trade fairs and events. Another essential element is putting the regional 'innovation jewels' in the spotlights and promoting them globally. We have already noticed that people want to use The Economic Board as a driving force to make this happen. We want to connect parties and make sure projects progress. The members of The Economic Board each have an excellent network to add to their knowledge and experience, and we're making good use of them. Our neighbour here in Mercator is Radboud Innovation and they are a great connection for following innovations and making contacts. This region has everything it needs to develop into an even stronger economic region. With The Economic Board we want to accelerate this progress. Creating good connections between the top sectors and highlighting interesting crossovers is central to our goals. Interaction between business, knowledge institutes and government forms the foundation."



Drs. Sigrid Helbig, director of The Economic Board, 'in her office' in the Mercator II building at the Mercator Science Park in Nijmegen

The Economic Board consists of 15 members. The knowledge institutes are represented by Kees Boele (HAN University of Applied Sciences), Peter van Dongen (Van Hall Larenstein), Ben Geerdink (ROC RijnIJSsel), Leon van Halder (Radboudumc) and Gerard Meijer (Radboud University). On the business side, Marcel Hielkema (VNO-NCW), Peter Molengraaf (Alliander), Monique Noomen (Eiffel), Edwin de Rooij (Synthon) and Charles Smit (NXP) are participating in The Economic Board. On behalf of govern-

ment institutions, the representatives are mayor Hubert Bruls (Municipality of Nijmegen), city councillor Ron König (Municipality of Arnhem), mayor Toon van Asseldonk (Municipality Overbetuwe) and Michiel Scheffer (executive of the Province of Gelderland). The participation of mayor Cees van der Knaap (Municipality of Ede) ensures the connection with the Food Valley region (Ede/Wageningen).

The Digital Workshop

The former weaving mill NYMA, newly rechristened Cultuur-spinnerij (Cultural Spinning Mill) De Vasim, was the setting for the Digital Workshop last 22 and 23 February. The event was organized by search engine Google, credit provider Qredits and the municipality of Nijmegen. Its aim: to help startups and starting entrepreneurs with online growth opportunities.



Turgay Tankir, Nijmegen city councillor for Economics, Employment and Income

Self-employed freelancers and small businesses in the Netherlands do not fully utilize the growth opportunities which the internet provides and, though the economy is recovering, future growth is not guaranteed. 48 % of the Dutch employment market is made up of freelancers and small entrepreneurs who represent a large growth potential. According to the CPB (Netherlands Bureau for Economic Policy Analysis), small enterprises lack the knowledge about how technology may help to realize this growth. The internet offers them opportunities and Google would like to help entrepreneurs on their way. The common ground shared by Google and Qredits is their vision about the recovery of the economy in which digital knowledge and skills as well as financing opportunities have a key role to play.

A vibrant startup climate

The director of Google Netherlands Pim van der Feltz opened The Digital Workshop: "The threads spun in this former spinning mill could be symbolic for the network threads that we are 'spinning' on the internet nowadays. The internet provides enormous growth potential for starters. Research shows that companies that embrace the internet create more jobs and grow at twice the rate of other companies. An entrepreneur who has a great idea today has the capability to present it to three billion people on the same day", says Van der Feltz.

Turgay Tankir, Nijmegen city councillor for Economics, Employment and Income, clarified the three aims that the municipality of Nijmegen wants to achieve for entrepreneurs: strengthening the

organizational capabilities of SMEs, raising the international profile of Nijmegen as a city of knowledge, and encouraging young entrepreneurs. The Digital Workshop is a good instrument for supporting young entrepreneurs by exchanging digital knowledge. "Our municipality boasts a large supply of small businesses, startups and self-employed freelancers. Digital presence is important for their marketing. We are a city of knowledge, a city with many innovative entrepreneurs and highly-qualified knowledge institutes such as the HAN University of Applied Sciences and Radboud University. No less than 50 % of the Nijmegen working population is highly educated. Furthermore, Nijmegen has a lot to offer culturally and is also a socially sustainable city. Together with other organizations we wish to support this kind of initiative, to offer the expertise required and to see to it that this knowledge is retimed, both locally and regionally. Nijmegen wishes to organize the necessary platforms and connections and thus ensure a vibrant startup climate."

