

Ups & Downs



Jako Bos

DPD - The busy
'December Month'

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Piet Verbakel

Daily Ups & Downs
at Jumbo

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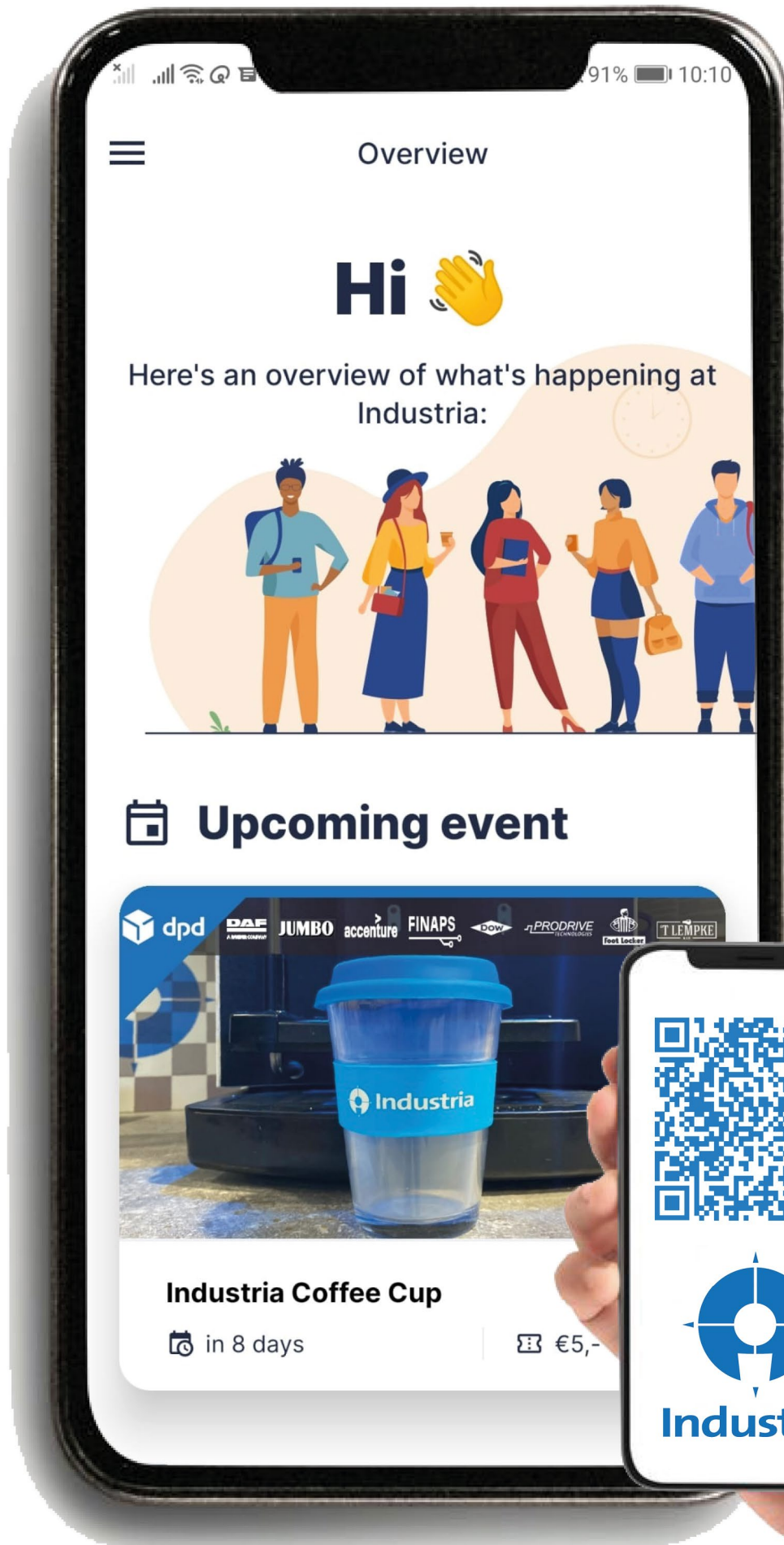


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Colophon

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FOTO De Leeuw Media

The busy December month

Dear reader,

'It is the most wonderful time of the year', 'Last Christmas' and 'Driving home for Christmas', are songs that are now playing on the radio all day. There's something special about Christmas and everyone look forward to these days. And why shouldn't we? All houses are decorated, there are presents under the tree and we can spend the Christmas days with our favorite stepmother.

This edition contains various articles about the 'busy December month'. Sander Roeleven talks about ups-and-downs in the parcel world, Caitlin Riesewijk interviewed Dow about her ambitions and values and Joost van der Haar talks about the daily reality of ups & downs at grocery retailers. Moreover, Sander Roeleven talks about a new series of game changing trucks and Bauke Wijnands speaks about the constantly changes of demand at KLM. Vita Broeken interviewed Bolletje and conducted a kruidnoten test. Lars Geerlings ends the theme with an article about the opportunities for Districon that arise from the supply chain crisis.

In addition, Maiky Geerman interviewed the IE department about the UK's current, and massive truck driver shortage and Sinan Yasarol talks about studying and living in Eindhoven as an international student. Koen Minartz speaks about his extra-curricular activities and three sub-boards of Industria, namely C.I.T.I., Crew and IRP introduces themselves. The Alumnia update, Alumnia speaking and the columns can be found on the last pages.

Let me end with a poem named 'Let every day be Christmas':

"Christmas is forever, not just for one day,
for loving, sharing, giving, are not to put away
like bells and light and tinsel, in some box upon a shelf.
The good you do for other is good you do yourself."

I wish you a Merry Christmas and a Happy New Year!

