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UT
SPECIAL
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NIKOS

15th
ANNIVERSARY

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COLOPHON

This journalistic, independent special edition of UT News was drawn up together with NIKOS, the Netherlands Institute for Knowledge Intensive Entrepreneurship.

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FOREWORD



NIKOS (Nederlands Instituut voor Kennisinnovatief Ondernemerschap) was the first academic center for entrepreneurship in the Netherlands. Founded 15 years ago, on the 10th of October 2001 to be precise, we now celebrate our 15th anniversary. We do this by organizing 15 events for the UT community and the Twente region, as well as with this UT Nieuws special in which we proudly present our group and its activities and ambitions. The NIKOS staff of Entrepreneurship, Strategy, Innovation, International Management and Marketing (ESIM) now cluster their research endeavors around 3 thematic lines:

- 1 Technology Entrepreneurship, which is defined as ‘recognizing, creating and exploiting opportunities, and assembling resources around a technological solution, considering the co-creation of a venture together with the realization of the opportunity. There is a specific research strand on global (High Tech) start-ups and international entrepreneurship, and on social entrepreneurship.
- 2 Collaborative Innovation & Networks, concerning (small) business development in (regional) networks, organizing open innovation, innovation impact and university-industry interaction, and new strategy topics such as family firm management, smart industry and Industry 4.0. There is a special sub research line focusing on digital marketing for networked businesses.
- 3 Entrepreneurial Behaviour & Leadership: in the start-up context, this research line at NIKOS looks for example at 50+ entrepreneurship and stress in entrepreneurship. We also look at entrepreneurial behaviours and leadership related to how new initiatives are encouraged and sustained in the long-term interest of established organizations. This includes topics of corporate entrepreneurship, institutional entrepreneurship and corporate responsibility.

NIKOS staff teaches courses in the BSc and MSc (International) Business Administration, in the minors Crossing Borders and Innovation, Entrepreneurship & Business Development, as well as entrepreneurship, innovation and business skills modules for several other UT programmes, and international double diploma’s. Our yearly summer school EntrepreneurialU is the most recent and very successful course, and we are involved in developing new entrepreneurship and innovation education, also for UT staff and PhD students.

We hope you enjoy this special which also includes examples of our European projects and industry collaborations. We are continuously seeking new partnerships within and outside UT and we would very much like to welcome you to contact us, or visit one or more of the upcoming NIKOS 15 years’ events and PhD defenses with the latest insights from our fields and featuring renowned international guest speakers. See page 23 for the calendar of NIKOS activities.

Looking forward to getting in touch & exploring entrepreneurial and innovative avenues together!

Petra de Weerd-Nederhof

Professor of Organising Innovation & NIKOS Department Head

FOUNDING FATHER AARD GROEN LOOKS BACK

'It actually started with a plan that lay gathering dust for years', says founding father and first director Aard Groen of the establishment of NIKOS (ESIM). 'I had only just started working at UT when I came across a business plan from 1996. I immediately thought: let's do it.'



'The challenge is to think bigger than you are'

NIKOS was established five years later in 2001. 'We wanted to connect three groups', Groen reminisces. 'Marketing, entrepreneurship and the transfer group had to be represented. A specialist working group came together, under the leadership of Professor of Entrepreneurship Wim During, Head of Entrepreneurship of the liaison group Peter van der Sijde, and Aard Groen. They were to shape the 'entrepreneurial university', as former rector of UT Harry van den Kroonenberg called it, further. 'The rector at the time, Frans van Vught, was also a great advocate and supported the initiative wholeheartedly', says Groen. Education, research and entrepreneurship NIKOS has always rested on three pillars: education, research and the practical promotion of entrepreneurship. 'The Entrepreneurship minor was the first product of NIKOS, the research focused on partnership for innovative entrepreneurship, amongst others', Groen continues. "Kansrijk Eigen Baas", which started in 2003, immediately became a successful support platform. Rabobank wanted to see more entrepreneurship in the Achterhoek and later, Overijssel. We established a specialisation track for aspiring entrepreneurs, with entrepreneurship, knowledge development, networking and coaching. Five hundred people – of whom sixty percent were unemployed – participated. Four hundred of them eventually set up their own businesses.'

SPIN-OFFS

It was an important moment in 2007 when the Twente Innovation Platform enquired as to why there were so many small spin-offs in Overijssel and only a few large companies involved in the production of all kinds of premium technology products. 'We conducted research into that', says Groen. 'The conclusion was that many high-tech entrepreneurs unintentionally start off unqualified. Often they do not translate their knowledge and expertise into market demand and spin-offs remain small Research and Development consultancies, which incidentally often do well. Together, they are responsible for thousands of jobs in Twente, but unicorns like Thuisbezorgd.nl are exceptionally rare.'

In 2009, that research resulted in VentureLab Twente. Academics, experienced (former) entrepreneurs, experts and managers help (student) entrepreneurs get off to a good start or with the successful evolution of their companies. 'At that time, we had about eight hundred spin-offs, of which over 95 percent were small', according to Groen. 'We therefore devised a method to support them in developing further in the period 5 to 10 years after establishment. The crux remains that entrepreneurs must make their products truly

market oriented. A market oriented product coupled with ambition, a qualitatively good team and a market oriented network enables you to attract investors and clients.'

EVOLUTION

According to Groen, four factors are important in order to evolve as a spin-off. 'Strategy development, organisational development, network development and economic development form the basis', he says. 'Together, they determine whether you are able to develop further.' Because the challenge is to think bigger than you are. 'Usually, costs come before profits. You first have to invest, you only start earning later. Your organisation must be open to a strategy that investors can support. This usually happens through a number of twists and turns: financing and expanding until your business is big enough to create genuine value.'

Examples of successful spin-offs are Booking.com, Thuisbezorgd.nl, Clear Flight Solutions and Xsens. 'Xsens is an example of long-term vision', says Groen. 'That company went through three business models and adapted its organisation to the market. That long-term strategy paid off: it was sold and has now become a sustainable technology company.'

