

*Magazine of Study Association Industria & Alumnia, Alumni association of Industrial Engineering*

## 2022

### *The impact of the year of change*



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## The Year of Change

Dear reader,

2022 has been a crazy year. While the geopolitical bonds between nations have gotten much more tense and the price of living has risen significantly, our life has opened up again with the COVID-19 measures being lifted completely (and let's hope that stays that way). With so many changes happening, and many more coming up in the future, it is incredibly important to stay flexible. Luckily, with our broad range of knowledge due to our education in Industrial Engineering, we are trained for this and have the opportunity to thrive in the future.

This edition of SCOPE contains various articles about '2022, The year of Change'. Ruben Schneiderberg spoke with KPMG about the risks and challenges currently faced by the company. Sara Casado Rodriguez interviewed Rob Jacobs from Jumbo about their strategies and the future of their supply chains. Bauke Wijnands investigates the future of entrepreneurship, while Marijn spoke with Tarkan Tan, a former lecturer at the TU/e about sustainability in Industrial Engineering.

This SCOPE contains numerous travel stories. Thijn Muselaers gives us an insight into his time in Porto and Gwen van Leeuwen recaps the International Research Project's trip to the USA and Mexico. For those interested in more international travel, C.I.T.I. introduces itself and talks about the two most recent ESTIEM-travels. Furthermore, the new IRP board, as well as the Crew introduce themselves. Columns of Farah Schepens, Rosan Kolff and Bob van Ginkel, as well as the board update from Alumnia, and Alumni speaking end this edition.

To end with a poem as per tradition, which has not changed:

'Always strive for the best,  
the best version of you.  
In the further years to rest,  
just like in 2022'

Enjoy reading this edition of the SCOPE,

**Marijn Konings**  
Chief editor SCOPE

2022

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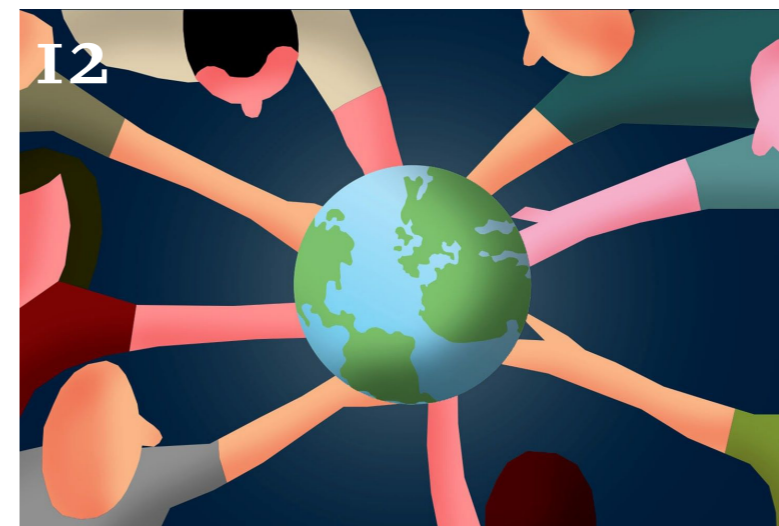
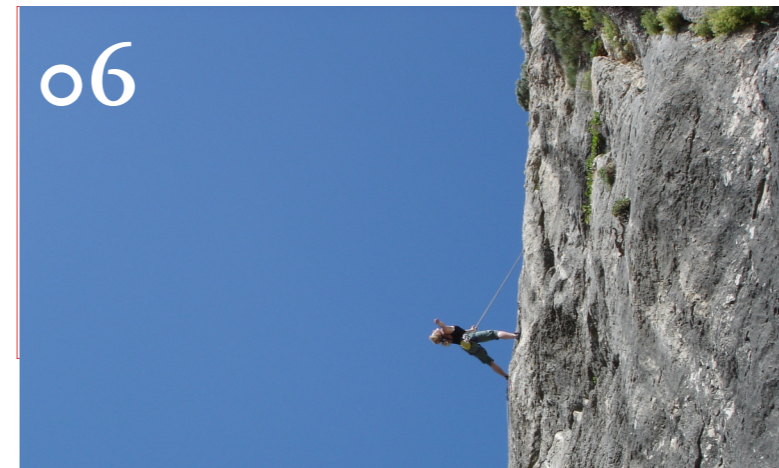
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‘Inspire Confidence. Empower Change’; that is where KPMG started with and where it still stands for today. Responding to modernized, and continuously developing, needs of customers is the main goal of the firm. Which projects is KPMG working on? How are these projects affected by 2022? SCOPE interviewed Koen Crooymans and Mariska de Kort about their year at the IT Assurance department in Eindhoven.

TEXT Ruben Schneiderberg DESIGN Marijn Konings



## Mitigating Risks and Stabilizing Challenges

The year 2022 is almost at its end. A year where we bounced back from the pandemic. The pandemic as itself had a major impact on the world and played as a catalyst for rapid digitalization. More and more companies aim to have a global, but central driven, IT system, to operate fully digitalized and synchronized. An implementation like that creates a lot of risks and challenges throughout the whole organization. Fortunately, risks can be mitigated through project assurance, which aims to reduce the risks to an acceptable level by looking at the costs, time and quality factors that influence the project. Next to, or maybe in accordance with,

digitalization, society desires to be better prepared in the future for similar pandemics, in specific with the usage of advanced information technology (IT). This is particularly difficult since many different control organs (both national and local) come into play with different functionalities, while they have to use the same IT infrastructure. Besides, one should not only think out of the perspective of the previous crisis, COVID-19, where the focus was on preventing contamination through the air, according to Mariska de Kort. “The next pandemic could concern food for example, which results in different crucial stakeholders.” This article

discusses two influential projects undertaken by KPMG in 2022, both in the private as well as the public sector.

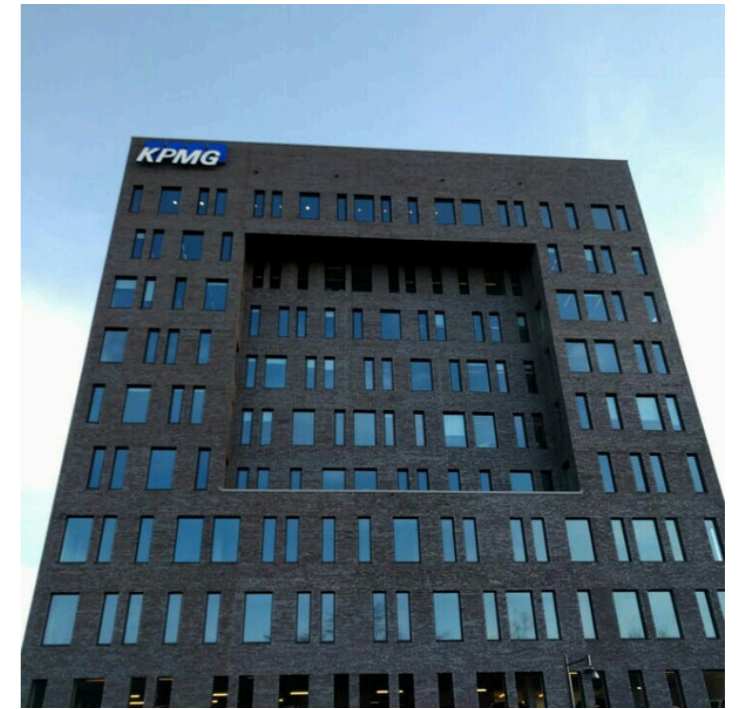
### Seeking Balance

At the beginning of the year, KPMG employees were still working from home. Gently, people are coming back to the office, while many enjoy the benefits of telecommuting. Corporates are still seeking the optimal balance between these two. Employees of KPMG, such as Koen Crooymans, are highly affected by the policies of their clients, regardless of the approach from KPMG itself. The SAP implementation that his team is currently working on, touches the client

fully, which entails that the whole company has to adapt and change. The goal is to adapt business processes towards the implementation, requiring employees to be trained and informed about the new system technologies. Koen Crooymans: “It is really hard, or almost impossible, to prepare such an organizational change when half of the people are working from home on Monday, while different people are working from home the other day.” A User Acceptance Test aims to investigate whether the users are willing to adapt to this new implementation. To be successful, it is required of different stakeholders to be in the same room at the same time. Due to people getting acquainted to working at home, this was almost impossible to accomplish. In contrast, digitalization provides companies with the opportunity to quickly connect with one another. “People can do their duties from home perfectly. But, in change management you have to be able to look each other in the eye. Are employees supporting this change? How do they feel about it and do they support it?”

### Accomplishing the big projects

The healthcare project in which Mariska de Kort is involved, is executed on a large scale and over a long time span. Advising models to ensure pandemic preparedness through IT infrastructure is not something that is done over a week. The difficulties lie in regulations and legislations concerning who can make specific decisions and who should execute them. For example, many COVID-19 specific issues concern the



municipal healthcare on an executive level. Think of vaccinating, which is now done on a local scale, but started more centralized for Covid-19. The vaccines are provided by a much larger network and are purchased on a national level. Additionally, it should be possible to keep track of who is vaccinated, infected and the contacts they had. Mariska de Kort: “As you can imagine, many different stakeholders should be able to tap into such information while the privacy of the citizens should be guaranteed.” Moreover, when a different pandemic occurs, different stakeholders should be able to access the same IT system and distill the necessary information, at a much larger scale. Koen Crooymans’

client is, as told earlier, implementing an SAP system in different subcompanies which were acquired over the last years in order to achieve economies of scale. The costs are immense, reaching values over 20 million per business unit. Just as with the healthcare projects of Mariska de Kort, it is essential to map all the stakeholders, together with their interests and concerns, in order to mitigate the risks.