In addition to Google's tips about enhancing brand recognition, improving online findability and measuring results, Qredits provided information about various forms of financial support. Qredits is a private non-profit institution that offers entrepreneurs in the Netherlands support for a successful start or investment in their company, offering credits up to € 250,000, coaching and tools. In the last few years Qredits has financed over 7,000 entrepreneurs for a total sum of € 130 million.

Roy Spit, commercial director of Qredits: "For entrepreneurs who are starting or who want to finance their growth, it is important to know which channels are currently available. In the US 80 % of financing is now being generated outside the banking circuit. Qredits advises entrepreneurs about alternative forms of finance such as crowdfunding, factoring, leasing or combinations of various forms of finance."



Pim van der Feltz, managing director of Google Netherlands (on the left) and Roy Spit, commercial director of Qredits

FREE CONSULTATIONS BY GOOGLE

In Nijmegen, Google holds free appointments every two weeks where entrepreneurs can consult Google specialists for free with queries about findability on the internet or the surfing behaviour of website visitors. The free appointments have been incorporated into StartUp Nijmegen, a network of entrepreneurs. According to StartUp Nijmegen, Nijmegen is the first municipality in the Netherlands where Google is offering this service. It is a follow-up to the successful two-day training given by Google in February. City councillor Turgay Tankir is enthusiastic about how Google and StartUp Nijmegen are helping entrepreneurs in this way. The appointments with Google specialists last half an hour and are freely accessible for entrepreneurs from the region. You can register for these appointments via startupnijmegen.nl

Radboud Sports Centre

50 years old!

Nijmegen and sports are inextricably linked. 2016 is a year in which Nijmegen is putting itself on the map as a major sports city. Consider fantastic events such as the 100th Four Days Marches, the many running races, and not least the Giro d'Italia and the Special Olympics.

For many inhabitants of Nijmegen the Radboud Sports Centre, part of Radboud University, has become a household name. Everyone is welcome here: students, private individuals and (larger and smaller) businesses. Many feel at home in the Gymnasium at the Heyendaalseweg. **This year the Radboud Sports Centre celebrates its 50th anniversary!**

With over 70 different sports, the Radboud Sports Centre has something on offer for everyone. You can choose from more than 600 classes a week. Professional instructors are always present, we have long opening hours (110 hours a week), and of course subscriptions can be cancelled per month.

On Friday afternoon, 30 September we will celebrate our 50th anniversary with a symposium on 'The power of sport', with a big party in the evening. Once again, everyone is welcome. More information can be found on our website www.ru.nl/sportcentrum.



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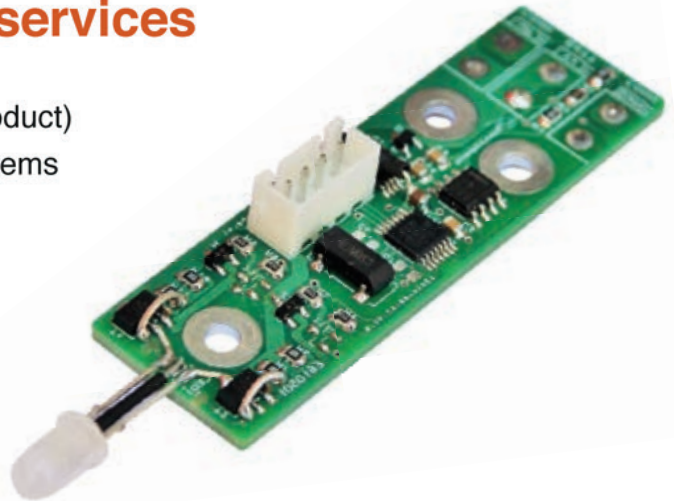
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The Mercator Technology & Science Park has a unique location at the edge of the university campus, in an area shared with large R&D orientated companies. Moreover, the presence of prominent research based institutions makes it a handy meeting point for young talent. Research and enterprise go hand in hand, resulting in many economic innovations and external contacts.

BV Campus matches your accommodation needs with the possibilities at the Mercator Technology & Science Park, or elsewhere on the grounds of Radboud University. Would you like to receive more information? Please contact us on +31 (0) 24 361 16 53.

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