DATA SET

Unique to NIKOS is that these types of businesses are supported and that knowledge flows back into academia again. 'We monitor the companies during the project year, the year in which businesses receive support. That produces a unique data set that in turn is useful for education and research. That is unusual in our field of study. In an academic hospital, it is entirely normal to learn from practice, but it is far less straightforward in Business Administration and Engineering and Technology. For example, earlier this year Arjan Frederiks (see page... of this special) obtained his doctoral degree with distinction on the subject of how entrepreneurs can apply imagination.' The success of NIKOS has not gone unnoticed. The University of Groningen approached UT three years ago: how do you do that, promote entrepreneurship? 'I was then given the opportunity to repeat this feat in Groningen, where I also lead the Centre of Entrepreneurship (UGCE)', he says. 'Naturally, it is a wonderful challenge to promote entrepreneurship further there too. And as a professor at both institutions, I can help strengthen the links between Twente and Groningen. Such connections are abundant in industry in the Northeast of the Netherlands and that provides both NIKOS and UGCE with a very useful foundation for developing research and education and promoting entrepreneurship.' |

THE POWER COUPLE

FROM NIKOS

Arjan Frederiks and Silvia Costa have had a busy year. They both finished their PhD thesis and graduated cum laude, they got married, they moved to Boston, they continued their research, they had a baby and now they moved back to the Netherlands. And NIKOS has played a big part in their romance and work.

Although they both carried out their PhD research at NIKOS, the University of Twente was not where their paths crossed for the first time. 'We met in 2011 at a conference in Spain,' says Silvia Costa, who comes from Portugal and was a PhD candidate at ISCTE-IUL in Lisbon at the time. 'I wanted to have an international experience and meeting Arjan played a big role in deciding to spend time at NIKOS, but NIKOS was the perfect place for me anyway, because my work was related to psychology of entrepreneurship.'

IMAGINATION

'I was a PhD candidate at NIKOS and we wanted to be together, so when Silvia got the opportunity to come to the Netherlands, we didn't hesitate,' continues Arjan Frederiks. His PhD research was focused on the use of imagination in entrepreneurship. He was aiming to under-

stand what exactly imagination is and how entrepreneurs use it when running their business. 'One part of my work was Diary Research, asking Twente entrepreneurs to write diaries about their activities. We also conducted an experiment with students of entrepreneurship to see if imagination leads to better business ideas.'

In this experiment, several types of questionnaires, which each required the use of a different type of imagination, were distributed among students. Afterwards, the students were asked to think of business opportunities based on the given description of technology. 'We found out that the group that had to use prospective thinking, meaning thinking focused on the future, ended up with the best results,' explains Frederiks, who graduated cum laude in January 2016.

CUM LAUDE PHD

His wife managed to do the same in April 2015. 'She is always ahead

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THINKING OUTSIDE THE BOX

Annemarie Ridder (60) has been working for the department since NIKOS was established. She is the Coordinator of Business Projects. At present, she is working on the Business Skills course of learning as part of the IBA bachelor's programme, amongst other things.



of me with everything,' laughs Frederiks. During her PhD research, Costa was examining how entrepreneurs think and how students could be taught to replicate this thinking. 'I tried to understand how university students perceive and recognize business opportunities. I studied entrepreneurial learning, what entrepreneurs need to learn to be successful and how they think and act throughout the process,' describes Costa. She even developed a special course about opportunity recognition, which she still teaches.

Once Costa received her PhD degree and Frederiks was also nearly done with writing his thesis, they embarked on a little personal and professional adventure. One month after Costa's graduation, the couple got married and two weeks later they moved to Boston, specifically to Northeastern University where Costa got a Postdoc position and Frederiks worked as a visiting professor. 'We wanted to see different places and ways of working,' Frederiks explains why they decided to

spend a year abroad. 'It allowed us to develop ourselves personally and professionally.'

SETTLING DOWN IN GRONINGEN

Living in a new country wasn't their only personal venture. 'Our son was born in April in Boston,' smiles Costa. 'It seemed like a natural next step.' Now the couple is back in the Netherlands and they both work at University of Groningen's Centre for Entrepreneurship that was started by Aard Groen from NIKOS. 'He is bringing real entrepreneurial spirit here and we are happy to help with that,' says Frederiks. 'It's great to be able to directly combine research and practice, which is something NIKOS does very well.'

'Indeed, the added value of NIKOS is the great bridge between research and practice,' agrees Costa. 'That way we can really contribute to the lives of entrepreneurs.' |

I have always worked on projects at NIKOS and these projects always involve entrepreneurship and commercial knowledge transfer. What appeals to me so much about entrepreneurs is that they are often people who think outside the box. I grew up as someone who thought inside the box. It was refreshing to encounter all kinds of people who take far more control of their

own fate, and often that of others. If they are very successful, they can even change entire institutions, bring about considerable shifts. Entrepreneurs are often inspiring. Learning to think with an entrepreneurial mindset was an eye-opener for me: it's all about thinking for oneself and actively shaping what happens. In my new role as coordinator and organiser of activi-

ties for the IBA programme, I think it will be enjoyable to reinforce the connection with business practice. One of the best projects I have worked on is entrepreneurship for women at universities. I still believe this is an important theme and I hope it will receive more attention in future. Fortunately, I see that more girls are joining our EntrepreneurialU summer schools.' |

THE CROSSING BORDERS MINOR

Martin Stienstra is an experienced traveller. As an International Management lecturer and researcher at NIKOS, he flies across the whole world. He now shares his experience with students going on study tour. The Crossing Borders minor was created especially for that purpose.

Yes, he has been to about forty countries. Oh and there are still plenty of things he wants to do. 'Trekking through the Balkans, for example. Starting in Turkey and finishing in Austria, or something like that', says Martin Stienstra, coordinator of the Crossing Borders minor. 'The minor was created by combining my International Management & Exploration minor with Laura Franco's Sustainable Development in Developing Countries minor.'

The combined module helps students prepare for their overseas study tours. 'We do this at macro level. We look at the situation in the country; where are you going? Most students have absolutely no perception of the country. They just want to go overseas. We try to impart to

them that above all, they should not think in terms of Dutch culture.' Stienstra draws on examples from his own travels to convey what other cultures are like. 'Computer Science students recently travelled to Singapore, Malaysia and Indonesia. In those countries, large corporations are often owned by wealthy, powerful families. That is quite different to the way it is in Europe. It helps if you are not too direct in conversations, for example.'

In addition, Stienstra provides input in respect of themes that students can broach during a working visit and conversely, which subjects they should not discuss. 'Sometimes students do not see the benefit of the preparation immediately, but on their return, we often hear that it was useful.' |

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WORKING TOGETHER ON AN EQUAL FOOTING

Raja Singaram (38) is back in the Netherlands briefly for his PhD defence at NIKOS. He is currently working as an Assistant Professor of Social Enterprise at Rollins College in Winter Park, Florida. He is originally from India.