Clearly, both projects have their own challenges. How do you get started with them? Mariska de Kort: “There are several standard methods that can work as a blueprint for approaching such projects. But in reality, it is often



## Project Assurance

Project assurance is a method that aims to provide a client with an independent analysis of the likely future performance of very big implementations that affect the company as a whole. It is desired to provide the stakeholders with confidence in their technologically advanced and high capital requiring projects since many challenges and risks arise. It is regularly executed before the point where exceptional expenses arise. Both hard skills (methods, tools and processes) as well as soft skills (training employees, people & change management and leadership) are analysed within the desired scope. A used tool is called the ‘Devil’s Triangle’ which looks into the costs, quality and time span of the project.

*“In change management, you have to be able to look each other in the eye.”*

different. The responsibility lies with a team, and they formulate a plan.” Sometimes it is desired to focus on documental studies. The next time, the focus lies on having conversations with employees, teams and management boards (which can in turn be more difficult with people working from home). When all input is gathered, the team should aim to make a clear analysis of the risks and how they should be tackled. Desired outputs often change along the way. Therefore, continues conversations with involved stakeholders is essential to bring every project over the finish line successfully.

#### Introducing Industrial Engineers

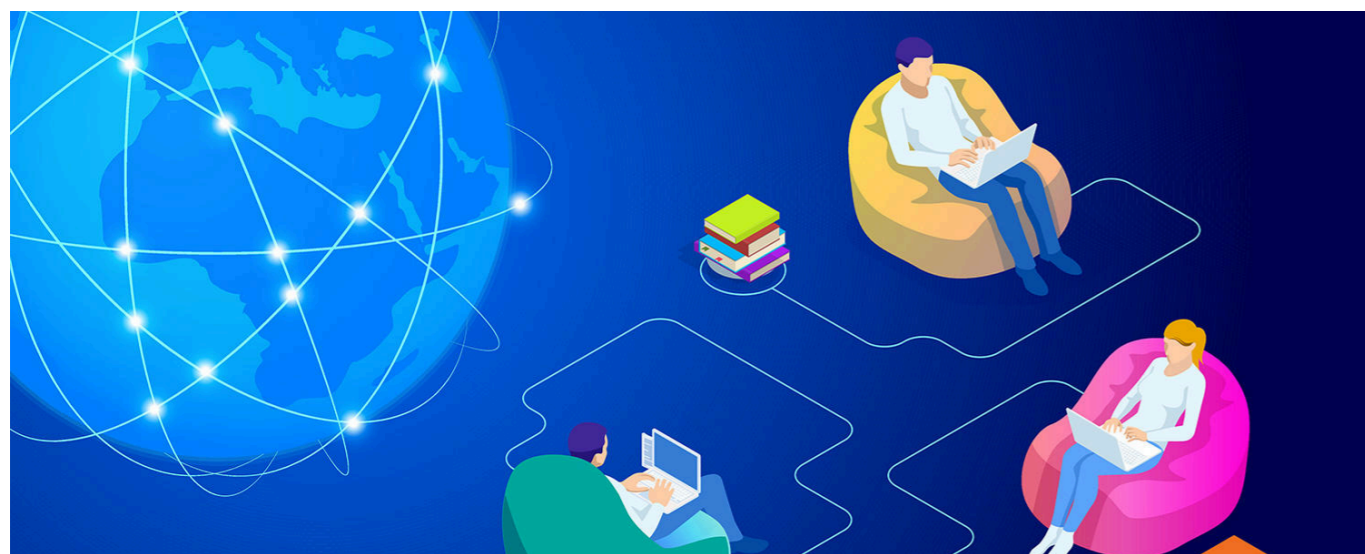
Koen Crooymans studied Industrial Engineering at the TU Eindhoven about a decade ago and is very satisfied with the applications in his daily working life. Mariska de Kort could also approve the importance of some specific skills you get during this program. It has become visible during this article that many big projects within KPMG affect a business as a whole, and therefore touch many, different business processes. These

processes are often changing during the project and must therefore be understood thoroughly. The fields of operations, HR, and IT processes can all become applicable during a variety of projects at KPMG. In order to tackle big projects as the ones mentioned in this article, it is very interesting to know how a company goes from executing its operation to making it financially feasible.

#### Concluding

In this edition and article, SCOPE reflected back on the year 2022. Although it is important to evaluate, it might even be more critical to look ahead. The European Union made very ambitious goals for the year 2030. Goals that can be split into two major pillars: sustainability and digitalization. They formulate this as the ESG-criteria (Environmental, Social and Governance criteria) and the Digital Age, where the focus is on data processing while guaranteeing privacy. This creates many new challenges for companies, resulting in new chances for KPMG. Last year, and the near future, seem quite uncertain for many sectors, but KPMG managed to

facilitate their clients with the certainty they demand in their changing desires. They welcome the new societal demands of the European Union and are willing to aid their clients with the same quality in the future in these challenging, but interesting times.



**Foot Locker.**



Leadership, VUCA factors, the omnichannel approach, sustainability, quality, and excellence are some of the characteristics that Jumbo is implementing these days within their supply chain. Or as Rob would say: “We should be ready for the future challenges.” Rob Jacobs oversees creating and implementing Jumbo Supermarkets' supply chain strategy and innovation in his capacity as Manager Supply Chain Development & Performance: “We shape the supply chain of the future and improve the supply chain of today. We develop strategies and we push innovation.” Having 16 years of experience at Jumbo, Rob explains the different strategies Jumbo is applying.

**TEXT** Sara Casado Rodriguez **DESIGN** Marijn Konings



## Jumbo Strategies

### VUCA

VUCA is a phrase that is often used in the US currently. Besides, it is rising in popularity in the Netherlands as well. VUCA stands for volatility, uncertainty, complexity and ambiguity. This term is used to describe the highly uncertain and complex environment in which we, as individuals and organizations, find ourselves in today. It also emphasizes the value of adaptation at a time when it is getting harder to develop detailed plans for a period of five or ten years. Rob: “It is a way of thinking by where you can assess your supply chain on VUCA factors and see where you need to take extra measures to mitigate those factors.” In other words, Jumbo’s supply chain employs VUCA factors to assess

or identify risks.

Rob: “VUCA has changed the way we are thinking about working together with our suppliers. We are looking for more fixed and long-term suppliers to ensure security of supply, but also to improve quality together and lower cost in the supply chain. It is a matter of low cost, with the best product. In other words, VUCA influences the strategy model into a more work, grow, improve and find the best together.”

### Mission and vision

In the past Jumbo had a so called ‘single channel’, the supplier delivers to the customer via an single salespoint. Since the last decade Jumbo changed to a so

called omnichannel. The idea of omnichannel management was introduced five years ago in reaction to the expansion of the internet and the ensuing change in consumer behaviour. Omnichannel is a new strategy to improve the shopping experience for customers and address any issue with single channel approach to retailing. For Jumbo this means either the customers shop physically or online, the experience must be seamless and consistent across all channels with special attention in people’s mindsets. Rob: “Due to that the supply chain delivers directly to the customers buying groceries through the internet, we need to think even more about end customers. Thus, some things must be

considered, such as the Net Promotion Score (NPS) which is how the customers experience the service the company is providing. All starts with the customer. The whole company must be organized around the customer to give them the best experience.”

In the upcoming time, Jumbo intends to deploy additional expenditures to emphasize the expansion of the omnichannel strategy and the implementation of further quality improvement in the offer. In parallel, the business is upgrading its organizational structure with a focus on streamlined business procedures, digitization, and improved ICT and data processing technologies. Moreover, Jumbo has unveiled its new Long-Term Plan, which comprises a tightening of the course, based on a thorough analysis

### Future

“We should be ready for the future challenges. That means we look at the supply chain in VUCA terms where is the supply chain strong and vulnerable, and then several strategies are applied in order to make Jumbo stronger.”

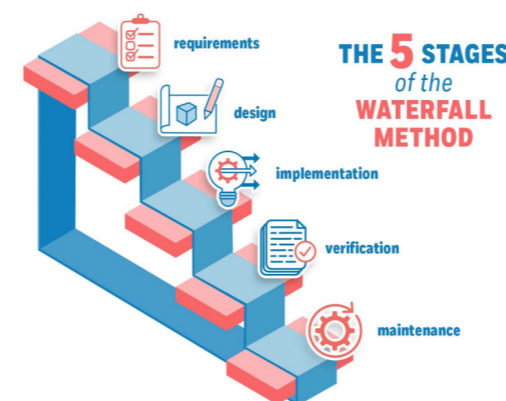
Seven strategies are applied throughout the Jumbo’s supply chain. The first strategy consists of keeping and improving the workforces. Rob: “This is the a significant one. Attract and keep enthusiastic, energetic and most valuable employees. Having the right amount of people and the right competences can determine the future of any company, that is why this is a very important strategy.” The second strategy is about being more sustainable and efficient. Rob: “We are looking to decrease Co2 emissions in the supply

chain with all kinds of measures: implementing solar panels, wind turbines, electric trucks to be also more cost effective in the future. But also, this affects the planning systems, making sure that the truck drives as full as possible and train our drivers to do their work in an efficient way. Becoming more sustainable at the same time of becoming more efficient. Jumbo does much more, but in the supply chain, we focus on the future, customers and find ways to be more sustainable.” Taking control of the whole supply chain is another strategy that Jumbo applies throughout the supply chain. The fourth strategy looks for a more sustainable and stable scheme landscape. So, all the systems throughout the company must be interconnected. Future improvement in operations and thus quality, to decrease complexity and have a more stable process. Another important strategy is the omnichannel approach, which was discussed before. Operational excellence with the current processes. In other words, having the right standards of the different processes. “Eleven thousand people working at Jumbo’s supply chain with multiple distribution centers, so having an operational excellence will give feedback, and improve the processes.”