Caitlin Riesewijk

Chief editor SCOPE

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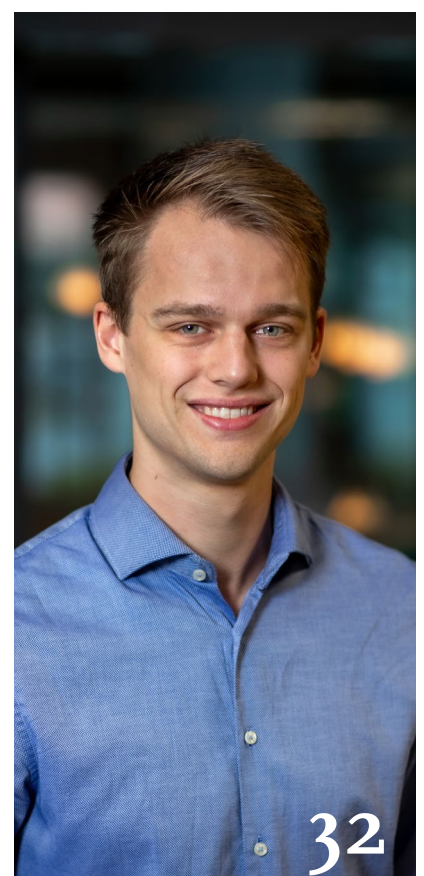
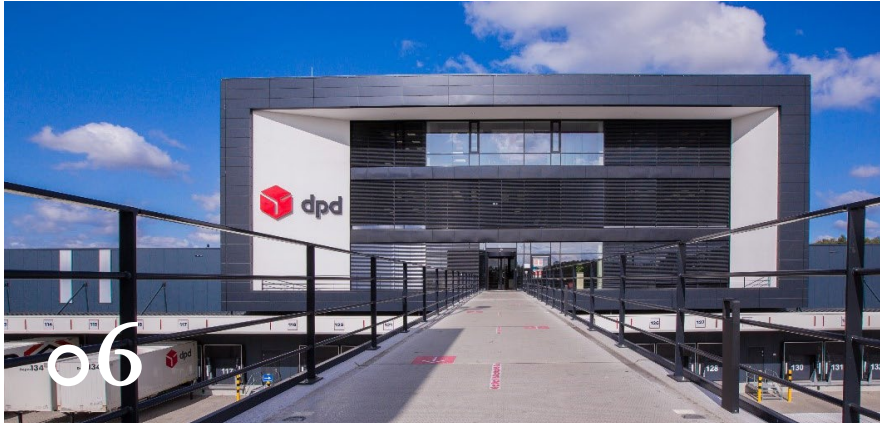
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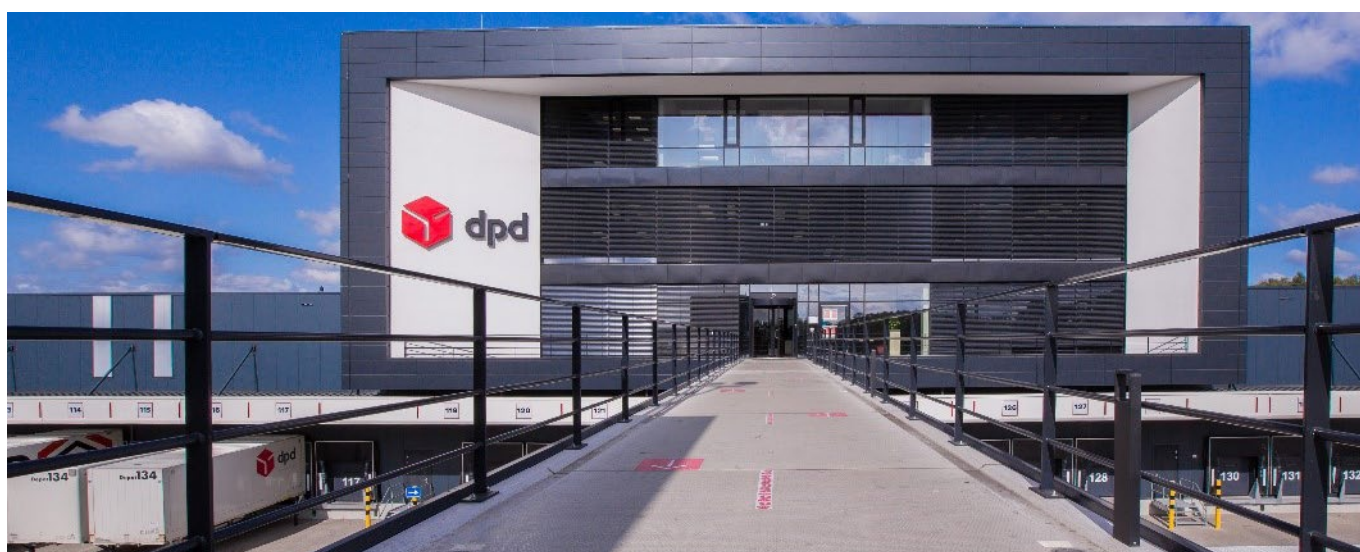
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The busy ‘December Month’ began a couple of weeks ago. To make sure that Santa Claus can deliver all presents on time, orders were placed already. One of the companies which contribute to delivering all parcels on time is Dynamic Parcel Distribution (DPD). How does DPD deal with delivering parcels on time? What about the employee occupation and forecast? Does DPD need to hire additional employees? Do the forecasts need to be adjusted? To answer these questions, SCOPE spoke with Jako Bos, director of intercontinental business, about parcels and employee occupation in the busy ‘December Month’.

TEXT Sander Roeleven **DESIGN** Caitlin Riesewijk



DPD: *Ups-and-downs in the parcel world*

DPD is an international franchise network of parcel carriers. The company has been founded in Germany and was originally called ‘Deutscher Paketdienst’. In the Netherlands, DPD is headquartered in Oirschot. The company transports approximately 1.3 billion parcels worldwide each year and approximately 75000 employees work at DPD. DPD also has some basic principles that are important for them. Jako Bos: “Our company is like several other companies; employees, customers, and planet are important for us. Subsequently, making a profit

in order to continue growing is an essential element as well for DPD”. Forecasting is an important element for DPD in its daily operations. Jako Bos explained how the forecast comes about in a ‘regular’ month: “First of all, we ask the sales department what their prediction is on how many parcels will arrive in the coming period. This prediction is compared with the extrapolation of the historical data. A stable process arises throughout the years, except last year when we had to deal with COVID-19. A big peak in demand arose due to COVID-19. This makes it harder to

properly forecast this year because we are faced with a disruption”.

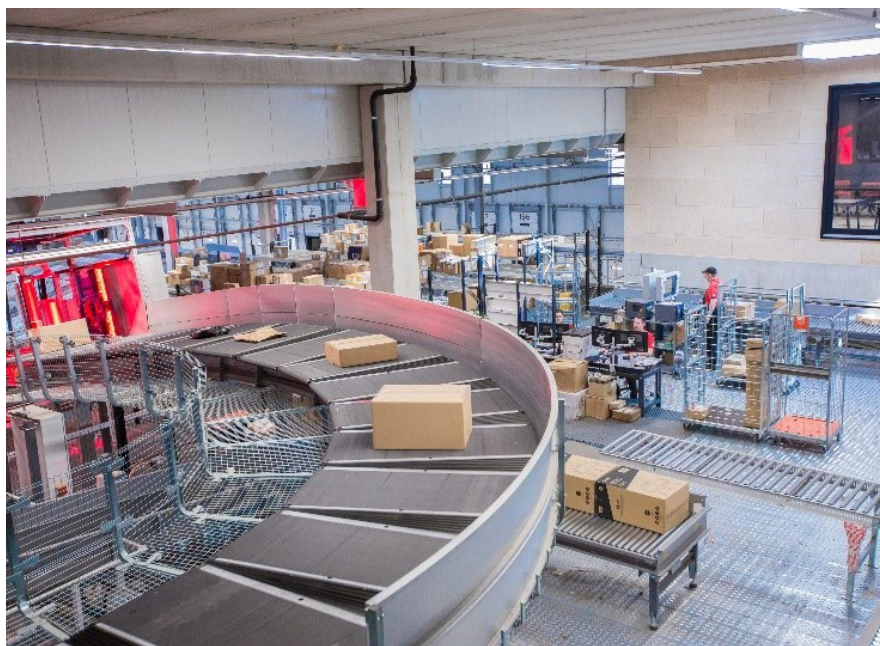
Besides forecasting properly, it is also important to have sufficient employees that can execute the work. How does DPD deal with this? Do they, for example, have many freelancers? Jako Bos explained: “It differs per segment. DPD does not have its own trucks or buses. This will all be outsourced by courier- and transport companies. In the operations, we work with around 30 percent permanent staff and around 70 percent temporary workers. At the

offices, all employees are permanently employed". So, DPD tries to work with a fixed group of employees and ask all relevant partners both in transport and operations to scale up on time.

Ups-and-downs

The theme of this edition of the SCOPE is 'ups-and-downs' in, for example, demand or supply. How does DPD deal with this upcoming busy December? Jako Bos: "In The Netherlands, this is a very complex situation. On the first week of December, you have Black Friday, Cyber Monday, and Saint Nicholas. Moreover, Christmas takes place in December as well. So, this is actually a kind of 'double effect' in terms of busyness." This could mean that the busyness is 'unmanageable'. However, this will not be the case. "There will be a muted peak in the market this year. We asked our customers to order early so they will not be surprised with a late arrival of their order. This is one reason for the muted peak. Subsequently, the peak is leveling off compared to previous years. This has to do with the problems in the global supply such as unavailability of materials and the COVID-19 situation."

December is definitely busier than other months of the year. The forecasts and employee occupation change in relation to a regular month. "These are scaled up considerably during the busy month" Jako Bos said. He continued: "We try to fix this with our current employees and temporary employees. We do not hire employees



only for busy months, like December. Of course, good employees are always desired. Subsequently, we warn our partners when we expect busy periods. In this way, our partners are better prepared. For the transport department, they usually hire additional employees if available."

Traffic on the road

During December, it is busy at all DPD branches, but how does DPD deal with the busy traffic on the road? Which influence does the traffic have on the service level to the customer? "The traffic does not have an enormous influence on the on-time delivery of parcels to the customers" Jako Bos started. "Our distribution system looks at how many parcels need to be transported

and then calculates the time needed to deliver all parcels. The vans drive a relatively short distance on the highway in the morning and at the end of the working day. The rest of the time the drivers are in cities and villages. In the cities and villages, it is much easier to drive an alternative route as there are many more options for the drivers. Of course, it sometimes happens that a parcel arrives a few minutes later than scheduled." The traffic on the road itself does therefore not influence the service level to the customer. A bigger problem is the capacity and time at the hubs. Jako Bos explained: "If there is not enough time available to prepare the parcels, this might lead to a one-day delay in delivering the parcels to the customer".