GOLDEN EGG CHECK AND NIKOS: A STRONG CONNECTION

One of the advantages of being an entrepreneur is the fact that each day is unique, and different than you thought it would be. Being an entrepreneur, I consider myself lucky that I can meet a lot of new people, be creative, innovative and – in the end – make an impact.

This being said, it is remarkable that NIKOS still crosses my path after more than 10 years. Me and my co-founder Jaap Beernink (another NIKOS alumnus) started in 2006 with a consultancy firm B&M Business Development during our business administration master's thesis. After being student entrepreneurs for a few months, we received a pre-seed fund called the TOP-arrangement, managed by NIKOS. With the loan arrangement and this 'quality stamp', we persuaded our first customers.

In 2010, our first employee did his thesis at (again) NIKOS, and this formed the basis of our current company, Golden Egg Check. His thesis led to the unique insight in the criteria that venture capital investors are using in assessing business plans of innovative start-ups. This is what you call knowledge-intensive entrepreneurship! We developed this research into a software-and service company hereafter. Currently, we have over 3.500 users in our database, and over 200 investors are giving input to learn continuously. Clients are start-ups, investors, corporates and educational institutes. Not surprisingly, NIKOS is one of these institutes; we collaborate with students in different places in the curriculum.

Our roadmap contains some huge challenges; our ultimate goal is to predict innovation success better than the experts in the market, to 'select tomorrow's winners'. Big data, benchmarking and 'wisdom of the crowd' will be important. It is likely that we are going to solve these challenges in close collaboration with the Netherlands Institute for Knowledge Intensive Entrepreneurship'.

Petra, Aard and all the others: congratulations and we'll meet again soon!

Gilles Meijer

co-founder Golden Egg Check



My doctoral thesis is about the legitimacy strategies of social enterprises. Social enterprise is a relatively new phenomenon in Europe, as well as further afield. Social enterprise differs from profit-oriented entrepreneurship because business resources are applied to solve social issues without making a profit. That appeals to me, because it places a great social and ethical focus on business.

During the start-up phase, social enterprises require support from different stakeholders such as clients and investors, as well as from NGOs, to obtain various resources such as funding, expertise and legitimacy. My research showed, amongst others, that acquiring legitimacy is a particularly important condition for success. NIKOS has done a great deal for me. I was engaged in research for six years and in the last two years, I

also often gave lessons in Organisation and Strategy. I regard the Netherlands as one of the most enterprising societies. People are friendly and hierarchical structures are not so apparent here, we work together on an equal footing. I have always been allowed to work independently at NIKOS without anyone continually looking over my shoulder. In the USA it is completely different.' I

PASSION FOR ENTREPRENEURSHIP IN NIKOS SUMMMER SCHOOLS

NIKOS is active in organizing several summer schools. One of them is EntrepreneurialU, which is a part of CuriousU, a unique UT-based summer school in festival style. Another one, Startify7 is a part of a European project aimed at training young future ICT entrepreneurs.



ENTREPRENEURIALU

'EntrepreneurialU is intended mainly for bachelor students with varied backgrounds who are looking for a nice addition to their CV or may be interested in pursuing Master's studies at the University of Twente,' explains professor Petra de Weerd-Nederhof. 'It is a very practical course focused on people who already have an idea for their own company. Its main goal is to help participants in developing their business plans, regardless of what field their ideas relate to.'

EntrepreneurialU is an annual event, which is part of CuriousU, the UT-based summer school in festival style. 'It has been organized twice

so far and both times EntrepreneurialU had one of the highest numbers of participants out of all the courses offered at CuriousU,' points out Joost Brinkman. 'This year we welcomed about 40 students. Only about 25 per cent of them were Dutch, the rest came from all over the world. This goes hand in hand with NIKOS's international orientation.'

Although CuriousU is generally aimed at international audience, anybody can join as participants pay for the 7-day course themselves. The only requirement for partaking in EntrepreneurialU is passion for entrepreneurship and interest in starting a successful business.



STARTIFY7

NIKOS is participating in the Startify project alongside partners from Great Britain, Germany, Italy, Poland, Belgium, Greece and Spain. Startify7 consists of seven individual summer schools, each one taking place in a different European city and each one with its own theme. The project aimed to train young future ICT entrepreneurs.

'The Startify7 at the UT was held in summer 2016 and its theme was 'ICT driven social entrepreneurship'. It was integrated with the latest edition of EntrepreneurialU, which allowed the students to learn from each other,' describes Joost Brinkman. 'The overall objective of the Startify7 project is to boost entrepreneurship among

young students. Compared to EntrepreneurialU, the program goes more in depth and fully develops the students' ICT business ideas. The resulting projects should be investor-ready.'

Unlike other summer schools, participants of Startify7 are carefully selected. 'We received 350 applications, but only 45 of the best students were chosen. There were strict selection criteria, including a good business idea, high level of English and so on. We also wanted to make sure we had a good mix of cultures, fields of expertise and different ages,' says professor Petra de Weerd-Nederhof. 'Because the project has officially ended, Startify7 will not be repeated, but we are planning other summer schools, for example one focused on entrepreneurship research.' |



How would you define entrepreneurship? Is it based on a person's attitude or knowledge?

Rainer Harms: 'Entrepreneurship is based on attitude. You can't acquire knowledge without this attitude, without openness to risk, being innovative and proactive.'

Joost Brinkman: 'It's good to remember that entrepreneurship doesn't mean only starting your own business, that is only one part of it. You can have an entrepreneurial mindset also as an employee and we want to let everyone discover that they have it. Entrepreneurship is the theme of the University of Twente and this region. NIKOS plays its role in the fields of research and education, while our partners – Kennispark Twente, Hardstart or Student Union – have expertise in other aspects needed to start a venture. We all add value to the ecosystem. All of us together, we are entrepreneurship.'

Harms: 'Yes, ideally we'd like people to use this ecosystem as a

stream – so anyone can enter the system at any of the partners and naturally flow to the others, including NIKOS which is the place that provides knowledge based on research.'

Indeed, NIKOS is active in research on education of entrepreneurship. Can you give some examples?

Brinkman: 'We would like to follow students throughout the course of their education to examine how their entrepreneurial mind develops. We have made an overview of all studies to determine how entrepreneurial each one is and we would like to do that every year. That way we can see which study programs are effective in promoting entrepreneurial mindset and help steer education in the right direction.'