To achieve this, diverse programs are offered to Jumbo employees in order to increase organizational culture employee morale, employee productivity, and employee performance. For example, one of the programs is about health, in which employees are encouraged to stop smoking, having the right job at the right age, eating healthy, and do sports with the aim of improving the employee

life’s quality. Another program consists in making people feel that they are part of the Jumbo community. As Rob states, the main objective of this course is taught: “treat others like not as you would like to be treated but as they would be treated.” Jumbo ensures that their employees are well cared and if any personal circumstance arises, that person has a team who can help him/her.

Rob Jacobs also has completed multiple programs, of which one of them was: the Senior Leadership Development Program (SLDP) at Nyen rode Business Universiteit, which brought him new ideas on authentic leadership. Next to external programs a lot of management programs with different kind of levels are offered by Jumbo to their employees. “What I have noticed when you start working is that you have different needs than when you are further in your career, for example, how to manage. The most important thing I have learned throughout all these years is: be open for feedback, ask proactivity for feedback and understand what you want to achieve. Understand how you act and behave under pressure, what makes you enthusiastic, what is hard for you, etc. So, once you have settled that perception of you, people will not be afraid to give you feedback. That is the most important thing you must work on as a leader. Furthermore, understand that you cannot be an expert in everything, you must trust your colleagues, support them and challenge them, make sure their ambitions are clear and thus stretch yourself and others. Thus, my role is in the company, support, stretch, trust and discipline. So that we create an energetic environment to work in.”



## Rob Jacobs

As a senior member of the Jumbo management team, Job Racobs reports the director of supply chain, apart from working on the Strategic Business Planning and Digital Design Boards for Jumbo.

In order to establish an E2E supply chain that is future-proof, manage change, improve the supply chain and foster innovation, Rob Jacobs’ role and the department’s goal is to integrate the company’s vision into the supply chain strategy.

Rob is also responsible for creating and implementing the Supply Chain Strategy and Innovation. As a result, with his team, Rob runs projects and develops systems using both the more conventional waterfall method as well as agile methods of working.

Will tide turn? Currently ‘heropreneurs’ are dominating the entrepreneurial world. But possibly the activating changemakers will take over soon! What is required to let the social entrepreneurs of the future flourish?

TEXT Bauke Wijnands DESIGN Marijn Konings



## Social Entrepreneurship, the future

In November 2022 the 27th edition of the United Nations climate change conference took place in Egypt. Many governmental representatives from all over the world argued that the climate change problems are really severe and that we really should do something to tackle this major problem very soon. The question is not how, but who is going to do it?

### Social entrepreneurs

Social impact is usually the output of very hierarchical top-down decision-making within large organizations. But apparently, the new generation of entrepreneurs is changing this status quo. Entrepreneurs being one of those

people most affected by a certain issue appear to be more focused on creating social impact by building solutions themselves, rather than focusing on solving problems for beneficiaries. Young people experiencing the problem they want to solve themselves, have the best knowledge to fix the problem. By giving people the opportunity to solve their own problems by providing required resources, problems can be solved more locally instead of using old impact frameworks. Also it is of importance that social entrepreneurs have the ability and space available to solve issues themselves. The TU/e has a clear vision on the integration of

challenge based learning in our courses by 2030, which is already a good method for solving problems locally. However, still the problem is not owned by the problem solver him- or herself. The next question is, how can we support and motivate people to design solutions for their own problems most effectively?

When talking about social entrepreneurs having a clear vision for their company deducted from own experience, Yvon Chouinard is a good example. As a mountain climber, he knew the value of the nature he was surrounded with constantly, and as a business man he knew the negative

side effects of producing goods in a non-environmentally responsible way. Therefore, he introduced the term ‘clean climbing’ and he founded the private benefit company named Patagonia in 1973, which offers clothing for climbers and is also a well-known brand in the Netherlands. It is seen as one of the forerunners of societal responsible entrepreneurship. The company is known for its activist activities and role in the global climate discussions. Patagonia presented its vision as “Patagonia is in business to save our home planet” and from 2002 onwards it spends 1% of its budget to charities related to protection of nature and climate.

### The ‘betekeniseconomie’

Someone who states that a more revolutionary change is required is Kees Klomp. He idealizes a fundamental different way of thinking in how business models should be applied in order to solve major problems like climate change. He is lecturer at Hogeschool Rotterdam and calls for the adoption of the ‘Betekeniseconomie’; the societal trend in which the human desire to meaningful trading becomes more dominant. This is societal entrepreneurship, being applied in a broader sense.

Over the years, economic growth has become the ultimate recipe for a flourishing world. However, the flip side of that worldview is that major trends as climate change, loss of biodiversity, growing gap between rich and poor, increase of people having depressions and societal polarisation are fundamentally disrupting society. Following Kees Klomp, these trends all lead to ecological, social and individual costs which are even so high that he speaks of an existential crisis.

The solution for incorporating these costs in our current economic system, is a completely new economic narrative; the ‘Betekeniseconomie’. Here, ecology is the starting point of this new (to-be designed) economic model. How this economic model should be designed requires a completely new way of thinking and a



change of the role of money in our society. Therefore, it is interesting to think about the role of Industrial Engineers in this new economic model. Once we have to solve a business case in which we have to model and quantify the effect on the level of biodiversity, the societal polarisation, depression of people and on the gap between the rich and the poor, our knowledge as Industrial Engineer should be used in a different way. Our role as modeller and optimization expert won't change much, but the value of money and the respective value of the earlier mentioned ‘major trends’ should be reconsidered in our models.

In order to use us, Industrial Engineers, most effectively in solving problems in the ‘Betekeniseconomie’, firstly the ecological, social and individual costs should be quantified; the value of the biodiversity loss and the effect of a depression is not quantified right now. In case the costs are not quantified at all, the Industrial Engineer can't model the business case. Once all these ‘costs’ are quantified, they can be compared among each other. Secondly, the trade-off between the respective ‘costs’ is lacking, which makes it difficult to optimize a business case. Once the trade-off between all the costs is defined, it becomes possible to quantitatively incorporate the loss of biodiversity when cutting forests for economic benefits.

All those numbers and trade-offs are nice to have, but what is the end goal? The term ‘Betekeniseconomie’ provides guidelines for how to make our required economic transition, in order to cover all the – until now – undefined costs. It shows that we should transform our current model of constant economic growth, efficiency and competition to a model of co-creation, connectedness and value.

### Value of your eurocent

Now, how can we start this transformation? As a manager or a politician; ensure that young social entrepreneurs are provided the right resources and support to solve problems they perceive as their problems! Encourage them to become activating changemakers. As a problem solver or entrepreneur; design your business model as if our businesses are operating in the ‘Betekeniseconomie’. Money is becoming less valuable with the day and the ecological, biodiversity, polarisation and depression costs become more expensive in their trade-off with economic costs. So, action should be taken on the short term. What is the value of your eurocent?

Industrial Engineering has been characterized by one word in the past years; optimization. This has often been associated with minimizing costs, maximizing profit, maximizing efficiency or other operational KPI's that can be optimized in various different ways. However, in this changing society, the focus of optimization is shifting towards more societal causes. With the need to reduce carbon emissions and slow down the heating of the earth, sustainability is more and more important in all sectors. Optimizing company operations in terms of sustainability will be key in any business in the future. Tarkan Tan, professor at the University of Zurich, tells us more about sustainable approaches to business processes.

TEXT Marijn Konings DESIGN Marijn Konings



## Sustainability, the newest addition to optimality

Since 2003, Tan was a lecturer at the Eindhoven University of Technology in the faculty of Industrial Engineering as well as being involved in the Executive Master's program at Tilburg business school. After his studies, Tan moved to a PhD in Industrial Engineering. In his PhD, he learned more about how to apply knowledge from a master's program for further academic

purposes. He applied advanced demand information in inventory control. 'In this field, you collect interest from potential customers and implement this in your inventory control'. This is still quite stochastic as it is not an order yet, but just interest from a customer in the form of website clicks or google search requests. Along with these digital forms of internet,

information collected by sales representatives is used too. 'We expanded this to different contexts such as advanced capacity information or advanced supply information, creating the basis of what I had been working on for quite some time'. Following the request to form a working-group in capacity management problems, Tan involved his prior knowledge of



### Tarkan Tan

Having started college in Turkey, Tarkan moved to the United States for his PhD at Columbia Business School in New York. After recognizing that the States were not for him, Tarkan moved back to Turkey for work in industry, after eventually finishing in PhD at his alma mater in Turkey. Tarkan worked for the TU/e since 2003, working in several research groups of Industrial Engineering, doing research as well as teaching several main Industrial Engineering courses such as Deterministic Operations Management and Sustainable Supply Chains. Tarkan now moved to the university of Zurich, where he continues to teach in his discipline of (sustainable) operations management.

inventory control in this field to investigate the interaction between the two phenomena.

Following his PhD, in order to further grow the application of his knowledge, the interest in spare parts management was recognized, and Tan started to work on spare parts management problems, which was very much driven by real-life industry cases. A unique feature that the TU/e offers, since other universities across the world did not focus on this. 'At my prior university, the Middle East Technical University of Ankara, none of the students had industrial projects. The mindset was about coming up with a thesis that would be hopefully published in a journal. We took a theoretical problem and extended it a little, with is great if you only have academic ambitions, but there are big advantages of having actual implementation impact' mentions Tan. An ambition to help the society for the better, and the growing importance and interest for sustainability caused Tan to switch his focus on sustainability in his field of interest.