Jako Bos

DPD Netherlands BV is a DPD Group/La Post entity delivering approx. 100M parcels annually of which the majority is to international destination.

Jako is working at DPD for nearly 25 years and almost since the start of DPD in the Netherlands in 1994. Till mid of this year he was Director Network & Logistics Benelux, developing the international road network from Benelux into Europe and since this year he is responsible as Director International Gateway Rest Of World for developing the global intercontinental network for Benelux included the related export and import processes and compliancy regulations. In 2016 he achieved his Executive Master SCMLogistics grade (EMLog) at Wagner Group.



How to deal with ups-and-downs

No one could have predicted what the consequences were/are of COVID-19 on their company. This also applies to DPD. However, a busy month, like December, is a recurring phenomenon. “The bigger the company, the easier it is to deal with high peaks. This all has to do with the law of large numbers. The process becomes quite stable after several years. For example, DPD had much more trouble dealing with high peaks ten years ago. Nowadays, more appointments are made on how to deal with high peaks.” As told earlier, when the customers order earlier, it promotes the process of on-time delivery to the customer. “Definitely, this helps to better deal with ups-and-downs in demand!”

Future

To continue growing as a company, you have to improve your business processes continuously. DPD is also searching for improvements to keep existing in the future. Currently, DPD is figuring out how to work with an international forecast. “At this moment, The Netherlands has their own forecast, Belgium has their own forecast etcetera. If there is a country that suddenly has a high peak, this is then not included

in the forecast, the average trend is actually continued.” DPD wants to introduce the so-called International Community Forecast (ICF) tool. Jako Bos explained: “When the forecasts of each country are put together, each country can then plan and coordinate better since you know the number of parcels from other countries. Information exchange is very crucial for your own forecast. Subsequently, by communicating frequently, your forecast becomes more accurate.” So, having all forecasts together can improve an individual forecast.

Another part DPD will focus on in the near future is shop delivery: delivering the parcels to a shop. “When customers indicate that they are not at home at the time their parcels arrive, DPD can deliver the parcels to the nearest shop. If, for example, the

driver has to drive to one shop instead of four houses, this will increase the capacity significantly. However, good agreements have to be made with the shops since one shop is fine with receiving many parcels and the other wants a maximum number of parcels in its shop.” It is therefore not as easy as it looks: multiple parties are involved and appointments have to be made. In short, DPD has become bigger and bigger over the years. This makes it easier for them to deal with ups-and-downs. However, COVID-19 made it harder to deal with high peaks as this was unexpected. Especially the forecast has become challenging since it cannot be predicted whether such a situation will occur again. Subsequently, DPD is always improving and seeking new challenges!

*“The bigger the company,
the easier it is to deal with
high peaks.”*

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For a bright SAP future

On the 8th of November, Caitlin Riesewijk and Iris Borst visited the Dow Master Thesis Award 2021 of the Operations Management Logistics (OML) master's program. After this ceremony, Caitlin interviewed Nancy Guterrez and Jens Witlox, who are both employed at Dow. They talked extensively and enthusiastic about the ambition and values of the company and their new way of working.

TEXT & DESIGN Caitlin Riesewijk



Dow's ambition & values:

Innovative, customer-centric, inclusive, sustainable

Dow, an American company, is one of the three largest chemical producers in the world. Dow's business portfolio of plastics, industrial intermediates and coatings and silicones provides a broad range of differentiated, science-based products and solutions to its customers in high-growth market segments, such as packaging, infrastructure, mobility and consumer care. Dow has 106 production sites in 31 countries and employs approximately 35,700 people globally.

Dow's ambition is to become the most innovative, customer-centric, inclusive, and sustainable materials science company in the world. The beating heart of Dow Benelux is in

Terneuzen, which include 16 factories and approximately four thousand employees. As the largest employer in Zeelandic Flanders, Dow contributes to the region's economic and societal success by supporting many initiatives and events. Jens Witlox and Nancy Gutierrez are both employed at Dow Benelux. Nancy Gutierrez is the Customer Service Director for Europe, Middle East, Africa, and India. In her role, she provides different level of operational and strategic support to the business and function. Jens Witlox is Supply Chain Manager at the business unit 'Consumer Solutions', which is mainly focused on the production of silicones. When people think about artificial intelligence, the main focus

is towards B2C organizations. Think about the automated chat robot that answers your basic banking questions or the Netflix AI that provided you with your favorite movie yesterday evening. However, the B2B field has much to gain from AI as well and is increasingly using it.

Sustainability

Nancy Gutierrez is enthusiastic about Dow's ambitions on Sustainability: As part of our action plan to put us on path to Net Zero by 2050, we are committed to implementing and advancing technologies to manufacture our products using less resources, besides increasing energy efficiency of our operations, processes and

“With this training, the emphasis is on the feeling that everyone is welcome. Dow has really an open-door policy.”

procurement of renewable energy. We know that science and external collaborations can help solve the challenges we have outlined and that is where we are focusing our efforts. The EU Green Deal will be our compass: an ambitious set of strategies, set by the European Union, to address the climate crisis and this is how we have embedded them across Europe. Nancy continues: ‘Dow wants to become CO₂ neutral in 2050 by providing science-based solutions for safe and sustainable materials that deliver essential societal benefits as well as outstanding environmental performance. Achieving these goals will take significant innovation and investment. But we must succeed. Not only do our customers, partners and society demand it; we demand it of ourselves. All of our employees are global citizens and understand the urgency required.’

Diversity and inclusion

Another important factor for Dow is diversity. Nancy explained: ‘Diversity

has always been there. However, we made a very big impact on it with the centralization of the services three years ago.’ In Terneuzen Diversity & Inclusion is at the heart of everything we do. At our flagship ‘Google Style Office’ we have over 50 different nationalities representing different genders, race, religion, sexual orientation, age, culture. To enhance the awareness of diversity and the sense of inclusion, Dow organizes Cultural Agility sessions for their employees. ‘With this training, the emphasis is on the feeling that everyone is welcome. Dow has really open-door policy.’

New way of working

Like for all companies, the COVID-19 crisis influenced the dynamics of the company in the way they operate. Jens explained: ‘Where other companies started to decentralize, we did it the other way around; In 2018, Dow created a large office, where all service-

roles across Europe were centered to one location. One year later, the corona crisis started, and we all needed to work from home.’ Nancy reacted on this by saying that the flexibility to employees increased a lot. ‘The degree of flexibility would never have been this high without the pandemic.’ Nowadays, Dow makes use of ‘Design your day’, where employees can decide for themselves what is the best place to work. With the sessions on diversity and inclusion, Dow’s goal is to keep the employees together, even when working from home.

Nancy and Jens both agree: ‘We are at a crossroads. Yesterday’s – or even today’s thinking is not good enough. Whether it is about sustainability or the way employees want to work in the future, only the most open, forward-thinking companies will be able to respond and will create a future for themselves and future generations. We are one of them’.



Dow's Master Thesis Award

For nine years, Dow organized the Master Thesis Award together with the Operations Management & Logistics (OML) master's program. The winner receives a cheque of €1000, free to spend. All OML students who obtain a 9 or higher for their master thesis can participate, regardless of the topic of the thesis and where it was conducted. The theses are judged by a jury consisting of experts from OML and Dow. Through this collaboration with the TU/e, Dow hopes to get in touch early with students who may be interested in working at Dow. Over the last few years, Dow invested in well-educated people who contribute to the growth of the organization. Through branding, the employees of Dow hope that students remember what the company is about and what they do and eventually consider joining the Dow team. This yearly award is usually reported in the December edition of the SCOPE. This time, following delays and constraints because of Corona, there will be attention for both winners of 2020 and 2021.

Master Thesis Award 2020

On 29th of May, 2021, Lotte Vugs received the Dow Chemical Best OML Master Thesis Award 2020. The award is usually handed over by a representative of Dow at the Diploma Ceremony in Fall. However, due to Corona, the award was handed over at the Drive through Diploma Ceremony in Atlas, by the jury chair.