One of the goals of NIKOS is to generally develop entrepreneurial mind of everyone at the UT. How do

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ORGANISING AND BRINGING PEOPLE TOGETHER

Joyce Jagt (45) is a secretary at NIKOS. In addition to this job, she also established her own company 'It's Joyce 4 Business'.



ENTREPRENEURSHIP EDUCATION FOR EVERYONE

'Entrepreneurship education at the UT is about accelerating your entrepreneurial mind, about inspiration and seduction. You need to inspire people to start learning, not just grab them by the hand,' Joost Brinkman and Rainer Harms, lecturers and researchers at NIKOS, begin our interview on how to include entrepreneurship in education.

you plan to accomplish that?

Harms: 'In addition to regular Bachelor and Master courses, we organize summer schools and open events during the Kick-In, which allows us to reach hundreds of students through fun activities and get them in the right entrepreneurial mood.'

Brinkman: 'It's a pull, not a push. You can be involved only if you want to be, but everyone should have the opportunity to learn about entrepreneurship. We would like every study program to include entrepreneurship in their second year of Bachelor studies. More importantly, we would like teachers to educate themselves at NIKOS, so they can then educate their students in an entrepreneurial way.'

NIKOS would therefore like to offer entrepreneurial training for all UT employees and students?

Harms: 'Yes. We hope to inspire teachers from high-tech fields to teach entrepreneurship in the context of their respective discipli-

nes. Because we help students to learn about entrepreneurship from a business studies perspective, but we don't necessarily have a deep understanding of the technology behind the business. In short, we would like to have a large-scale and continuous program that allows anyone at the UT, including PhD candidates, regular students and the academic and nonacademic staff, to learn about entrepreneurship. We would like this program to be like a repeating circle, which you can enter every and any year.'

Brinkman: 'Thanks to VentureLab program developed at the UT, the knowledge to educate all groups is there, but right now there are no courses for staff members or PhD researchers, entrepreneurial education is currently focused on Bachelor and Master students. However, the UT would like everyone to have some experience with entrepreneurship by 2020. It will be interesting to see how we can include entrepreneurship in fields such as psychology or math, to see how entrepreneurial mindset helps researchers in these fields.' |

What I like so much about working for NIKOS is the contact with all kinds of entrepreneurs. The atmosphere is different to many other UT departments, because I also deal with people from the commercial world. This makes NIKOS a dynamic place to work. I carry out secretarial and supporting tasks for the department. For example, I am currently preparing the PhD

defences. There are eight doctoral candidates this year and that is really exceptional. In addition, I perform a wide range of tasks for external parties like Baosteel, a large steel business in China, in respect of their temporary stay at UT. In future, I see myself taking on even more organisational tasks for master classes and venture classes, for example. Organising and bringing people toge-

ther is interesting. During the networking events, I may also come into contact with people to whom I can be of service with my own company. I provide training in "Presenting yourself consciously" and I have a webshop that sells women's wear and accessories to support professional, conscious presentation. I am still in the start-up phase, but I truly enjoy helping others.' |

Multidisciplinary project PC3

ALLEVIATING POVERTY BY SOCIAL ENTREPRENEURSHIP



The PC3 (Product Co-creation Center) project is an exemplary and successful collaboration between NIKOS, CSTM and the lab of Design, Production and Management, showing how a multidisciplinary team of researchers can boost socio-economic developments by combining their expertise. 'This project could be a relevant contribution to the social impact of the university.'

In a nutshell, PC3 (Product Co-creation Center) is an initiative that aims to create specialized support centers where people from deprived layers of society can acquire the required competences and get immersed in the right networks to start-up their own businesses. 'It's a multidisciplinary project, combining various disciplines and funding resources to boost socio-economic development,' says Laura Franco-Garcia, assistant professor in sustainable development (CSTM department). 'What makes PC3 unique to other approaches is its link between entrepreneurship, product development and sustainability.'

Franco-Garcia grew up in Mexico in a big family, and is personally motivated to alleviate poverty. 'I believe the university has the responsibility to offer resources to people who experience a lack of means to get to a higher socio-economic level. Once people have learned the rules of the game, they can build their own business from the ground up.'

MULTIDISCIPLINARY TEAM

PC3 got off the ground in 2012 when Juan Jauregui Becker, assistant

professor in product engineering (product development, Design, Production and Management department), organised a Studium Generale about alleviating poverty through product design. He asked Franco-Garcia to give a presentation on eco-design and sustainability. 'We were on the same page with this subject, so afterwards, we put our heads together to investigate a new approach to dealing with this social challenge,' Franco-Garcia points out. 'We asked Aard Groen, professor of Innovative Entrepreneurship and scientific director of NIKOS, to join forces. As a result, we wrote a paper about social entrepreneurship and environmental impact, in which PC3 was mentioned for the first time.'

TRAINING PROGRAM THROUGH SKYPE

The past years, they've been developing the PC3 method together with three PhD candidates, meanwhile implementing pilot projects in various countries. The PC3 model was first implemented in Colombia in March 2015. The 14-month training program took place through Skype, teaching participants the core values of product development, sustainability and business acumen. 'It may not have been rocket