**Sustainability in Industrial Engineering**  
'I am not an environmental engineer, so I do not know about the chemistry in

sustainability, I do not know which material is best, but in our field, trade-offs involving sustainability are very typical in models' says Tarkan. Industrial Engineering is used to the trade-off between cost and service or lead time, but incorporating sustainability means introducing a full new layer. 'It becomes a trade-off between cost, service time and sustainability. People see sustainability as a topic on its own, but involving sustainability is just about adding another layer and expanding the problem.'

Focusing on sustainability does not mean that, for example, emissions need to be minimized, but rather that sustainability is considered in industrial applications. Tan: 'There is still a function like minimizing costs or maximizing profit, but with a direct reference to the impact of sustainability in the form of a constraint'. Taking sustainability as an objective function is not the way to analyze sustainability. 'It is quite possible that the costs associated with sustainability are so low that it ends up not having any importance in your objective function, and thus in your solution' says Tan. A way to tackle this problem is through

the use of constraints on variables associated to sustainability.

'Involving sustainability as a constraint means your model must meet the requirements you set.'. A great example Tan gives is a project on transport mode selection. Introducing the costs of emissions in the objective meant that sustainability had a real value in the model. 'However, we figured out that unless the emission costs reach at least hundreds of Euros per ton, and in some cases even much more than that, it does not seem to make any difference in decision making. If you incorporate a constraint in the model where, for example, the emissions this year must be 10% less than last year's emissions, you have to meet this constraint, making the model more impactful.' Involving sustainability in operations is a recent trend, but is still not used in every case. Many cases or situations do not involve sustainability in their models yet. 'I think the biggest misperception is that people take sustainability as a 0/1 state. It is not a state, but rather a direction. You can never label a supply chain as sustainable, but rather work towards mitigating the impact of the supply chain'.

*'Big data analysis in industrial engineering, combined with sustainability, is golden.'*



Another layer adding to the difficulty of involving sustainability in operations management are the changing issues regarding sustainability. Currently, several actions are taken to reduce the impact on the warming of the earth, but many other issues will need attention in the future. Waste management, water conservation, resource depletion, social sustainability, and energy efficiency are just a couple of examples where concerns on sustainability are real and actions need to be undertaken to cope with these issues. Although these are big issues, every step taken in the right direction counts. 'Sustainability is a trajectory. Every little project, every little action counts'.

#### Industrial Engineering to the rescue

Environmentalists make us aware of the urge to act on current issues, but it is, among others, us Industrial Engineers

that can make an impact. Everybody knows that switching fuels or sources of energy are steps that need to be undertaken, but there needs to be a plan to do this. Tan mentions questions that need to be asked before even thinking about the implementation;

- What are the steps to start the transition to more sustainable sources of fuel or energy?
- What happens to the existing supply chain of resources?
- What trade-off do you apply in terms of costs?
- How is the budget made up, and how is money divided over different cost posts?
- Where do you first invest, where do you get the money and which partners are required?

Among with these, there are tens,

maybe even hundreds more questions that need to be asked before the start of transition. All these questions require a broad knowledge of finance, project management, personnel management, stakeholder analysis, contract negotiation and much more that is covered in the field of industrial engineering. From experience, theories and applications, these questions have been combined in a model that covers the 5 general sustainable supply chain principle one should take into account as an industrial engineer in assessing such a problem.

1. The economic aspect; ambitions are good, but the reality of financial sustainability must be prioritized.
2. Measurement; do not only act, but also measure your environmental and social impact.
3. Service is key; we don't need the lamp, we need the light.
4. Sustainability is a direction, not a state.
5. Work together with all stakeholders, only then do you go into the right direction.

'Of course, priorities have to be set', mentions Tan, 'but taking all these principles into account will make you see the full perspective of the problem and allow you to move into the right direction'.

#### Use Case

Theories have to be put into practice for them to actually be valid and contribute to literature and to society. A good

example of how the principles mentioned before have been used in a real-world case is a study by, among others, Tan at Philips. Tan: 'Through my contacts in academia I came into contact with a project on sustainability at Philips. Philips was working heavily to assess the sustainability levels of its suppliers'. Suppliers would be assessed on their sustainability, and violations or improvement points would come up, which could then be improved by the supplier. However, as one might imagine, not all of this was taken in by the supplier and re-audits would point out that the same issues are still present. 'Philips was fed up, and wanted to find an efficient system on how to assess the levels of all their 15000 suppliers'.

Since not all suppliers could be visited, intensive data collection and on-site visits for the most interesting and important suppliers was performed in order to produce a machine-learning model. 'We looked at the characteristics that define sustainability issues at suppliers, such as the location, the size of the company, the ownership, and other factors, in order to come up with a model that tells you what similar suppliers could face as sustainability issues'. Based on the characteristics, certain solutions would be provided, which has over time led to a 50% improvement at the participating suppliers. 'The model is continuously supported with real-life data, making the model smarter, and Philips has been implementing it, eventually becoming an industry leader.' This project at Philips shows greatly how an industrial-engineering mindset can be used for various purposes, such as sustainability in the given case.

#### Awareness

Sustainability needs awareness for it to be fully integrated in the field of work. When asked whether the level of awareness is sufficient, Tan replied the following; 'Absolutely not. One of the biggest issues is the awareness as no awareness means no action. However, I have been observing a shift, especially in the younger generation'. Sustainability shifted from a side-goal that was nice to be achieved to a goal for most, and a priority for some. Not only



are suppliers getting a more sustainable mindset, so are consumers. '10 to 15 years ago, there was no willingness to pay for sustainability, while people are now ready to pay more, which means there is more room for the business side of sustainability to operate from a cost point of view. The sense of urgency however is not there yet'. Tan mentions the concerns around the Paris agreement, where the goal to keep the increase of temperature on earth to 1.5 degrees is not likely to be met.

Awareness should therefore be boosted, which starts in education. Together with colleagues, Tan opened the course 'Sustainable Supply Chains', which incorporates the views mentioned in this article to supply chains. 'It should however not be just one course, but part of every single course. You do not have to be an expert in sustainability to incorporate use cases with particular objectives.' This transition starts at the professor, where Tan suggests more effort to be spent on providing more workshops and seminars to actively push projects and courses to include sustainability.

Not only are students more aware of sustainability concerns, their models also become more representative of reality. 'Customers are asking for the incorporation of resource scarcity, stakeholder pressure, customer and consumer pressure, and the costs and risks associated to that. Models involving all these factors will show better replications of reality and thus improve results and customer satisfaction'. Aside from consumers,

regulatory organs are putting pressure on the involvement of sustainability factors in models, as well as the competitiveness of other companies to be labeled 'sustainable'. 'People might say we are not optimizing anymore, but we are optimizing, maybe even more than without involving these factors'.

#### Sustainability on the rise

Aside from the benefits provided by a climate-aware view on business, there is personal advantage in this field of work too. 'Sustainable operations are on the rise in the job market. Big data analysis combined with sustainability, like the project at Philips, is golden and if you can do data and sustainability with a master's degree in industrial engineering, you will not have a problem finding a job'. With more and more opportunities in technology for the switch to more sustainable forms of energy, lighting, transport, service, and general use of commodities, this sustainable view on projects and operations will be crucial and offer great chances for job applications.

*'Customers are asking for the incorporation of resource scarcity, stakeholder pressure and customer pressure, with costs associated to that'*

In early 2021, when crossing the street after 9 would still result in a penalty and Proctorio was still acting as our exam surveillant, we received the half-yearly email about the exchange semester. Enthusiastic as ever, Bea told us about all the possibilities. Unfortunately, this time she included a short but unpleasant message: the possibility of an exchange outside Europe was very unlikely. That was quite the disappointment, as I was convinced I had seen everything in Europe (how naïve they were, I hear myself say). I decided to sign up for Taiwan, knowing in the back of my mind that I would probably not go on exchange in September 2021. But I would be the one to have the last laugh since my assigned spot for Taiwan would still be valid in February 2022.....

TEXT Thijs Muselaers DESIGN Marijn Konings



## 2022, a year of (ex)change

Well, as predictable as Theo ordering 1 beer at The Villa, corona had other plans. Result: another lockdown and still no possibility to go to Taiwan. However, by now, everyone had learned their lessons to predict the unpredictable. So, I had thought of a backup plan this time. Scandinavia seemed great and I would love to visit the area one day, but I preferred wearing shorts at least once during those six months. Southern Europe then? Spain, Italy and France, fantastic countries one by one, but places that I already visited before. What about Portugal then? Besides some

drunk nights in Albufeira, I had never set foot in that country. In addition, anyone I had ever spoken about Porto had been solely positive. So, basically without knowing anything about the place, I decided to go for it. And to be honest, knowing less about the place makes it so much better. Perfectly in line with this Scope's theme, I am convinced that the greatest change happens when you see the necessity of it. In other words, because there is no one to rely on, you need to and will sort things out for yourself. Yes, I was super excited about that prospect!

In February 2022, after 3 weeks of Costa Rican sunshine (sorry for mentioning it, but I just can't stop talking about that journey either), the moment finally arrived. My (ex)change was about to start. Facemask on, passport and belongings packed, I boarded Uncle Ryan's iron bird. The first night out, I still remember vividly. On the Erasmus page, a party (the first of many) was planned in Adega. For those who have never been to Porto, Adega (Leonor) is surely the best student pub in Porto. 3 wooden floors full of cheap beer, crazy internationals, and fun locals. Although



don't let the number 3 trick you, cause in terms of surface area, I think even The Villa is bigger. Not that it matters though, it is Southern Europe, life takes place outdoors. Surely enough, every night a large crowd gathers around the square at Adega. Pre-drinking till 2 a.m., because the real party only starts after that time in the South.