The jury consisted of Aram de Ruiter and Jeffrey Tazelaar from Dow Chemical, and Remco Dijkman and Tugce Martagan from Eindhoven University of Technology. Marco Slikker served as non-voting jury chair. The jury judged the theses on their academic contribution and industrial impact. The students that graduated in the past academic year and received at least a grade of 9 for their theses have been nominated for the award. 17 students satisfied this criterium, 7 of which were females. The jury concluded that all these 17 theses were of outstanding quality and well reflected the objectives of the Operations Management & Logistics program, i.e., to use formal models to analyze, improve, and redesign operational processes. Finding the right balance between academic impact and industrial application is always difficult, but the jury commends all candidates with finding this balance in an excellent way.

The thesis of Lotte, entitled "Process Mining for Semi-Structured Log Entries" is highly innovative. Where process mining based on structured event logs is a well-studied subject,

process mining based on semi-structured event logs is not studied to the best of our knowledge. The challenge in semi-structured event logs is that tasks are described in natural language rather than by pre-defined task labels, which makes it hard to determine which descriptions represent the same tasks. The thesis provides a strong academic contribution to this area by providing a conceptual model for process mining on semi-structured event logs, defining natural language processing techniques for identifying tasks according to this model, and creating an innovative combination of process mining and natural language processing to finally mine

processes. A scientific paper based on the thesis is in progress.

The thesis explores an application considered to be very relevant in today's industry as well. Frequently, process mining is done with the data in systems, both the data in process systems as well as ERP systems. Process mining is used for better understanding and thus improving business processes. This thesis works out the development of a system to extract information from semi-structured event logs and in that way complements the structured data already available in the systems. The work is innovative and describes actual results. Finally, the thesis is well written.



Master Thesis Award 2021

On 8th of November 2021, Martijn Beeks received the Dow Inc. Best OML Master Thesis Award 2021. This year, the award was handed over by Nancy Gutierrez (Regional Customer Service Director), representative of Dow Inc. at the Diploma Ceremony 2021.

The jury consisted of Aram de Ruiter, Bao Lin, and Christian Hubbs from Dow Inc., and Laura Genga and Tugce Martagan from Eindhoven University of Technology. Marco Slikker served as non-voting jury chair. The jury judged the theses on their academic contribution and industrial impact. The students that graduated in the past academic year and received at least a grade of 9 for their theses have been nominated for the award. 14 students satisfied this criterium. The jury concluded that all these 14 theses were of outstanding quality. They were happy to see that the high quality of Master Theses was maintained throughout the pandemic conditions, as well as the responsiveness of the university to include topics like supply chain disruption (for example because of a pandemic) and sustainability.

In the thesis, titled “Deep reinforcement learning for solving a multi-objective online order batching problem”, Martijn adopts a



deep reinforcement learning and Bayesian optimization approach to study a complex order batching and sequencing problem at Vanderlande. The model and the analysis are thorough and rigorous, and the work provides new insights for multi-objective online order batching problems. The quality of the experimental setup and the report are impressive.

Two main differentiators are the use of deep reinforcement learning (DRL) and the accommodation for an objective function that is not the same all the time. To start with that last concept, the thesis evaluates

service, being on time, and cost in one objective function and recognizes that this is not a stable aim over time. This matches with the reality in industry and in for example Dow's Supply Chain at multiple levels. It also takes on a timely approach as it illustrates that Deep reinforcement learning (DRL) can rightfully be acknowledged by companies like Dow Inc. as a potential solution to large-scale decision problems with significant uncertainty. Further research and efforts in this space are encouraged.



Nancy Gutierrez

Nancy holds a degree in Int. Economics and Management from Bocconi University (Milan, Italy), and an MBA from Tias Nimbas Business School (Tilburg, The Netherlands). She started her professional career in a consumer goods company in Italy (2006). In 2011 she joined Dow Benelux with a role in Supply Chain; since then, she had several roles in customer service, marketing and sales across businesses and regions. Throughout her career she has held different roles leading regional and global strategy. She has recently led European customer service through one of Dow global transformation with the creation of the service Hubs and she is currently globally leading business customer service leveraging best practices and supporting implementations of new tools and technologies on the road to digitalization.

Jens Witlox

Jens is an alumnus of the TU/e, where he completed his Bachelor Industrial Engineering in 2015 and Master Innovation Management in 2017. Right after graduating, he started his professional career with Dow as a supply chain scheduling specialist within the silicones part of the company – Dow Consumer solutions. After executing various scheduling and planning roles, he became the Regional supply chain planner. Starting 2021 he was promoted to Supply chain planning manager to lead a team of supply chain planning professionals.



While some industries only encounter ups & downs periodically, they are a daily reality for grocery retailers. To find out what this means in practice, SCOPE spoke with Piet Verbakel, manager Forecasting & Replenishment at Jumbo.

TEXT Joost van der Haar DESIGN Caitlin Riesewijk

From forecast chart to shopping cart



“Everything begins with the customer at Jumbo”, Piet explains, “and the customer wants their products to have high availability, to be as fresh as possible and to be as cheap as possible”. Ultimately, providing the best possible customer experience is the goal. Yet this is not as straightforward as it might sound, as Piet elaborates: “Supermarkets operate in an environment that is both very dynamic and very complex. On the one hand, you are in direct contact with the consumer. On the other hand, Jumbo has tens of thousands of products and hundreds of stores. Consequently, there are millions of product-store combinations which all have their own patterns and trends.”

Ups & Downs

These patterns and trends can take many different forms and shapes. There are of course seasonal influences such as people’s tendency to buy special food for the holidays. However, there are also influences of a more temporary nature. Roadworks can cause a supermarket to become less accessible, fairs can attract new

customers and a new competitor can lead to the loss of existing customers. One pattern that Piet finds particularly interesting is the influence of weather: “Easter is for example very different when it is 16° and cloudy than when it is 26° with clear blue skies. This is the difference between gourmet and barbecue for dinner”. Furthermore, Piet notes that the relation between weather and demand differs between products: “While demand for water always tends to increase when the temperature increases, we see that demand for beer behaves differently. It only increases up to a certain temperature and remains stable, or even decreases, if the temperature goes beyond that level.”

As demand for certain products is strongly correlated to weather, changes in weather predictions at the last moment can have a big impact on Jumbo and its supply chains. The expected demand for certain products can see a big increase, while at the same time the expected demand for certain other products can see a

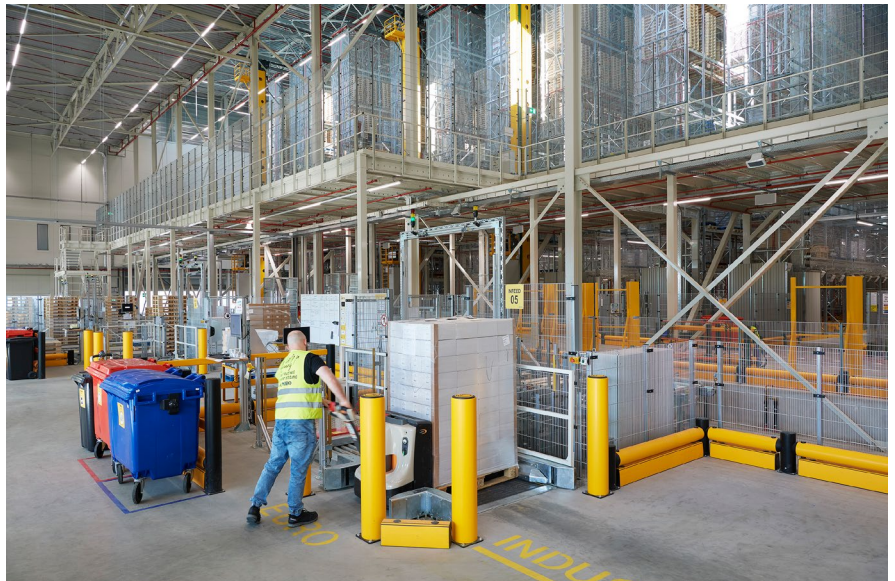
big decrease. “We only tend to eat stamppot if it’s cold outside”, Piet clarifies. When a change in weather predictions occurs, it is therefore important to react by intervening where possible. This can however be challenging, as Piet explains: “In the end, you are dependent on the many links in the supply chain. Some of these are outside the control of Jumbo, such as harvests, factories and producers.”