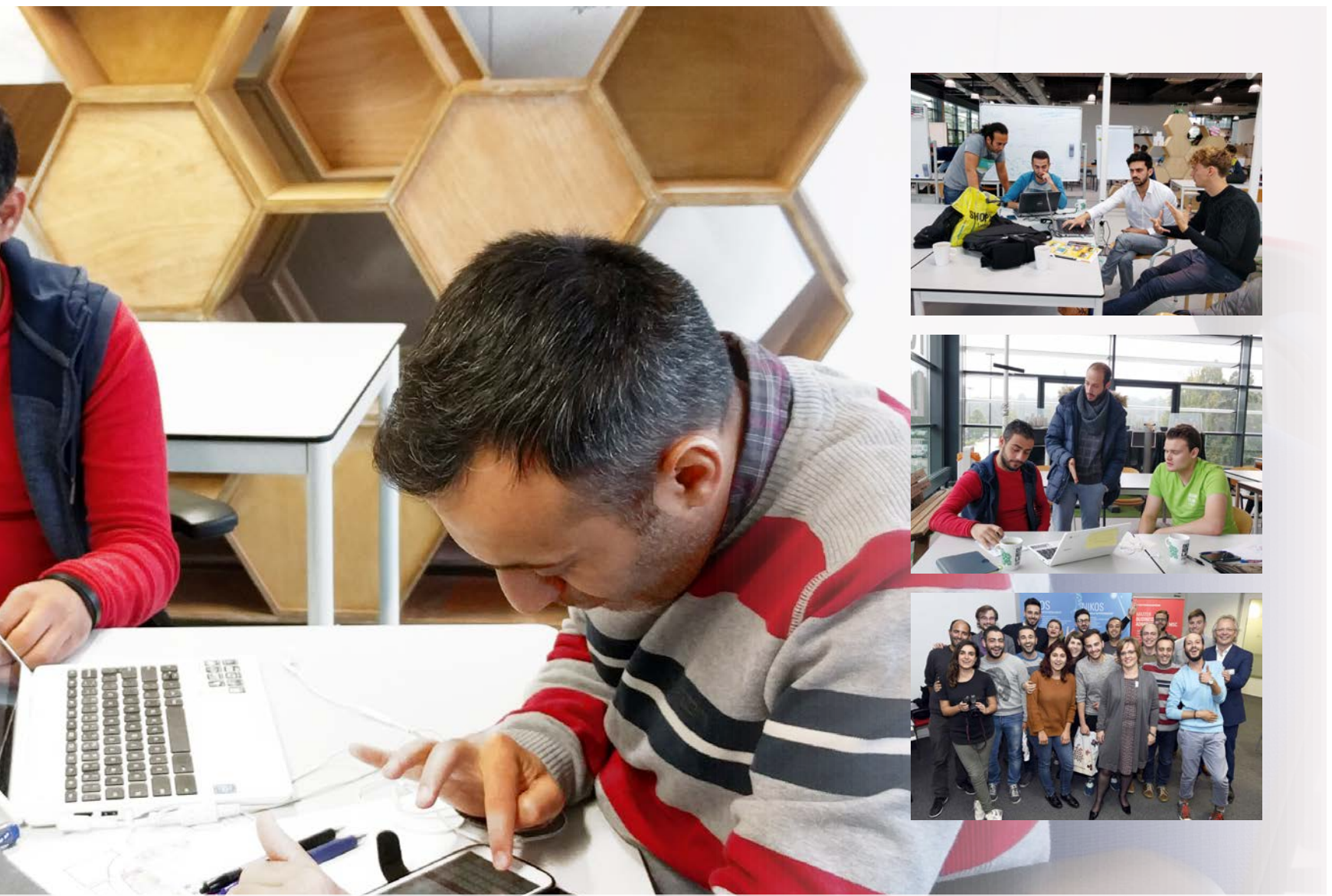
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NO AFTERNOON NAPS

Jin HAN (26) has only been in the Netherlands since September. He studied Human Resource Management and Organisational Behaviour at the Hunan University in China and was awarded the prestigious CSC bursary. He is carrying out his doctoral research at NIKOS under the supervision of Sandor Löwik.



science, but we were able to create social value and make substantial impact on a community level,' Jauregui Becker notes.

He adds that PC3 is going to implement its recipe in Twente through EREI, Enschede Refugees Entrepreneurial Initiative, a joint initiative combining the programs of PC3 and DeliteLabs, a business pre-accelerator targeting refugees. EREI will start at the beginning of 2017. 'In this project, participants learn the ropes of setting up a company during a 5-week course, after which they can decide to continue as an entrepreneur and enter the PC3 program,' explains Jauregui Becker.

LIVING LAB

As PC3 implements projects both internationally and locally, Jauregui Becker has a clear vision for PC3. 'We want to create a living lab that functions according to our PC3 recipe, an environment where refugees can incubate their businesses and connect to researchers and coaches - it should have a community sense where knowledge is exchanged. A good example of the living lab is the PhD research of Marlies Stuijver at NIKOS, which is based on data gathered from PC3 participants. And for the long term, we like to set up a network of

living labs, adapting the PC3 recipe to the local context,' he says.

HUMAN TOUCH

'PC3 is a great example of the social entrepreneurship that NIKOS promotes,' notes Jaap van Tilburg (NIKOS). PC3 still has a project status, although Van Tilburg puts forward that he wants the project to be part of the university's valorisation policy. 'It would be a win-win situation; social entrepreneurship is the university's human touch, and this project could be a relevant contribution to the social impact of the university.' |

Good cause

The Product Co Creation Center (PC3) research project recently organized a session of EREI - Enschede Refugees Entrepreneurial Initiative in DesignLab (see the pictures on this page). EREI was chosen as the NIKOS 15th anniversary good cause, and is a joint venture between the University of Twente and DeliteLabs. DeliteLabs is a business pre-accelerator targeting refugees. Currently, DeliteLabs is operating in Amsterdam, where they have run the program already several times successfully.

I am researching the way start-ups function within partnership clusters at innovation campuses. A good example of this is the High Tech Systems Park in Hengelo, where the former Thales premises are being developed into an innovation campus. Partnerships between high tech companies and start-ups to achieve innovation are central to this initiative. I am researching the fields of tension those

partnerships produce and examining the role of the government. In the Netherlands, the government supports these kinds of developments, financially too. Conversely, in China, the government is withdrawing increasingly. I am researching whether such campuses exist in China and how they operate there. The image I had of the Dutch is completely accurate: they are friendly and welcoming people. To me, the

most impressive thing is how public transport is organised here, absolutely fantastic. Something else I noticed immediately is the unpolluted fresh blue sky. Something I have to get used to is that the people at UT do not stop for an afternoon nap. That is customary in my home country.' |



‘BECOMING A LEADER IN DIGITAL MARKETING’

Digital marketing is developing rapidly says Efthymios Constantinides, Assistant Professor of Digital Marketing. So rapidly that he is looking beyond the internet in his education and research and is extending his outlook to subjects such as the Internet of Things. ‘At NIKOS, we explore the boundaries of marketing and innovation.’

There are challenges aplenty, explains Constantinides, who enjoys taking on those challenges. According to him, the focus is on partnership within the field of activity. ‘Our research is relevant to businesses. We try to identify important issues together, like improving the user-friendliness of a website by means of eye-tracking. And themes such as neuro-marketing, big data and the Internet of Things. We want to be as practically oriented as possible and connect students with businesses.’