Anyways, without any expectations, I arrived. There, one thing became clear very quickly, this was the place where I was going to spend so many nights. The atmosphere was great, but what struck me most that night was the openness of everyone. To compare it with something, it felt very much like the intro week of our student life, but without all the 'look at me standing here'. Don't get me wrong, there was definitely great partying and drinking (and yes, also some showing off), but there was this nice, relaxed vibe. Everyone just accepted each other and was interested in you and your background. It was really the ideal setting to meet a lot of people in a short time. them.

If I wanted that 2022 was really going to be my year of change, a good place to live was important too. So, after two weeks of living in a beautiful apartment in the city center, I decided to change

my location. Not that I didn't like the place, but I did not come to Porto to sit in my room by myself. I realized that I liked living with other people, especially in a new city. Finding a new room might sound impossible for us Dutchies, but in Porto, one single post on Facebook did the trick. 250 euros a month and room in a great accommodation with 12 internationals is yours. Really, for anyone still going on exchange semester, make sure you live with a few internationals. It's great to see all these different cultures and habits side by side. Supported by swinging funk music, our Brazilians roommates would prepare the most amazing meals every Sunday. They always asked us to join because there was plenty. Yeah, the Dutch could learn a thing or two from that kind of hospitality. And actually, the same can be said of Simon, my Moroccan house bro. Ever eaten tajine? Just do it, it's amazing, especially if he prepares it. Lastly, when talking about my house, I cannot forget to mention Gabi and Wika. These two Polish girls really knew how to party and quite frankly made me realize that I don't know anything about Eastern Europe.

I just realized that this story is already more than one page long, but I still did

not really tell anything about Porto itself. Well, that is the beauty of exchange I would say. Everyday something new happens and everyday new stories are written. But, since I have the tendency to talk a lot or at least to be long-winded, for the people still reading (you have my respect), I will try to summarize it a bit.

First of all, partying in Porto is crazy. There is this beautiful mix of student bars, reggaeton places (it's Southern Europe, what did you expect?) and techno clubs. Adega was the place to start your night, which could be any day of the week, but I would say that our student Thursday is their Wednesday. Pre-drinking at Adega often meant ordering a Sommersby with Absinth, a crazy drink that tastes like apple juice... After such a drink, we normally wanted to party for real. Well, just go to Gare, Plano B, Baixa Bar, Café au Lait, Perola Negra or Ferro bar. Funnily enough, there was even a techno club called Industria (although, I have to say, the Portuguese don't really understand yet that 'Industria is the best').

On nights that we did not go out, we normally went to Jardim do Morro to watch the sunset. Just across the famous Ponte Luis bridge, this amazing garden

provides you the best spot of the city to watch the sunset. Well actually, strictly spoken, the other side of the bridge is Vila Nova de Gaia, but everyone just calls it Porto too. After the sunset at 9 p.m., we usually went for a place to eat. Yes, that's true, eating at 6 or 7 o'clock is laughed upon in the South. Although to be honest, it makes so much more sense. Just have an extra lunch at 5 and you will survive till 9. Concerning the Scope theme of change, I really think I have diner later since I'm back in the Netherlands.

Anyways, Porto has an insane amount of restaurants to choose from. To be completely honest, their own cuisine - consisting of Bacalhau, Francesinha, Bifanas and Polvo à la Lagareiro - is nice for one time, but one time only. Although, the most amazing pastry you will even taste has to be their Pastel de Nata. Man, I would love to have one right now.

But sure enough, because their own cuisine isn't like Spain or Italy, the variety in restaurants is awesome. My favorite one of all? Tapa Bento or Ro, or maybe Boa Bao, Rua or Siktak? Well, you see my point.

The city itself has also a lot to offer. It's beautiful parcs like Parque das Virtudes, the famous Douro River, including all the Port Wine cellars at the Gaia side, Cais the Ribeira and Cais the Gaia, oh and of course Aliados square, were we celebrated Porto becoming the national champions, Portugal day and the craziest week of all time: Queima das Fitas! The latter was a whole week of partying in the beginning of May (there were no lectures because of it). The atmosphere was like Carnival and the Introduction week at the TU/e, combined. 60.000 students celebrating for one week straight, it is really something else.

All these things are nice and sound amazing, but it is only great if you have great group of friends to experience it with. Because of all the circumstances, you make friends in no time. What I especially liked about it, was the fact that you could plan different things with different groups. The only time people said no to a certain activity or holiday, was because they had already planned something else. I found a group of F1 fans, so yeah, why not go to Barcelona to



watch the race? Or combine Seville and Morocco, cause some want to go to the one and other to the other one. Or Madeira, Lisbon, the Algarve region, Sintra, the list goes on and on. I hope I don't sound braggy or anything, because this is really the exchange life everyone can have.

Oh shoot, before I forget, I did actually study there too. Universidade do Porto made me realize that here at the TU/e, everything is so well-organized. The university in Porto was nice, I liked studying there and I liked working on assignments with people from all over the world. But the inefficiency of certain things is sometimes just a bit, well, interesting. Postponing deadlines was the most normal thing to do, just as it was very common to not know your lecture room or exam room up till one day before. However, all those things didn't really matter, the vibe was good so why bother? In the end, everything has its charm and sometimes you just learn to appreciate the things you have here in the Netherlands too (which we should do more often to be honest).

Okay, that's about enough, I think. I could really go on forever about my exchange. Looking back at it, I realize how lucky we are to have these opportunities and how much we should appreciate that. So, was 2022 a year of change for me? Well, change or not, at least I had a great time ;)

Muito Obridago Porto

Thijn



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SCAN ME



Last summer, we travelled with 22 students to the West Coast of the USA. Paul Grefen, Paul Wiegmann, Robbert Reijnen and Luuk van Iperen were joining us from the TU/e. After a whole year of activities, such as the IRP Masterclass about the topic Real-Time Economy and a case evening, it was time for the amazing study trip. This study trip was of course not possible without all the participating companies where we all performed a 100 hour consulting project. But what have we done during our trip, and which amazing companies have we been visiting?

Here, we will give an overview of activities and company visits during our trip.

TEXT Gwen van Leeuwen DESIGN Marijn Konings



## International Research Project 2022

### Seattle

The first stop was Seattle. Due to the problems at Schiphol, we all arrived at 05.30 am at the airport, and had our flight at 11.00. Luckily, the queues were not that big for the intercontinental flights, and we had 3 hours left before our flight. We landed at 11.30 am in Seattle, so we still had a whole day. During the 4 days we saw beautiful skylines, because there are many skyscrapers and of course the space needle! We visited the Amazon HQ (read: 90 skyscrapers in the center) including the Spheres, and they have learnt us about customer needs before they even knew it themselves. Furthermore, we visited

PACCAR Parts and saw the assembly of the huge classical American kind of trucks.

### San Francisco

After our time in Seattle, we flew to our next destination: San Francisco. That afternoon, we started with a baseball game of the Giants. The next day, we visited Alcatraz Island, a prison with the most dangerous prisoners where it was (almost) impossible to escape from. Finally, we went cycling on the Golden Gate Bridge, which was very high, but the view was definitely worth it! We visited the Dutch consulate and the University of Berkeley in San

Francisco. During the visit, we met students of the Rotterdam School of Management. At Berkeley, we received a lecture on different research topics of a professor in Healthcare Management.

Moreover, we visited the companies Aryaka and Philips Hue. At Aryaka we learned something about cloud solutions as a service and cyber security. At Philips Hue, we talked about innovations in a 'start up vibe' and had to do some pitches about our ideas for future products. Afterwards, they invited us to a really chic bar.



### Roadtrip

In San Francisco, we rented four cars for 7 persons, with which continued our trip. From San Francisco to Los Angeles, we made a roadtrip on Highway One, with fantastic views and national parks. We hiked at the Big Sur, surfed in Pismo Beach and observed some sea lions. We also had an informal company visit at Firestone Brewery, which was a huge Beer Brewery with totally automatized processes.

### Los Angeles

Los Angeles had a couple of really interesting company visits on the planning. The first was the Port of LA, where we had a boat tour and got some explaining about the logistics in a port. Afterwards, we went to the Warner Bros Studios, where we drove on the set of different movies and series. At the end of the day, we went to the Santa Monica Pier, where some of us went on a rollercoaster!

The day after, we had two company visits: SprintRay and NASA JPL. SprintRay makes 3D printers for dentists, which was really interesting to see because it is quite a new innovation. At NASA JPL, they told us something about their findings in space, we even sat in the control room, and we saw how they assemble a satellite in a clean room. On our way to San Diego, we visited Disney, where they told us all the ins and outs

of Industrial Engineering in their park.

### San Diego

After Los Angeles, our journey continued to the final American city of our study trip. Near the border of Mexico, you will find the beautiful city of San Diego. We arrived quite late in San Diego because of our visit to Disney along the way. The next day started early because we had two exciting company visits: ASML-Cymer, and Pfizer. At ASML-Cymer we learned more about the way deep-ultraviolet (DUV) light sources work and went on to conduct some

interesting real-world cases. Pfizer showed us around their research and development facility and gave us the chance to ask questions to some of the big players within Pfizer. We finished of our journey in San Diego by going snorkeling with sea lions and doing some sightseeing for the last time.

After this amazing three weeks in the USA, it was time for some relaxation in the holiday week. With all 22 students, we flew to Mexico where we did a lot of sightseeing, snorkeling, diving, and of course some partying.