One factor that is within Jumbo’s control is its pricing strategy. Jumbo believes in Every Day Low Pricing (EDLP), so that customers can always rely on getting the lowest price for their products. This means that Jumbo does not do a lot of short-term promotions that last for only a week. It instead has the lowest price guarantee and longer-lasting promotions that last for several weeks. With this approach, the impact of volatility on the supply chain is decreased when compared to a high/low strategy. Nevertheless, demand volatility will always exist and there are still many cases where interventions provide value.

Forecasting & replenishment

The people who coordinate these interventions are the people from the aptly named Forecasting & Replenishment department. They are responsible for managing the end-to-end supply chain, from the supplier to the customer. It is their job to make sure that the right number of products end up at the right place at the right time, which they do in close cooperation with suppliers, E-fulfilment centers, distribution centers and supermarkets. To achieve this objective, the department is split into five teams, each of which is responsible for a part of Jumbo's assortment. In turn, each of these teams consists of one supply chain manager, several forecasters, several flow managers and several replenishers. Many of them have a background in industrial engineering, which Piet notes is a very good fit.

Considering the sheer number of product-store combinations, it is not surprising that a big part of the teams' work is supported by ERP systems and forecast engines. According to Piet, this forecast engine is "really good at predicting demand using historic data." There are however factors that the forecast engines simply cannot (yet) take into account, such as changing patterns in buying behavior due to non-historic impacts. This is where the Forecasting & Replenishment department comes in, as they 'enrich' these forecasts with information from outside the forecast engine's scope. But with each passing year, the quality of the forecast engine increases. The better the forecast engine becomes, the less the Forecasting & Replenishment teams



need to perform simple low-quality interventions and the more they can focus on high-quality interventions instead.

New opportunities

Piet sees many opportunities to further improve upon the current forecast models using machine learning and A.I. He believes that these types of models could achieve a significantly higher forecasting accuracy, as they are able to incorporate more relevant data and in a smarter way. This could have a profound impact, especially for a company the size of Jumbo. A few percent more product availability and a few percent less products perishing before sale could lead to many millions in additional revenue and cost savings respectively. Moreover, reducing food waste contributes to sustainability, which is a very important goal for Jumbo. Lastly, having better and more complete forecast models means that store employees have to spend less

time enriching forecasts, and can spend more time providing quality service to customers.

In the end, that is the core of what Jumbo seeks to do. As Piet stated: "Everything starts with the customer at Jumbo". Using its increasingly accurate forecasts, Jumbo is able to serve its customers better and better. With these forecasts, Jumbo will be able to increase the availability and freshness of its products, while simultaneously decreasing their costs. All to provide the best customer experience possible.

To realize these goals, Jumbo is always looking for talented and passionate young graduates. Interested readers are therefore invited to look at www.jobs.jumbo.com.



Piet Verbakel

After his studies in Policy and Organizational Sciences and Supply Chain Management at Tilburg University, Piet Verbakel started his career at Campina in 2002 in supply chain planning. This was followed by a few years in international supply chain management at various multinationals starting in 2010. When he found himself looking for a new challenge, Jumbo had caught his attention with their "daring formula" and their Brabantian roots. He joined Jumbo in 2018 and has been the manager Forecasting & Replenishment ever since.

DAF Trucks N.V. has just unveiled its largest and most innovative project in its 90-year history: a new series of game-changing trucks for long-distance transport. The New Generation XF, XG, and XG+ set a new industry benchmark in efficiency, safety, and driver comfort and will enter production in October. SCOPE talked about these new models together with Bart van Lotringen, Design Director, and Jos Smetsers, Executive Director PACCAR Purchasing Europe and member of the Board of Management of DAF Trucks N.V.

TEXT Sander Roeleven **DESIGN** Stefano Dimastropasqua



SCOPE visits DAF Trucks N.V.

We all know: climate change affects everyone. More and more people are becoming aware of its consequences and therefore want to contribute to a better future. Nowadays, more passenger cars are electric and to an increasing extent, electricity is generated out of cleaner sources. DAF aims to contribute to a sustainable future as well. In addition, the European Union has tasked the truck industry to reduce truck CO₂ emissions by no less than 15% by 2025, compared to the 2019 values. Another reason for DAF to develop a new generation of trucks: the new vehicle masses and dimensions regulations, allowing longer truck combinations

on the European roads. “Because the development of a full new generation of trucks has taken between six to seven years it was important to start on time”, said Bart van Lotringen. “We started from scratch. With a clean sheet of paper.”

Attract drivers with the best truck on the market

Although updates were applied and innovations have been added on a regular basis over time, the basis of the existing model dates from 1995. That gives an indication of the life span of a truck model. However, with the New Generation DAF, the Eindhoven

based truck manufacturer starts a new era in road transportation. This is the largest innovation project in DAF’s 90-year history, according to Eindhovens Dagblad. The series consists of three new models (XF, XG, and XG+). The XF is the successor of the current XF. The XG and XG+ are the superlatives and even introduce a top market segment that did not exist on the market so far. These flagship models represent a new benchmark in driver comfort which has always been one of the key focus areas for DAF. Given the huge driver shortages all over Europe, a transport operator can attract drivers with the most comfortable trucks on the market.



Jos Smetzers

After graduating as an Industrial Engineer, Jos Smetzers quickly ended up at DAF. From the start - he started there in 1982 - Jos has continued to work with students and professors from the university. "To make use of each other's expertise, but certainly also to show that as a high-tech company, DAF offers plenty of opportunities and challenges for TU students". Jos started at DAF as an information analyst, after which he held various management positions, including within production and purchasing. Since 2007 he has been Director PACCAR Purchasing Europe, in other words responsible for purchasing. He is also a member of the Board of Directors. "DAF offers great opportunities to develop yourself. Personally, I have always loved that about working for this company."

Setting new standards

The development and launch of its New Generation trucks represent the largest investment project DAF ever completed and exceeds over one billion euros. The aim was to set a new standard in emissions and efficiency, in safety and driver comfort, fully in line with the objectives of the new Masses & Dimensions regulations introduced by the European Commission. These allow an extension of both the front and the rear end of a truck combination, as long as the loading length is not affected and vehicles can operate within the existing road infrastructure. "By introducing an elongated front as well rear-end of the cab we could really push boundaries in all of the main areas in which we wanted to set a new standard", explained Bart van Lotringen. "Thanks to low window belt lines and the introduction of a kerb view window at co-driver's side, we make a huge step forward in direct vision, for example. As illustrated by the London Direct Vision Standard, modern trucks are even rated on this aspect. In the future, a certain number of stars will be needed to be granted access to the inner city of the UK capital. So we took this into account when developing our New Generation DAF trucks."

Early involvement of customers and drivers

Among the cornerstones of the new European Masses & Dimensions regulations is lowering emissions and increasing efficiency in the first place. "We are introducing new drivelines with automated transmissions as standard,

we have looked into every opportunity to save weight and also new Advanced Driver Assistant Systems help us to significantly reduce emission and increase efficiency", continued Van Lotringen. "Optimal aerodynamics is the largest contributor to the new standard we are introducing in this respect. The new trucks have no less than 19% lower air drag compared to the current vehicles. Thanks to the tapered design of the cab, the rounded windscreen, and the seals that are applied everywhere. This results in no less than 6.3% of the total 10% fuel efficiency gain and comparable CO₂ emission reductions. That includes the application of digital

cameras instead of traditional mirrors as well. We have organized many customer councils to exactly know how new technologies and designs would be welcomed by the market. Never before, we have involved customers and drivers so early in the development and design process."

Passionate about Quality

DAF is driven by continuous improvement. Within Operations, many new and innovative methodologies and technologies were implemented for the new generation trucks, and even two completely new cab factories were realized in Westerlo, Belgium,



being the most modern of their kind in the world. And throughout the company, use is made of Six Sigma, providing a set of techniques and tools for process management. Jos Smetsers pointed out: 'If Six Sigma is applied, tasks have to be executed in a fixed, predetermined and first and foremost structured manner. In this way, it will become clear where further improvements can be made. Six Sigma also plays an important role when selecting our suppliers, from whom we expect world-class quality. We are passionate about quality'.