ALL WE NEED AT UT

In that practical world of digital marketing, Constantinides occasionally has to acknowledge the superiority of higher professional education institutions that have approached the theme in a more mature and broader manner. ‘But if you look at how digital marketing is developing, I think we have all we need here at UT to assume a strong position. Digital marketing suits a technical university. We have people here from technological and social disciplines; we can bring those specialisms together.’

Constantinides says his personal ambition is to make Twente a leader in the field of digital marketing. Is that ambition realistic? ‘We are on the right track. Just look at the enthusiasm amongst students. Over a

hundred bachelor students are interested in the elective that I coordinate. And 62 students are following the master’s degree elective, Advanced Topics in Digital Marketing. That indicates to me that students realise it is a relevant subject.’ What supports Constantinides’ ambition even more according to him, is the international interest in NIKOS’ ideas. ‘The Northwestern University in Chicago is interested, we will discuss the possibility of a collaboration soon.’

STRENGTHENING CONNECTIONS

Before these grand aspirations can be achieved, there is a need to approach the specialism in a more focused and practical way, according to Constantinides. ‘The Google Online Marketing Challenge, for example. We work in collaboration with about twenty companies every year – ranging from small to large. A motivated group of students gets involved. On the one hand, with the objective of winning the challenge, on the other hand, it is a really good way to bring students and companies into direct contact with one another. If we keep connecting the academic community with the commercial world and continue strengthening that connection, then UT and NIKOS can become a leader in the field of digital marketing.’



INNOVATION THROUGH SOCIAL ENTREPRENEURSHIP

The University of Twente prides itself on its entrepreneurial spirit, something NIKOS is at the forefront of. NIKOS researcher Michel Ehrenhard and PhD candidate Koen Kuijpers take this a step further. Together with Extend/SOWECO, an organization for sheltered employment, they focus their academic attentions on socially responsible entrepreneurship.

Extend/SOWECO is an organization that works to help people with mental and physical disabilities enter the workforce. Ehrenhard and Kuijpers are collaborating with Extend/SOWECO. Their goal is to inspire commercial institutions to consider their social impact and to show how hiring people who find themselves shut out of the labor market can make a company more competitive and enterprising.

ENGAGED SCHOLARSHIP

‘What we aim to do in our collaboration is to be innovative and to develop through social entrepreneurship,’ Michel Ehrenhard (picture) says. ‘By practicing engaged scholarship, we want to find ways to close the gap between the general workforce and people with a disability. To do so, we combine the latest theoretical insights with research in the field. This hands-on approach is necessary, because work practices are not changed by regulation and generic solutions. There can be incredibly large differences between company cultures. A small family business in Almelo can have widely different values and motivations than a large multinational company. This is important to consider.’

A FRUITFUL COLLABORATION

According to Koen Kuijpers, PhD candidate at the UT and junior consultant at Extend/SOWECO, the collaboration has so far been fruitful. ‘We see that hiring of people who find themselves at a distance from the general workforce changes something within companies. Other employees become more social and empathetic, and so do the clients. This shows the stigma that disabled employees only cost money, is not true. This type of socially responsible entrepreneurship offers a lot of advantages for all parties involved.’ |

PREDICTING

THE SUCCESS OF UNIVERSITY-INDUSTRY PARTNERSHIPS

Firms increasingly engage in collaborations with universities. However, knowledge generated within such partnerships isn't automatically converted into innovations, because creating any societal or economic impact is often a long and uncertain process. UT scientists have therefore decided to explore to what extent it's possible to predict the success of these collaborations at their very beginning – through the projects' research proposals.

This Tech4People project (see text box) is not only focused on collaborations, but it is based on collaboration itself. It includes researchers from NIKOS (BMS faculty), as well as experts on Optical Science (TNW faculty). Its main objective is to identify early success factors of university-industry partnerships, and thus support those projects that have the potential to generate scientific, societal and economic impact. How to do that? By combining entrepreneurship research with novel technology.

TECHNOLOGY AS METHODOLOGY

'We have observed that a lot of scientific knowledge is generated through university-industry collaborations, but not all of this relevant knowledge is applied. We therefore aim to identify the factors that predict not only scientific, but also societal and economic impact of university-industry partnerships,' explains Isabella Hatak, one of

the NIKOS researchers involved in the project (in the center of the picture). 'We want to find out if we can predict this impact at the very beginning - from the project's research proposals,' continues Hatak's colleague, Kasia Zalewska-Kurek. 'We will use technology - machine learning and text mining – to analyze proposals submitted by the university's technical faculties in years 2000-2010. At the same time, we will examine the differential subsequent impact of the projects to see which ones were or were not successful.'

'The unique combination of theory and technology in this project is very exciting,' says Igors Skute, the PhD candidate working on the project, with Petra de Weerd-Nederhof acting as his promotor. 'Using machine learning is a new approach in the research of university-industry collaborations. The idea is to teach a computer to recognize certain patterns and therefore also correlations between the research proposal and the project's overall impact,' explains Skute.

NIKOS
EMPLOYEES

#5

ATTENDING CONFERENCES AND ENGAGING WITH OTHER DOCTORAL CANDIDATES

Tijs van den Broek (32) is a researcher and lecturer at NIKOS. He provides education in Technology, Organisation and People for IBA and skills for Industrial Engineering.



'WE ARE ON A MISSION'

For now, the researchers will draw on research proposals and public sources, including scientific and patent databases, newspapers, company websites or regional statistics, to examine the impact of university-industry collaborations. 'Based on initial evidence, the main driver behind a project's success and impact appears to be the strategic fit of the involved partners. Based on our results, we hope to be able to inform future collaborators about selecting partners and shaping collaborations in such a way that they lead to a three-dimensional impact. Because this is a Tech4People project – the technology should serve people in the end.'

Why did the NIKOS researchers even decide to apply for Tech4People funding? 'It's a great opportunity to intensify collaborations with other departments, such as MESA+, MIRA or SBE,' answers Zalewska-Kurek. 'It allows us to not only strengthen the collaboration with external

partners, but also between us within NIKOS. This project has already initiated new collaborations, so Tech4People was a good stimulus.'

'The combination of social science with technology also allows us to strengthen the validity of our findings,' thinks Hatak. 'While machine learning is still in its infancy in our field, we are certain it offers a huge potential for obtaining relevant results in entrepreneurship research. You could say that we are on a mission to increase the use of this technology as a method. It's a challenge for us, but you know what they say: no pain, no gain.' |

Tech4People

Tech4People is an investment program launched by the BMS faculty in 2015. Its main goal is to strengthen the collaboration between social and technical science disciplines at the University of Twente.