# Introducing the C.I.T.I.-board

TEXT Sarp Deger DESIGN Marijn Konings



Hey there lovely reader of SCOPE! Welcome to the page of C.I.T.I. where you can expect to read great travel stories from your fellow Industria members, can learn more about the European network of Industrial Engineers, ESTIEM or can have a glimpse at what we are preparing for all of you in the upcoming months!

But first things first, who are we? We are the board of international pillar of Industria and the direct responsible for anything ESTIEM related. Our goal is to provide the opportunity for all Industria members to “Experience Europe” via events we organize. You

can see yourself with a group of Industria members participating in week long exchanges to another European city and network with that city’s brightest IE students or you can simply get a chance to solo travel around Europe attending events that will improve you academically, personally, culturally or career oriented! The opportunities are limitless and as the board we strive to provide you those events for the minimum cost!

Now that you, dear reader have a better understanding of what we do, let’s start with this SCOPE’s stories. You will first read about a solo trip to

Finland for Europe 3D event and later on read about ESTIEM’s biggest event, council meeting that was hosted in the lovely city of Istanbul, Turkey. Hope you enjoy these travel stories and we hope to see you somewhere in Europe! We are there for you and don’t hesitate to ask for any questions you might have from us!

With kind regards,

**Sarp Deger**  
Chairman of C.I.T.I.



C.I.T.I., from left to right: Jorrit van Iersel, Sarp Deger, Jeroen Adams & Bjorn Bouwman

# Europe3D in Finland

TEXT Bjorn Bouwman DESIGN Marijn Konings

As a fresh C.I.T.I. board member without any ESTIEM experience, the Europe 3D in Tampere and Lappeenranta was the perfect opportunity for me to take my first steps into the wonderful world of ESTIEM. The roller coaster ride already began before the event even started. The day before the flight to Helsinki I received a message from my fellow hostee: ‘Hey man, at what time will you arrive in Tampere and are you also taking the train from Helsinki?’ Less than 24 hours later we met at the train station of Helsinki airport, ready for a 2-hour journey through the beautiful Finnish nature.

Later that evening, we got to know the organizers, our host and the other participants. It should not be a surprise that the first night ended in a bar. We played pool, sang karaoke and ended up eating some late-night snacks altogether: the first impressions were made.

The next morning, our first lecture was scheduled. While drinking several coffees, we learned about the Finnish political system and politicians. However, the interactive session at the end was even more interesting. We got the assignment to propose a plan to become the next Finnish prime minister. People showed a whole different side of themselves compared to last night. During the ICAT, which is a training about different cultures and the differences between them, I learned so much about all my fellow participants and their personal situations. From the differences between all German participants to the similarities between Italian, Turkish and Swedish participants, it all surprised me.

Then the showpiece of every ESTIEM event: the International Night. Every participant brought and presented some snacks and drinks from their country of origin. Often, there is even

a special way or procedure to drink the drinks or eat the snacks. After enjoying the culture of the participants, it was time to do something typical Finnish; Relaxing in the sauna and afterwards swimming in the lake. Something Finnish students do frequently. Imagine being in the sauna with a bunch of students and suddenly running outside into an almost frozen lake, that be an amazing experience. And indeed, it was.

Within the week, I got to know amazing people in so many ways. We formed an amazing group till the end of the event and afterwards. We travelled back to Helsinki airport together, hung out there, drank some last Finnish beers and all headed back to our own homes. I strongly believe I have met people there who I will see much more often in the future and at the end of the event no one said goodbye, everyone said: ‘till we meet again’.



# ESTIEM Council Meeting Istanbul

TEXT Jeroen Adams DESIGN Marijn Konings

The beginning of November of this year marked the 65th Council Meeting of ESTIEM which took place in Istanbul. This edition was bound to be a special one since there is someone from Eindhoven in the ESTIEM board again, Max Sturkenboom and for the very first time a Industria board member joined, namely Jens Adriaanse. In total 9 people from Local Group Eindhoven had the chance to be part of this year's Council Meeting.

Everyone was really excited to discover Istanbul, the city of mosques, palaces, parks and mansions with its huge historical and cultural texture on the continents of Europe and Asia. The rich history of Istanbul has seen 120 kaisers and emperors throughout history. It has hosted the three great civilizations of the Roman, Byzantian and Ottoman empire and will be the centerpiece of this Council Meeting. The Council Meeting is the statutory meeting of ESTIEM and takes place twice a year. It is composed of two parts: The General Assembly, where everyone is updated on what is going on in ESTIEM and decisions are made through voting and The Working Groups, Training Sessions and Company Workshops, where smaller

groups either work to develop ESTIEM, or improve their soft skills. In total there were about 250 participants from over 30 different countries along with over 150 organizers.

Together with Jens Adriaanse and Jorrit van Iersel, I travelled to Istanbul. Both had not participated in a Council Meeting and therefore had very little idea what experiences would wait for them. Jens, Jorrit and I, quickly referred to as the 3J's, landed on the Asian side of Istanbul a day before the event started. Since our apartment for the night was on the other side of the river, we had to take a taxi over the Bosphorus to the European side of the city. This was without a doubt one of the sketchiest but fun car rides everyone has had but luckily we all survived. The moment we got out of the taxi we got confronted by one of the busiest and hectic cities in the world. After making a quick stop at our apartment we headed into Taksim Square, a major tourist and leisure district and seen as the modern center of the city. When trying to find a place to have dinner we were constantly approached by people who wanted us to enter their restaurant and who all turned out to have friends or family

from the Netherlands when hearing we were Dutch. or by people who were selling items varying from packs of tissues to a funnel you could conveniently also use as a hat. When we finally found a suitable restaurant, we soon discovered we were the only ones in the entire building without a Galatasaray shirt on. Fortunately, they just won the derby against Besiktas, so everyone was in a good mood. Afterwards we went for a drink at a café where we tried the typical Turkish drink Raki.

Unfortunately for Jens, the drink has a strong anise taste and since Jens has had some bad experiences with sambuca he had a hard time finishing his drink. In the meantime there were constantly people coming by who were selling items varying from packs of tissues to a funnel you could very conveniently also use as a hat which a guy kindly demonstrated. After a few drinks and with the fact that the entire event was still ahead of us in our minds we went back to our apartment to at least have one good night of sleep which was harder than expected since Turkish people apparently think playing loud music and screaming outside are great activities to do at 5 AM in the morning.

The following morning we went to a small bar in our street and after finding out no one could speak English we pointed to the dishes we wanted only to find out we ordered everything from the menu. After our extensive breakfast we headed to the five star hotel that hosted all the participants of the event. The hotel, situated in the south west of Istanbul, we already met quite some ESTIEMers and chose to investigate the neighborhood after we dropped our luggage. This area of Istanbul was not the most touristic part so consequently the highlights of the afternoon were a local graveyard and a museum where almost everything was in Turkish. When we got back to the hotel we got some dinner and met the people of our very own family.

Since there are so many people at a CM it is hard to meet everyone so you are put in families - small groups of ESTIEMers from different LGs and different experience level, that you will be able to meet during the some activities and family gatherings. During the night a club was rented out for all participants and this sparked the beginning of a week full of really fun cultural activities, a lot of big parties and some important discussions and votings that would shape the future of the ESTIEM network.

Every morning, multiple busses would take all participants to the place of the general assembly at around 8 in the morning from the hotel to the campus of Yildiz University. The general assembly was in a huge conference room that could easily host the couple hundred participants. For Istanbul standards the university was really close although the total transportation time still took about 45 minutes. In order to make the general assembly as fluent as possible a chairperson



is elected. He or she is responsible to lead the general assembly and ensure that the agenda is followed while sticking to the time. Three secretaries are elected as well who are responsible for taking the minutes and last but not least a voting committee is elected which were actually me and a Portuguese girl. Together we had to explain the voting procedures and present the voting results. During the days we mostly discussed and voted upon the new budget, motions raised by members and chose new leaders. Board members and department leaders presented what they had been the doing the last year and members had the chance to ask questions to them. As you can imagine, it is hard to keep full attention during a day full of presentations and updates so there were plenty of energizers and punishments for people who fell asleep. These punishments consisted mainly of doing silly dances on stage so this was a big incentive to everyone to stay awake.

Lunch and dinner was also provided on campus in huge canteens. Everyone had to stand in line with their iron plate to get their food which always consisted of ingredients that we could never really identify. After the general assembly there was time for working classes and groups and even a big company fair. Afterwards we would all be transported back to the hotel where we had around half an hour of free time where we could prepare ourselves for the night activity

of that day. This was always a huge themed party somewhere in a club or bar in Istanbul. These included a Halloween party, neon lights party, a gala and of course an international night. During this people bring typical drinks and snacks from their home country. Every country then gets their own table where you can display what you brought. Everyone then has the chance to go by the tables and try whatever drinks and snacks people have brought. Since there were around 300 participants and over 30 nationalities, one can imagine how these nights end up.

With so many participants from so many different countries, the council meeting is a really unique opportunity to meet new people and cultures. You can meet students of Finland to students living in a touristic city in Cyprus. You can get to know what it is like to currently study in cities as Saint Petersburg, Moscow and Kyiv and how severe your daily life would have changed. It is really refreshing and can really open your mind about how you can be really stuck in your habits and way of living. But most of all, it is just really fun to meet so many people from so many different countries. After almost a week full of general assembly, experiencing a lot of what the Istanbul has to offer, tons of cool parties and a total amount of sleep of about 10 hours it was time to head home again full of amazing experiences and great memories.