"A couple of years ago, DAF required from its suppliers a maximum of 50 defects per million (ppm)", explained Jos Smetsers. "That gave a lot of resistance regarding the feasibility. Nowadays, with the help of Six Sigma, the norm is at only 10 defects per million. Each year, the number of defects per million has to improve by 25 to 30%. Indeed, we put the bar even higher every time. In the end, suppliers also benefit from this approach since they are forced to improve on a constant basis." A question: is it for students of great added value to obtain a Lean Six Sigma certificate? Smetsers answered: "I would definitely recommend! It is a different way of thinking which is beneficial for every company you start working for in future."

Industrial Engineering students are expected to deal with the entire



supply chain. What are the latest developments at DAF? "We work with suppliers that have a strong financial position in the market", Jos Smetsers commented. "This means that you have to end a collaboration now and then. In addition, global sourcing has become more important. That has to do with price positioning, the economy of scale, or the need to select the most trustworthy party you can find. COVID-19 has clearly shown the importance of the latter. In the past, we regularly visited our partners in countries all over the world. Now there are travel restrictions all over the world, we have to trust and build on the capabilities of our suppliers."

On the road to an even cleaner future

As we started this article with climate change, what do the interviewees expect will happen in the future? Will trucks drive on electricity of hydrogen, for example? Van Lotringen answered: "DAF is exploring many routes on the road to an even cleaner future: electric, hybrid, hydrogen and don't eliminate the potential of the combustion engine which could run on new generations of fuel, for instance. To our opinion, we will need all options in the future, all of them with dedicated benefits for dedicated transport applications. The New Generation DAF trucks are fully prepared for all options."



Bart van Lotringen

After completing a master's degree in Industrial Design at TU Delft in 1987, Bart continued his education at the famous Royal College of Art in London. A course that specifically prepares designers for the task of automotive designer. After graduating, he started his career as a designer at Volvo Cars, drawing both interiors and exteriors at Volvo's various design studios in Helmond, Gothenburg and California. In 2000 he joined DAF Trucks, where he has been leading the DAF Design Center since 2002, which determines the design of all DAF trucks.

"What drives me in my work at DAF is to create an attractive product with emotion. I love developing innovative ideas with my team that sustainably improve the driver's daily life. A truck is a very versatile product that you never tire of. The attractive thing about



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Think about the following unimaginable situation: a small virus takes over your country and the government closes its borders almost completely. Safety requirements during a flight are heavily changed, the date of the reopening of the borders can be guessed by throwing darts and you are leading the pricing and revenue management department of KLM. How would you formulate your strategy to tackle this challenge? Maarten van der Lei will show us how this works at KLM!

TEXT Bauke Wijnands **DESIGN** Stefano Dimastrapasqua



The flight of a ticket price

The team

Having more than 20 years of working experience at KLM, Maarten has seen a lot of operational processes within the airline. He started as an operations research analyst, after which he joined the network planning department being busy with margin optimization. Here he was busy with questions like: where to place your assets, which destinations will we fly to, with which frequency? Hereafter, he joined the operations division, being responsible for the planning of the cabin crew. With his background as mathematical researcher, this could be typically seen as an assignment problem. However,

union dynamics also became an important topic within this role, since employee planning deals with finding balance between work and private life. The next step in his career was in the commercial direction, being responsible for building a new (current) revenue management system. After having had various business related roles, Maarten is now leading the complete pricing and revenue team, having teams in Amsterdam and Paris.

Aircraft seats as a perishable product

Within the pricing and revenue department of KLM, you have to deal with fluctuations of demand. Is that

a scaring fact? No, it's not. The most important challenge as airline is that coping with these fluctuations requires another method than for example an ice-skates salesman's method. That salesman can have extra skates in inventory in order to be sure that he'll deal with the demand. Thinking about that analogy, an airline can't 'produce' extra pilots or aircrafts for the short term. That forces KLM to find other ways to cope with fluctuations, by identifying the characteristics of the demand. For example, seasonality plays an important role. During the summer and the turn of the year leisure demand increases, while business travel shows

patterns on the week period. Another example: if a business man prefers to spend the weekend together with his family, he won't travel on a Saturday or Sunday.

Advantage for KLM is that demand of flights is price elastic to a large extent. That characteristic is being played with and causes fluctuating prices, while keeping the goal of matching demand fluctuations with the fixed capacity of resources while optimizing revenue per unit in mind.

How does KLM put things in work to achieve this goal? From a pricing perspective, the products and segmentation within the market are being defined. Consequently, the revenue management responsible makes these products dynamically available to the public and sets prices for these products in order to maximize revenues. Since an aircraft seat is a perishable product for which the market is opened for typically a year, questions like "must we accept this tariff for this seat" are important within the revenue management department. In case a flight from Amsterdam to New York having 100 seats will depart in 365 days, it will be sold out in a second if the price is 1 euro, whereas it will be empty at a price of 10.000. Then you are wasting your supply.

When zooming in on the segmentation part, several types of demand with each its own characteristics can be identified. For example, leisure demand is generally flexible in terms of timing and the most



influencing factor is price. In case there is less demand on specific days during the week, KLM can make flights on these days more attractive in order to fill all seats. Looking at business travellers on the contrary, timing of the flight is very important, stays are typically short and willingness to pay is higher. Next to that, demand is less price elastic. Thus, from customer facing perspective it is important to have enough seats available for business travellers buying their tickets lately since KLM strives for serving this demand segment completely.

Simulating demand

Since demand covers multiple market segments and is changing continuously over time, flight prices are determined by millions of data points gathered continuously. KLM strongly believes in using simulation models as support for

decision making. Therefore, in 2014 an in house system has been implemented that gathers all information required to set prices for the flights, the project being led by Maarten himself. Advantage for having this system in house is the ability to keep investing in the system easily, not being dependent on a third party. For example, during the COVID-19 crisis it has been extremely useful to adjust the system to the changed environment KLM operates in. Having the philosophy of using computing power of a system as much as possible, the user interface should provide analysts the ability to make adjustments to the system. Indeed, the system can't know everything.. When China closed its borders early 2020, the expected demand from Chinese travellers based on historical data was not equal to the actual numbers as you can imagine.



Student time of Maarten

Maarten studied mathematics in Amsterdam where theory was applied in the field of theoretical physics, quite abstract as you can imagine. Hereafter, he did his post-doctoral in Eindhoven, focusing on mathematics in Industry. The aspects about his time in Eindhoven he liked were the focus on applying theory in practice, hands-on dynamics and group work. Skills as programming, presenting, organizing and working together in a team are skills he learned in Eindhoven that he wouldn't want to have missed. One is able to learn those skills in a working environment. However, you are lucky if you can do that within a study environment.

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the borders of the US in November 2021 was an interesting happening too. Newspapers announcing an expected opening of the borders around November 1 affects the demand heavily. After announcements of opening the borders one week later instead, another extreme shift in demand takes place. The system doesn't always detect these shifts as quickly as desired. In case one would like to let the system do the work, the importance (weight) of the factor booking searches on the internet could be increased in order to be able to adapt more quickly. When taking a more manual approach, one could reserve some more safe cards so that not all flights are already full immediately after the announcement.

Value-based pricing

When zooming in on the revenue management side, KLM applies the principle of value based pricing. This method requires to look carefully at your competitors. Value is determined by components as the type of the seat, leg space, catering product, cabin personnel and communication. While trying to position with a winning price value proposition, KLM has to look at the value proposition of for example Ryanair. Maarten explains a comparison: "Do they offer the same value? Then we don't need to ask for higher prices. We need to offer more for a higher price or we offer less and ask a lower price". Airlines can also differentiate on the frequency level of flights in order to influence product value. Business travellers appreciate the opportunity of departing in the morning and traveling back in the evening. On the contrary, leisure travellers wouldn't mind about having 2 flights per day. They want specifically flights on for example Thursday and Sunday so they can spend a large weekend on a Holiday.

Brand image also plays an important role. This brand image differs per country by the way. In the Netherlands, KLM is seen as the home carrier, whereas foreign countries see KLM as a challenger. That creates another price perception by the customer.