My doctoral thesis was about the organisation and effects of online protests. These campaigns are aimed at persuading companies to change their behaviour. A good example is the NGO campaign aimed at banks, which I observed for my research. Banks may invest in companies guilty of land grabs in South East Asia, for example. The original residents are driven off

their land without assent or proper compensation. I was able to conduct detailed research into how the NGO persuaded those banks to adopt a new social standard, namely a policy against land grabs. A whole mix of instruments was used to put the banks under increased pressure. This falls under institutional entrepreneurship. You see, the NGO is actively trying to change standards in the sector.

In addition, I am working on the Twitter Data Grant. We are analysing social media data from the Movember (men's health) NGO campaign. NIKOS has done a great deal for me. In addition to my job at TNO, I carried out my doctoral research and received a great deal of support and flexibility from NIKOS. Attending international conferences and engaging with other doctoral candidates was incredibly helpful.' |

Collaboration NIKOS – Inreda is a ‘triple win’

Imagine you were a patient with type 1 diabetes, an “autoimmune” disease which, if untreated, is life-threatening as your body’s immune system attacks part of its own pancreas. To stay healthy you have to monitor your blood sugar level daily and need lifelong insulin therapy. You’d need multiple injections every day, a complicated balancing act as the precise amount depends on many factors, like food, stress, emotions and exercise. You’d probably crave for an easier treatment.

Inreda founder Robin Koops is a type 1 diabetic patient himself, and was convinced that new technology could substantially improve treatment of his disease. Well, drastic times call for drastic measures. Accordingly, in 2004 he developed the first prototype of a bihormonal artificial pancreas system. This innovative device can automate and regulate patients’ insulin intake, thus simplifying treatment and radically improving patients’ quality of life. Consequently, in 2013 it won the Rabobank Herman Wijffels Innovation audience award for being the innovation with the most significant social impact.

PROVIDING BUSINESS DEVELOPMENT

In 2011, Inreda Diabetic Ltd. asked NIKOS to provide the business development and commercial aspects for a research project entitled Portable Bihormonal Closed Loop for Diabetes (PCDIAB). This pro-

ject was led by Ariane von Raesfeld (on the left side of the picture), who conducts research into innovation and co-creation in organizational networks, and teaches marketing and business development at NIKOS. ‘Although founders Robin Koops and Wim Smit were already experienced entrepreneurs, they focused on engineering and product development, therefore, our expertise on business development was of significant value,’ she says. ‘There still hasn’t been a company that has successfully commercialized a similar device.’ Additionally, she was supervising PhD candidate Tamara Oukes. For the PCDIAB project, Oukes investigated how small and medium-sized enterprises like Inreda can cope with asymmetrical power relationships. ‘One of the most significant conclusions was that organizations imitate each other’s attitude and respond with very similar behaviour,’ says Oukes. ‘Small companies usually don’t have the same resources as large companies to do research and development.’

MUTUALLY BENEFICIAL COLLABORATION

Oukes and Von Raesfeld point out that NIKOS provided commercial and entrepreneurial expertise as well as (technical) resources, like collecting data and conducting research. UT students carried out acceptability studies and usability studies needed to obtain CE

IMPROVING QUALITY OF LIFE OF DIABETIC PATIENTS

Robin Koops, one of the founders of Inreda Diabetic, asked NIKOS to support the business development and commercial aspects of a bihormonal artificial pancreas system. The collaboration is a 'triple win'. NIKOS is provided with significant research projects, Inreda can use the data to develop their device, and diabetic patients have the prospect of a better quality of life.



marking (a declaration that the product complies with the essential requirements of the relevant European health, safety and environmental legislation). In these studies, students evaluated the attitude of patients and medical staff towards using the device.

Oukes explains that the collaboration is valuable to both parties. 'It provided NIKOS with a PhD position and enables our students to do significant research for an innovative project, producing data that is used in real-life situations. NIKOS profits from direct involvement in an entrepreneurial company and can publish the data and use the results. Meanwhile, Inreda benefits from the practical application, using research data to further develop their device and elaborate their business plan.'

PRODUCT DEVELOPMENT

Inreda conducted a clinical trial in 2015 which showed encouraging results. However, more research needs to be done before a fully functional artificial pancreas can receive regulatory approval. Inreda has developed a fourth prototype, which is used to conduct clinical studies for development and medications, obtain CE marking and create an even more manageable and user-friendly device. Von Raesfeld: 'It's an innovative high tech product with a highly significant human touch aspect, as it can radically improve the quality of

life of diabetic patients. Patients are very involved and enthusiastic in participating in new usability studies as they know they will benefit from it eventually.'

VIRTUAL LAB

NIKOS will keep supporting Inreda in professionalizing the organization, which grew from five to fifteen employees. Von Raesfeld aims to implement an innovative approach for the next usability study, investigating usability and value-in-use in the VirtualLab, a high-tech environment used to facilitate multi-stakeholder decision making processes. 'During the clinical trials Inreda encountered impeding usability problems that they hadn't taken into account. These could typically be exposed in the VirtualLab, hence improve further clinical studies.'

Another innovation that Inreda and NIKOS would like to test is an e-health portal. Van Raesfeld: 'The artificial pancreas system registers a lot of data about patient's daily routines and habits. The data could be analysed and linked to health advices, improving their quality of life even further.'

Inreda founder Koops is equally enthusiastic about the collaboration. 'Thanks to the research of students and scientists from NIKOS there is a glimmer of hope for diabetic patients, including myself.' I

ENTREPRENEURIAL SCIENCE

Scientists and entrepreneurs have more in common than you would say, at first glance. Of course, there are major differences. The scientist works in the lab for years to find answers, making progress in small steps. The entrepreneur seems to be more impatient, keen on introducing a product to the market. But for both, there are moments in time that all seems to come together and everything fits. Every once in a while, the scientist experiences some sort of 'Eureka' moment in the lab. Every once in a while, the entrepreneur is aware of a moment that everything works out well: a new combination of a product and the market. These moments are strong impulses for keeping up their work. But both the scientist and the entrepreneur know that, in order to reach this, they have been wandering around for quite some time, often choosing routes that proved to be dead end roads. All major entrepreneurs of this time say that you have to be prepared to fail often. In science, this is not different at all. Failure may even not be the right word, as the inventor and entrepreneur Thomas A. Edison says: "I've not failed. I've just found 10,000 ways that won't work."