# Introducing The Crew

TEXT Noa Vogel, Anniek Jekel & Jasmijn Sevarts DESIGN Marijn Konings

My name is Noa Vogel, born around 20 years ago in a village named Veldhoven. I started playing football when I was about 6 years old, and today I am still playing there with a lot of friends. I went to secondary school in Eindhoven, at the Van Maerlantlyceum. It only takes 20 minutes to cycle from the university to my parents' home, which is very nice and convenient. When looking for a bachelor program to do after my secondary school I started looking in Eindhoven, and in that way I very quickly found Industrial Engineering. The program immediately appealed to me, since it considers a lot of different aspects in optimizing businesses and organizations. In my first year, I wasn't really active at Industria, since I was more active elsewhere and Covid limited the possibility to join other events. At the end of my first year I decided to sign up for the Tappers committee. This really made me more involved in Industria, as I joined many events and also did the CIA committee in my second year, which was very fun. In addition, I am doing the Induskia committee, which started in my second year, the KCC and some Tappers committees. When I first heard of the Crew, I immediately was interested and knew that I wanted to sign up for this sub-board as well. In particular, I am responsible for all the purchases as 'Chef Inkoop'. This consists mainly of beer, but also of arranging the bar at all our parties and for example the big tent for Pullùhrijk. I enjoy The Crew very much, as it is very fun to organize and be responsible for all those big parties and drinks. Last September, we tendered MomenTUM; a party for around 3500 people. This was a very big and busy event, and we put a lot of effort in it, but it was amazing to be responsible for such a big happening at the Markthal. All in all, I am enjoying my function within The Crew very much, and I am very much looking forward to the rest of the year. I hope to see you very soon in The Villa on a Thursday or at Pullùhrijk!

## Noa Vogel

Purchasing Manager

SCOPE DECEMBER 2022

Hi! I'm Anniek Jekel and I am fulfilling the role of Planning manager this year. I'm born and raised in the beautiful city Zeist, where I went to school and played sports like athletics, gymnastics and horse riding (if you count that as a sport). When I finished high school I first enjoyed my extra free time, thanks to Covid, at the beach all summer, after which I moved to Eindhoven for my studies. At first I tried signing up for another study but as that did not work out I decided to give Industrial Engineering a try, since I liked economics, math and innovation a lot. This turned out to be a great choice, and I'm not planning on going back to my first option. In my first year, I decided to join the Introduction weekend committee, where I met a lot of nice people I'm still very good friends with. I enjoyed being part of this committee and organizing an activity very much, so I decided to join other committees; I organized the sailing trip and made the yearbook of 2021/2022. At the end of my first year I also joined the Tappers, and it's an honor to be their Crew this year. Next to organizing activities and drinks I also like to go ice skating and skiing and if you lost me I'm probably somewhere drinking some beers with friends. I'm really looking forward to the rest of the year together with my fellow Crewties and I hope to see you at a Thursday drink anytime soon!

## Anniek Jekel

Planning manager



Crew; from left to right: Anniek Jekel, Noa Vogel, Twan Vredendaal & Jasmijn Sevarts

Hi I am Jasmijn Sevarts, born and raised in Heerlen. After doing high school there I had to make a decision about which study to do. Looking at all the different studies I came across Industrial Engineering, focusing on the social, economic, and mathematical courses this seemed like a good fit for me.

Unfortunately, during the first year I did not get to know many people at the study due to Covid 19. To make up for that I joined multiple committees in my second year at Industria, this was something I really enjoyed. Which led to me applying for my current function as Promotional Manager of the Crew.

As promotional Manager I get to be very creative as I, literally, make the calling cards for our bar The Villa. I also like the social part of the role as I am in contact with most of the Industria committees when we collaborate on promotional drinks for their committee activities. Those are the things I like most about the function.

Besides that, I am really grateful for the other crewmembers Noa and Anniek with whom we organize the best drinks and parties. I hope we can continue growing together and make the most of our crew year.

## Jasmijn Sevarts

Promotional Manager

# Introducing The IRP-Board

TEXT Wesley de Vries, Annika Spijker, Femke Krap, Tjielje Nabuurs & Myrna Biermans DESIGN Marijn Konings

I am Wesley de Vries and the Chairman of the International Research Project this year. Like many, I love to travel and from an early age, I tried to travel as much as possible. Even my longest-standing memory is a memory of me playing under the staircase in a house on holiday (being three years old). But what is it that makes traveling so interesting? I always think that traveling is one of the greatest learning experiences we can have. When traveling to other countries, with other cultures, behaviours, beliefs, and even food, we become more aware of how other people live and think. In my opinion, this is a very valuable thing as the world becomes more and more internationally oriented, shifting from the highest powers in the west to a more globalized world with multiple geopolitical players.

I joined IRP to be able to organize a great trip and together with 21 others learn new things, enjoy unknown food, and have a great time. I am confident that during this year we will be broadening our horizons and be breaking boundaries!

## Wesley de Vries

Chairman

My name is Myrna Bierman and this year I have the function of contracting manager of the IRP board 2023. This means I am responsible for the 100 hour projects which all participants have to perform before we go on the trip to get experience in the business world.

I think IRP is a great initiative to both explore job possibilities for industrial engineers in The Netherlands as well as in other cultures and countries. Furthermore, you get to know a lot of new people who have the same interest in traveling as you.

By being a board member, I hope to strengthen my managing skills and

I am Annika Spijker, and I am responsible for the External Relations of IRP. I already knew I wanted to join the IRP trip as a participant for a while, because I think the IRP is a once in a lifetime opportunity to explore a new culture in such a way. My part-time board year of Congress 2020 was such a success that I decided to do the part-time board of IRP as well. I am really looking forward to organize interesting company visits, university visits and an embassy visit in South Korea and Singapore with the External Relations committee. In my free time I like to play soccer and have some drinks with my friends.

## Annika Spijker

External Relations



together with my committee, I hope to find the best fitting projects for all participating students, such that all participants have a great IRP experience in line with their skills and interests.

I am looking forward to all projects and deliverables of the participants, and of course to our trip to south korea and singapore! In my free time I like to get some drinks with friends, or just have a chill evening with some good series.

## Myrna Bierman

Contracting Manager

I am Femke Krap and I am currently responsible for the CAT of IRP (Culture, activities and transport). I already knew I wanted to join IRP early on as a roommate of mine also was part of the board of IRP and was very enthusiastic and I think it is a once in a lifetime experience. I really looking forward to organizing all the fun activities in Singapore and South-Korea. Furthermore, besides joining the IRP, I am a bartender at Premium Student Bar The Villa and like to have some drinks with my friends. Additionally in my free time I really enjoy to play the piano and sail, especially when the weather is sunny!

## Femke Krap

CAT

Travelling and broadening your view is, I think, one of the most important things to do when you have the opportunity. It lets you put things in perspective, but also might inspire you to do things more. I always imagined that going outside of the western world would make me rethink some of my choices, but up until I was asked for IRP I was not yet able to do this. However, as financial manager, next to my job accounting, I am finally able to travel to an unknown culture. I, in the beginning, did not know about IRP as after being part of the parent day committee during covid became less active at Industria. After long months sitting at home I started some committees at theta, but was sometimes still wondering if there was something to do at Industria and luckily I was asked to do this project this year. I think it is one of the most interesting and rewarding committees to do as you develop yourself by getting in contact with companies in the Netherlands, but also by experiencing another (work) culture. Like all previous participants of IRP have told me, I would like to tell you: if you can, join IRP, you won't regret it.

## Tjielje Nabuurs

Financial Manager and Contracting

## 2022, The year of Change

The theme of this SCOPE, '2022, the year of change' is a very relevant one; what a year it has been. The year started off in the middle of the Corona pandemic. Christmas was once again celebrated differently than we would have liked it to be, and the start of the year was still full of Covid-19 restrictions. The education was often online again, and events could not take place. When finally, those restrictions were disappearing again, and we were all hoping that things could go back to the way it was, at the end of February Russia declared war on Ukraine. It goes without saying that it was, and still is, a huge shock for everyone to see what is going on there. And still at this moment, the war is not over.

The war also had many other consequences, such as the inflation. According to het Centraal Bureau voor de Statistiek, the inflation was most

recently 11.2% (in November), which is bizarre. The energy prices are insanely high, and many people worry about getting through this winter.

On a more positive note, this year also has had great changes. Finally, after a few months, the pandemic was not part of our daily lives anymore, and we could enjoy spending time with our family and friends. Within Industria, I – and hopefully many others with me – have made amazing memories last year. For example, we went on a skiing trip, we could enjoy The Villa in its full capacity again and the Gala could finally take place. But most important of all, we were together again. I look forward to 2023, were hopefully many new memories will be made!

### Farah Schepens

*Educational Officer*



## The value of Change



The year 2022 was a big one for me. With changes in my personal, academic, and professional life, I have seen it all. One of the biggest changes was finishing my Bachelor's and starting a board year at Industria! In May 2022, I received the news that I would be the next chairman of our lovely study association. I was ecstatic to hear this, especially since I did not have a clear backup plan. If I was not selected for the board, I would apply for the OML Master, without looking into this or other possibilities. THAT would have been an interesting change for the year. Now that 2022 is almost over, it is time to reflect on the changes and how you handled them. These insights can then be used again for 2023. For example, my life became increasingly busy when I

was combining the end of my Bachelor's and the beginning of becoming a board member. This taught me to prioritize tasks and plan task-specific moments in my agenda, instead of just winging it whenever I had some time. This is a valuable lesson, brought about by change, that I will use for the rest of my life. I hope that all of you have also successfully gone through changes this year, either personally or through external influences, that have left you with valuable knowledge and skills. Let's end the year 2022 with a bang of fireworks, and get ready for the last change: 2022 -> 2023!