Following Maarten it is extremely important to find a balance between stability and the ability to adapt. In case the system constantly reacts heavily to detected trends, analysts will not understand the outcomes. However, looking at the China example it is on the other hand important to detect trends and adapt adequately. These trends can be detected based on hard data such as actual bookings. Besides, also weak signals can be taken into account. Examples are search behaviour on internet and vaccination rates. Whereas an increasing number of organizations is simply putting a lot of data in a large complex network and seeing what forecasts come out of it, KLM rather prefers a more classical model. "We want to understand and be able to explain the outcomes." The price analysts are constantly monitoring the performance of the system and asking themselves the questions "am I confident with the outcomes and do I want to adjust the parameters?"

Comparable to the China example, the United States closed their borders for

foreigners. People from India or Europe couldn't travel to the US directly. As a result, completely new travel patterns emerge: people from India traveling via Amsterdam to Mexico, so that they can travel to the US after only 14 days of quarantine. That has a significant impact on the price of a flight from Amsterdam to Mexico.

However, not only the demand side affects the price. The supply side also plays an important role. By analysing the number of COVID-19 related restrictions in a region and determining whether there is over- or under supply of transportation, KLM can choose its strategy to optimize profits. In the China example, there was a significant drop of passage flights due to restrictions when flying towards China. Since passage flights often carry cargo, supply of cargo decreased heavily too. Therefore, due to the constant or even increased demand for cargo travel, price pressure for cargo tariffs increased.

Back to the system's ability to adapt to trends, for which the opening of

Maarten adds: “in the Netherlands we don’t realize how special it is to have such a large airline in such a small country. We can travel directly to all over the world, that is bizarre!”

How does KLM know actually how customers perceive the value, since that determines the value proposition? Well, that’s part of continuous performance management. Looking at a particular route, one can follow the market share of KLM on that route for example. Aggressive positioning can be a method to gain market share, one can also focus more on income per unit. Together with the team discussions take place once in a few weeks, about whether they are content with the performance.

$n * (n - 1) / 2$

Performance management won’t face ad hoc problems in a stable situation rapidly. COVID-19 however has of course caused challenges for KLM’s management. Moreover, sustainability is also an important topic within the organization, having influence on the price and revenue of the firm too. Following Maarten, KLM sees sustainability as “our license to grow and our license to operate. We have to be part of the solution”. He distinguishes 2 mechanisms that try to tackle the problem. Firstly, offset mechanisms are for example offering the traveller the opportunity to include carbon dioxide emission

compensation in the price of the flight. However, he doesn’t see this mechanism as the actual solution for the problem. He prefers to focus on solutions that actually solve the problem structurally and KLM wants to be frontrunner here. Solutions could for example be replacing kerosene by so-called sustainable aviation fuel (SAF). The challenges here are the availability and the price setting. The more SAF will be produced, the lower the price and the more attractive the product. When comparing air travel to car travel, electric driving is increasing in popularity. Why would air travel not be able to follow that route?

The discussion about taking the train instead of the airplane because of sustainability reasons is known. However, Maarten thinks that when compared to traveling by train, air travel is a superefficient alternative. “As TU/e’s own Carlo van de Weijer* has put forward as well: The infrastructure required to connect n cities requires just n airports, but $n * (n - 1) / 2$ rail connections. The network factor of $n * (n - 1) / 2$ makes it much more efficient and sustainable to create airports, than creating that infrastructure for train travel. Also for creating that infrastructure a lot of environmental issues have to be dealt with.” He adds that he doesn’t want to downplay the climate problem at all, on the contrary, but he thinks that we should focus on speeding up

Looking for talent!

The Pricing and Revenue Management team of KLM is always looking for new talent. If you are interested in investigating whether a career at KLM is something for you, contact Maarten van der Lei via LinkedIn, to explore together a challenging position at PRM or another interesting department.

the required innovation that will help solve the problem.

Conclusion

KLM operates in an interesting era. Expectations for the future primarily direct to constant growth and there is confidence in a good future of the firm. We’ve learned a lot about how KLM’s environment constantly changes and influences the characteristics of demand and therefore ticket prices. Now it’s up to KLM to deal with the upcoming challenges!

* Carlo van de Weijer, General Manager of the Eindhoven AI Systems Institute at Eindhoven University of Technology (TU/e)

“in the Netherlands we don’t realize how special it is to have such a large airline in such a small country. We can travel directly to all over the world, that is bizarre!”

Seasonal food is important in many different cultures, in China they have moon cakes for the annual moon festival, in the United Kingdom they eat mince pies for Christmas, and in the Netherlands we have kruidnoten* and Christmas cookies to satisfy our sweet tooth during the holiday. During our 2021 kruidnoten test, we found that Bolletje both offered the nr. 1 and the nr. 2 flavor. To discover how they do it, we had a lovely interview with Iris Kleinherenbrink, product manager for the holiday sweets at Bolletje. So grab yourself a big cup of hot chocolate and some of the kruidnoten, and get to know the lady and the company behind the fantastic holiday sweets.

TEXT Vita Broeken DESIGN Caitlin Riesewijk



What do you do in your role as product manager?

"A product manager collaborates with sales and product development to see opportunities in the market. For these opportunities flavors and concepts are developed and then discussed with retailers (e.g. your favorite local supermarket) to see whether they would be interested in carrying this product. Once approved, as product manager I am responsible for making a project planning. For this I need to control timing of product development, but also for testing, packaging, product information, and much more. It's quite a puzzle! It's nice Bolletje is relatively small, making it easy to collaborate with the different departments."

How does your study contribute to your work now?

"I love this question. I did a bachelor in Food and Health, where I did a lot of lab work related to food. This lab work, however, was not what I wanted to do for the upcoming 30 or 40 years, so I decided to do the Master Marketing and Consumer Behavior, where the focus is more commercial. For me as product manager this is a great combination, since I understand both the commercial side as well as the different analyses that are executed in the lab. This helps me a lot."

What is your favorite memory at Bolletje?

"I love my job, so I go to my work with a lot of pleasure every day. But especially cool was an opportunity I

had in the past year. Our marketing manager stepped down and I could take-over the management for not only the product, but the campaign with Q-music as well. It was so cool to hear on birthdays or from distant acquaintances that they participated in the Q-music campaign, or they heard about it on the radio. It was a great opportunity and the results were very tangible, I love that."

How do you work towards the seasonal products?

"The preparations for the seasonal products take time. This year before New Year's Eve we need to have finalized our plans for the season 2022. Therefore, we now work on the products of September 2022. This is important because of the many players that need to be taken into account, such as retailers and packaging

developers. Throughout the year, the product developers keep testing for new recipes and flavors, so we have a lot of tasting going on here. We then consider whether the products that were developed will all be introduced in the same year, if not, we put a product on the shelf and have the possibility to use it at a later stage. The product(s) that will be introduced then need to get packaging, and we come up with an exciting campaign for the products.”

Does Bolletje sell more in the winter months and how do you deal with this?

“Yes, we do sell more during these months. The seasonal products come on top of our assortment. What is interesting to see is that in the first months of the season, September and October, we sell a lot of the special flavored kruidnoten. While the closer we get to Sinterklaas, the Bolletje original kruidnoten start selling more and more. I think this is because the flavored once are more cookie-like, and are less tailored to Sinterklaas. The production of these products is always very hectic and challenging. For example the kruidnoten cannot be made on all of our production lines, only a few can create kruidnoten, which requires very careful planning, because we want to sell fresh products. For logistics and warehousing it is very busy period as well. During the two weeks before the start of the season, so halfway August, I can see the big red trucks constantly driving back and forth.”

What flavored kruidnoten sell the best?

“Mainly the mixed chocolate, they are an all-time favorite. The truffle kruidnoten also are a big hit. And what I am really proud of is the success of the Oma’s



Appeltaart kruidnoten, those are this year’s new introduction, and we have already sold more than we aimed for this year, so that is a big success. Which we will celebrate after this crazy busy period is over.”

What is your favorite kruidnoten flavor?

“In this season we introduced the Oma’s Appeltaart kruidnoten, and I really like those. And my favorite golden oldie are the truffel kruidnoten. I have loved those long before I started at Bolletje.”

What is the feeling you want to provide to customers?