Now we know that the scientific process has certain things in common with the way entrepreneurs work, there should be ways of connecting these two, you would say. Moreover, this connection is crucial for introducing innovation in society. It is not a trivial one, however. Turning a scientist into an entrepreneur overnight, is not realistic and in many cases not the goal. Exploring the market potential of new scientific developments typically is the work of teams in which scientists and entrepreneurs meet, each taking the role they're good at. But a shared attitude is the starting point. You can't start early enough with this, is my conviction: UT's teaching programs therefore have several aspects of entrepreneurship. And we do more: within UT's NIKOS academic centre for entrepreneurship, teaching, research and business support go hand in hand. In the fifteen years of their existence, they've built an invaluable knowledge base and a solid support system.

Do all of this efforts take away the risk of 'failure'? Yes and no. Thanks to NIKOS' work, better business plans are made, offering tailor-made support. All is done to make things to a success. At the same time, taking risks is the only way to move forward. It is inherent to both science and entrepreneurship.

Ed Brinksma

Rector Magnificus, University of Twente



NIKOS
EMPLOYEES

#6



SOLVING COMPLEX PROBLEMS FOR IMPRESSIVE COMPANIES

Yasin Sahhar (24) obtained his master's degree in Business Administration and then did the Research Honours programme. He wrote his theses at NIKOS, worked there as a student and research assistant, and started there as a consultant and doctoral degree candidate on 1 November.

SAVE THE DATE



2016

16 November

15.45 Waaier: Master Class “Innovation Management and Social Networks: An Inseparable Relationship” by Jan Kratzer, TUBerlin

17 November

19.15 The Gallery: Global Entrepreneurship Week VentureClass “Social Entrepreneurship via Product Co Creation” by Christof Hawle (DeliteLabs) and Juan Jauregui Becker (PC3/CTW-OPM)

21 November

15.45 Waaier: MasterClass “(fs)QCA as a Research Method in Social Sciences” by Benoit Rihoux, University of Louvain (UCL)

23 November

16.45 Waaier: “X-factor for innovation: Identifying future excellent professionals” PhD defense Janina Banis-den Hertog (Saxion)

30 November

12.30 Waaier: “Managing international equity placement strategic alliance; case study in Indonesian state-owned enterprises and bank taken overs”
PhD defense Wandebori Harimukti

30 November

15.45 Waaier: “Master Class Value Co-creation in Innovation Eco-systems” by Leena Aarikka Stenroos (Tampere University of Technology)

1 December

12.30 Waaier: “Reframing for sustainability: Entrepreneurship & Leading” PhD defense Divya Bhutani

1 December

19.15 The Gallery: VentureClass “Grounded Strategy for a VUCA World” by Jeroen Kraaijenbrink, Associate Professor of Strategic Entrepreneurship

7 December

15.45 Waaier: Master Class “Patent Analysis” by Martin Möhrle, University of Bremen

2017

24 January

15.45 MasterClass “X-factor for innovation: Identifying Future Excellent Professionals” by Janina Banis-den Hertog

June

Tech4People panel discussion between university researchers and firms: “University-Industry Collaborations - what makes them successful?”
hosted by Kasia Zalewska, Isabella Hatak and Igors Skute

13-22 August

EntrepreneurialU SummerSchool
- TBA MasterClass “How and Why Social Movement Entrepreneurs Use Social Media to Pursue Institutional Change” by Charlene Zietsma
- TBA Seminar on Resilience, Innovation, Sustainable Business and Responsibility
- TBA DARE Research seminar on Entrepreneurial Behaviour and Leadership

I developed an interest in consultancy while writing my theses. I find it exciting to combine academic knowledge with business practice. Solving complex problems for impressive companies appeals to me. For example, I conducted research for my master’s thesis at textile technology company Ten Cate. This company wanted to map client needs better in order to adjust its value proposition (the va-

lue the client can expect from a product or service). I owe much to my thesis advisor and co-thesis supervisor at NIKOS, Raymond Loohuis. We are writing a paper together that we will soon submit to a journal. In addition, he supervised me during collaboration between UT and organisational advice consultancy firm The Next Organization, where I carried out my doctoral research. Half the time, I focus on projects

as a consultant, in addition, I am doing my doctoral research. The topic of the research is: how companies can perform better in the current dynamic world by continually innovating and optimising their value proposition to serve the needs of the client as effectively as possible.’ I

NIKOS COURSES (2016-2017)

featuring innovation and entrepreneurship
for UT and other students

Technology, Organisation & People (TOP-IBA M1)

Strategy, Marketing & Economics (SME-IBA M5)

Innovation & Entrepreneurship (INN&ENT – IBA M6)

**HTHT minor Innovation, Entrepreneurship
& Business Development** (M9 & M10 – also Exchange Package)

Minor Crossing Borders (M9 & M10)

Digital Marketing for Networked Businesses (IBA M7 Elective)

System Engineering, Entrepreneurship & Knowledge production (SEEK, M8 AT)

Innovation & Entrepreneurship for CreaTe (M7)

Ontwerpen in de zorg – ondernemerschapsonderdeel (GzW M7)

Strategy & Marketing (premaster)

Organisation Theory & Design (premaster)

Organisation & Strategy (MSc IEM)

Entrepreneurship, Innovation & Strategy (EIS-MSc BA Specialisation track)

Strategic Marketing and Business Information (SMBI – MSc BA Specialisation track)

Business-to-Business Marketing (master elective)

Advanced Topics in Digital Marketing (master elective)

Business Development from a Network Perspective (master elective, MSc BIT)

Global Strategy and Business Development (master elective – new in 2017)

Business Skills for TBK and IBA

International Entrepreneurship (master elective)

Entrepreneurial Leadership & Responsible Organisation Design (MSc BA core course)

Nanodevices Design Project – Entrepreneurship component (MSc NanoTechnology – new in 2017)

Innovation & Entrepreneurship Theory for EIT

Business Development Lab for EIT

International Study Tour Preparation

Finance and Healthcare Purchasing (master elective)

Double Diploma MSc Innovation Management & Entrepreneurship with TUBerlin

**Double Diploma MSc Master International Marketing Management with
Lappeenranta University of Technology** (new in 2017)

EntrepreneurialU Summer School for students and PhD Candidates

Entrepreneurial Behaviour course for Staff and PhD Candidates (new in 2017)