### Rosan Kolff

*Educational Officer*

## 2022: Looking positively back

This year started off in a strange way. Together with the new year resolutions of 2022, the new omicron variant was present from the start. Contrary to one's new year's resolutions, omicron remained. Our country was in strict lockdown. A curfew kept us off the streets. Life at the university proceeded online. People expressed their displeasure on large scale.

At the end of January, the light slowly started to become visible at the end of the tunnel. Stratum was opened till 22:00. The TU/e opened its physical doors again. A meeting via Teams became an option instead of the default. Testing before entering a party became something to look back at, instead of being dreaded about. Thursday drinks became a thing

again. Life started to return back to what it was before 2020. Although, not completely as it used to be.

Should we not celebrate more what we can now do again? Look back at the period when we could not do the things we liked to do. To appreciate the freedom we now have again. Should we not complain a little bit less? Though I must admit, complaining sometimes just relieves. Sharing what bothers you. It helps to ventilate your thoughts. Nevertheless, looking back at the negative things sometimes lets us forget our reference of where we came from.

Seeing things from the positive side is not always easy. Coming up with 10 things that currently do not go well is in general

a piece of cake. Moreover, we also tend to remember the negative things better and more in detail than the positive things.

However, coming up with 10 things that go well is significantly harder. It requires more energy to do so. But the return you get is much more, compared to seeing things from the negative side. That is why my recommendation to you would be to look back at 2022. Which 4 things went well this year? What was positive in 2022?

### Bob van Ginkel

## Interested in writing for SCOPE?

SCOPE is always looking for people who are interested in writing articles, columns or personal stories, or in graphic editing and design of the SCOPE.

Are you looking to broaden your skillset and tell your stories to many readers?

Are you looking to extend your network and connect with the largest companies, as well as having interesting conversations with people in a function achieved through Industrial Engineering?

Contact our Project Manager via [pm@industria.tue.nl](mailto:pm@industria.tue.nl)



# Alumnia Board Update

2022: The year of change. It goes without saying that a lot has changed in 2022. New European measures against the corona virus and extremely increasing energy prices as a result of a new crisis. The war between Ukraine and Russia is having a huge impact on the rest of the world.

Moreover, the digital war between the United States and China is rising, where Europe wants to step in as well. These world powers all sign chip acts to ensure their part of the market share. It seems that change will continue in the coming year in many of the above areas.

At Alumnia we can't easily solve these world problems. Therefore, we just stick to our three pillars Inspire, Connect & Play. Many of you know the regular activities that we have, but 2022 was a year of change for us as well. During the winter period we normally have several lectures on the agenda. This year we changed our portfolio by replacing these lectures by the brand new "Alumnia Thesis Award". In collaboration with the faculty board of IE&IS and Industria, the very first edition of this event was organized on November 9th. The enthusiasm of participants and



nominees tells us it was a great success! In front of a mixed audience, composed of students, professors, and alumni, 5 nominees from 4 different research groups, battled for the price of best Master Thesis of the academic year 2021-2022. Different from other thesis awards, the focus of this night was on the social impact and applicability of the designed solution. We are very proud to announce the winner Remco Coppens with his thesis "Learning to improve evolutionary computation for a

Although this was a year of change the saying "never change the winning team" still applies for many of the activities in our portfolio. Therefore, we delighted many of our members by organizing the good old Social Drink again on November 18th. This event was hosted in 't Taphuys in Utrecht, where everybody was able to enjoy some snacks and self-drafted beers of their own choice.

In the first quarter of next year we have our General Assembly planned for February 1st. Come share your ideas on what should and should change in 2023. Furthermore, a Master Drink in PSB The Villa is planned on Thursday March 9th (both for alumni and master students) and TBKx is scheduled for March 29th. Please be sure to subscribe yourself for the events and we hope to welcome you shortly on one of these activities!

On behalf of Alumnia we wish you wonderful holidays and all the best for 2023!

**Tom Koks**  
Chairman Alumnia



# Alumni Speaking

In 'Alumni speaking', each SCOPE two members of alumnia association Alumnia are interviewed. They talk about their careers, current activities and the relationship with their studies.

TEXT Maarten Vermeulen & Cas van Elderen DESIGN Marijn Konings

## Maarten Vermeulen

### What has your career been like so far?

My career started at NedTrain where I developed a mathematical model which scheduled preventive maintenance activities such that life cycle costs are minimized. This model helped me graduate, but it helped me as well to discover that I'm not a full-time coder. After graduation, I joined EY as a supply chain & operations advisor, where I helped multinationals in re-defining their supply chain operating model. This was a time with lots of fun, a steep learning curve and lots of travel. But in the end I wanted to understand the supply chain from inside out, that's why I joined FrieslandCampina, a company with a unique and complex supply chain. Within FrieslandCampina I am currently responsible for the supply chain & network strategy of business group Ingredients, after having had 2 planning functions within the S&OP department.

### What makes you happy in your work?

My main driver at work is the opportunity to make a difference and add value. In my current role I work closely together with technology, logistical and market experts that only see a part of the puzzle. They are experts in their field and have a lot of ideas to improve, but need help to bring their ideas together and prepare for decision

making. That's exactly my playing field and where I hope to add value: translating complex challenges into easy digestible information that is ready for decision making.

### What was the most important moment in your career and why?

As an industrial engineer you're almost designed to think and make decisions in a rational way and in many situations that will work out just fine. But in some situations it is better to listen closely to what your gut-feeling is telling you. My decision to leave EY was such a situation. Giving advice to multiple multinationals, lots of travelling and having fun colleagues, I was living the dream right? Because of this rational image of reality, I had quite a hard time to make the decision to leave EY. In the end I am very happy that I listened to my gut feeling and I haven't looked back since.

### What activities did you do besides your studies? And how has that affected your career?

During my studies I have been part of the Introduction, Gala, Tappers, Crew and Race of the Classics committees and participated in the Industrial Research Project. I enjoyed these committees so much

because we became quite close as a group and it created a cohesive environment where everyone could add value. In essence that is exactly the climate I want to create in my project teams. So I always make sure that the team gets to know each other well up front and make sure we always celebrate successes as a team.

### What subject or skill you wish you would have learned in university and why?

During our studies we learned to search for the optimal solution, but what happens when we have found that optimal solution? How and where do I sell this idea, who are my stakeholders, what drives them and what is important for them to be convinced? These questions are really important to ask yourself and dedicate some time for. In an ideal world, I would have liked to learn these skills in university.

### New question:

Which function/job did you dream of while being a student, and how and why did that change over time?

### Why:

What you found important in the past might differ from what you find important today because of the experiences you gathered.



## Maarten Vermeulen

Age: 30  
Graduation year: 2016  
Role: Supply Chain & Network Manager



**Peter Schram**  
**SCOPE 1,**  
**2023**

Breakthrough Advisory



**Loek Botman**  
**SCOPE 3, 2022**

Senior Data Scientist  
Operations Research at  
Bol.com

## Cas van Elderen

### What has your career been like so far?

After graduating, I started working at ASML as a Business Engineer. For the first four years I had this role in the Netherlands. One year ago, I moved to the US on a long term assignment to build a similar Business Engineering team in our factory in Wilton, Connecticut. My team's goal is to make decision making in the factory more data driven. We do this by building capacity models and data visualizations and providing data-driven advice to our management. A typical OML role, I would say. Although, arguably, the actual main goal of my role is to bring some Brabantse gezelligheid to the US.

### Why did you choose the industry you work in now?

Well, during my studies I repeatedly have said that I never wanted to work at ASML. My assumption was that ASML already had enough smart people working for them and gave relatively simple roles to overqualified university graduates. During my job search, I found out those roles do exist, however there are many more interesting and challenging roles in ASML for Industrial Engineers. I like the fast pace of working in a factory, especially at a company that is impacting the world. Furthermore, it is a growing company in the growing semiconductor industry, which means there are plenty of opportunities to grow and get your



ideas into practice. By the way, more than five years later my friends and family still like to remind me every now and then of me saying I never wanted to work here.

### Where do you get the most energy from during and after your work?

At work, three things: making impact, learning new things, and working with a team. I get energy from the tangible impact of my team on decisions in our factory. The steepness of the learning curve is a key driver for me when I choose what to work on. On working with a team, one of the things I learned in this role is that often the most effective way to get work done or solve a problem is simply putting people together in a room from different departments, who often don't talk to each other that much. Next to that, I found out this year it gives me a lot of energy to be able to build a team from the ground up. After work, as a typical Dutch guy from my age I like riding my road bike. Besides that, reading fiction, business books and biographies and occasionally writing, which helps me to structure my thoughts.

### What is the key thing that you have learned during your studies that you use a lot and appreciate?

The helicopter view (or birds eye view): the ability to elevate yourself over a process or a problem. On study materials, the factory physics book is one of the few study books that comes in really handy at work. The committees I did for Industria also formed me: a full-time board year, organizing multiple events and writing articles and columns for SCOPE!

### What advice would you give current students?

Don't take yourself too seriously and try to enjoy this great phase in your life.

**Old question:** Why did you choose the industry you work in now?

**New question:** Which course would you add to the IE curriculum to setup students for success?

**Why:** Looking back, I think a lot of the courses prepared us as students for a potential career in academics, not so much for working in a big company.



**Cas van Elderen**

Age: 30  
Graduation year: 2016  
Role: Team Lead Business Engineering  
Company: ASML Wilton Factory



**Maarten van Asseldonk**  
**SCOPE 1, 2023**  
Founder of Waves  
Process Intelligence



**Emmy van Schijndel**  
**SCOPE 3, 2022**  
Project Manager at  
DSM Food & Beverages

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