“Everybody deserves good food with a smile! Bolletje aims to surprise time after time with beautiful bakery products. With craftsmanship and positive energy we offer a suitable product for each time of the day. Our products are artisanal, bring a smile,

are close, contemporary and familiar. We try to communicate this with our packaging and our collaborations. For example with the Q-music collaboration, we tried to share the fun experience of our artisanal bakeries.”

What is your holiday wish for our readers?

“It’s a crazy time due to COVID, and I hope everyone can go into the new year with a good, happy, and healthy feeling.”



Iris Kleinherenbrink

Iris Kleinherenbrink is junior product manager for several products at Bolletjes, she calls her products the “Fun” product categories, varying from different flavored Pepsels to breakfast cereals and ofcourse the seasonal products. She studied at Wageningen University and Research, and her favorite experience at Bolletje so far has been the take-over of the Q-music collaboration. Bolletje collaborated with Q-music listeners to develop and test new flavors, and this year the Oma’s Appeltaart kruidnoten has become their favorite!

It is the story of the past two years: the current crises, with extreme supply issues and tremendous demand shifts, leads to headaches at many decision-making teams. For Districon, consultants with a passion for supply chains, this period, however, leads to very interesting challenges: how can they support their customers making better decisions, taking into costs, services, CO₂ emissions, but also risks? “The crisis is an amazing opportunity, and the upcoming trends will only further increase the importance and challenges of the supply chains”, thus Victor and Julia say, both graduated from Industrial Engineering at our university.

TEXT Lars Geerlings **DESIGN** Caitlin Riesewijk



“Supply chain crises as a gift”

We all know the disruptions the pandemic has on supply chains. Container prices for example have risen by 500%. But for Districon these variations are not seen as hindering. Districon sees them as a huge challenge that they are enthusiastically trying to tackle. Everything has to go to the next level. Victor explains: “You need planning models which can deal with 50 to 75 per cent less demand, what happens if there is no supply? This also increases the need for scenario simulations and good use of data. It has also shown how important the supply chain is. Before COVID, optimization was sometimes about only a few per cent, but now it is about huge differences.”

These differences also ask for new knowledge. In her first year at Districon, Julia has experienced the difference between the theory at the university and the real world. Theoretical models applied at companies she worked for during her time at Districon are not always able to

deal with reality, Julia says: “Problems we have come across during the COVID-crisis are not covered in traditional models. When we were working out the replacement of a warehouse, we saw the prices of shelving units rise from under a million to 4.5 million Euros.

Victor continues: “these are real extremes. Usually, they do not exist, but during COVID, they did and still do. The planning models used at some companies are not able to deal with such uncertainties in their forecasts; instead of deterministic models we need stochastic models.”

Trends in the supply chain

These extremes are different from normal. Districon is of course used to deal with the regular ups and downs such as seasonal demands. However, the trends in the upcoming years in the supply chain will lead to new ups & downs. When asked, Victor replies that he expects data science and AI to be ramped up in the coming years: “The

unstable supply chains during COVID have shown the use of it. Creating the possibility of more calculations, such that we can use stochastic models and simulations, will help us with the uncertainties of today.” Districon states that AI is not only the buzzword it can be sometimes, as they are already applying it.

Another important upcoming trend for Districon is sustainability. Of course, just like data science, this is another popular theme nowadays. Districon has developed something unique, however. A part of the company is fully focused on a specific application: a CO₂-calculator. The government as well as companies have partnered with Districon to reduce their CO₂ emissions. Districon also has other projects, Julia tells us: “Multiple municipalities have asked us to help with transforming cities to a zero-emission zone. In the upcoming years, cities have to reduce their emissions significantly. If we think about city logistics, you have to think about creating other distribution centres



Districon

Districon is a consultancy firm focused on supply chains, with offices in three countries. One in Singapore, one in Chicago, and one in Maarsse. Most of their employees are based in the Netherlands. A handful of employees there has graduated from Industrial Engineering in Eindhoven, of which Victor and Julia are both one. Districon focuses on three areas: consulting, developing customized planning applications and finally fulfilling interim positions. Districon is active in many industries: from retailers to airports, from production to the government, it wants to stretch to every side of the market, according to Victor.

to ensure that you can keep delivering goods inside the city with for example electric vehicles or other alternatives of zero-emission transportation.”

Victor adds to this: “Within a few years you will not be able to reach the city with fossil-fuelled vehicles, but the supermarkets still need supplies. This requires more charging stations, but it also, as Julia said, changes the location of hubs. Doing so, you have to keep in mind which locations lead to the least CO2 emissions. So far, we see that this change is strongly government-driven, but companies embrace the changes as well.” And, Victor adds, there is more than only reducing emissions “You have to think about the usage of plastics, water usage in the fashion sector, usage of chemicals, etcetera.” Hence, we are a long way from solving the sustainability questions in the supply chain.

Brexit, workforce and consumption

For Districon, there are some other important trends. In a previous SCOPE, we have talked about the BREXIT. Currently, this has led to problems in supplying stores all around the UK. This is partially due to the lack of employees, something which Victor foresees as becoming a big issue here as well “Automatization will help, but we will see the consequences of lack of for example drivers, people in the fabrics.” Furthermore, Victor expects a trend in buying locally, instead of overconsuming products from across the world. This is stimulated by the current crisis.

How will Industrial Engineers be of added value considering the upcoming trends? Julia answers: “Industrial engineers bridge the gap between the clients’ situation and his future needs. We understand their business and processes and help our data scientist

to cover the business in data analytics model”. Victor adds: “We have hardcore data scientists in our team, educated in operations research. But they always need industrial engineers for their real knowledge about supply chains. Working together leads to a huge advantage!”.

“With Districon, we are at the heart of this change. Years ago, CEOs came from financial areas, but currently the tech and also supply chain guys are becoming the new leaders. For example, Bol.com has a CEO coming from logistics, and Nike is led by a CEO with an IT background.”, says Victor, and he believes that this interest will only grow in the coming years.

Victor Ponsioen

Victor Ponsioen is Director Districon Solutions EMEA. For more than 20 years he works in supply chain management. He combines 10 years of consultancy experience with 12 years of managerial roles at Albert Heijn, AH.nl, Gall & Gall and McGregor Fashion Group. Before that he studied Industrial Engineering and Management Science at the Eindhoven University of Technology. During his study Victor has been chairman of the 33st Industria board. Growing up in a retail family his supply chain passion is focused on the consumer goods business, from production to off- and online sales & distribution.



Julia van Dorsten

Since last year, Julia van Dorsten works as a consultant for Districon. During the past year, she gained experience in various assignments varying from a consolidation of three warehouses into one big warehouse, warehouse movements to strategic inventory management cases. Julia graduated the masters Operations Management and Logistics in 2019, after her first master Engineering Management she completed at Old Dominion University in the USA. During her study at the TU/e, Julia has been active as an Industria member, she organized various activities and has been part of the Industria Congres.

The UK hits our media time after time, struggling to adapt to a post-Brexit world. During the pandemic, demand has had its ups and downs everywhere. However, the UK's current, and massive truck driver shortage reveals that the nation seems to be unable to deal with these nuances. Why are these problems occurring mainly in the UK, and can we learn from our neighboring country? Or are problems coming our way as well? SCOPE talked with Zümbül Atan to better understand the scope of the problems.

TEXT Maiky Geerman **DESIGN** Caitlin Riesewijk



UK's supply chains are hit like a truck

It was immediately clear that the UK was about to face a challenging time after the shocking announcement of Brexit in 2016. However, it was unexpected that one of the biggest challenges would be their current truck driver mayhem. Countless shelves in stores that used to be filled to the brim are now simply gathering up dust. A combination of a struggling post-Brexit UK, bad working conditions and a pandemic sees the country cope with these major truck driver shortages.

How exactly are these shortages caused?

Currently, there is a shortage of about 100.000 truck drivers in the UK, and haulage companies are struggling to fill up the gaps. As mentioned previously, various reasons explain why these shortages are happening.

The inflow of new truck drivers is at an all-time low. It is estimated that nearly 30.000 aspiring truck drivers could not take their exams due to the pandemic. And even then, due to terrible working

conditions, many drivers are retiring and they are not being replaced by younger workers. Most facilities for truck drivers in the UK are in poor shape, without security, and need to be paid for unlike facilities in the EU. Haulage companies in the country state that the mean age of a truck driver is 55. A number that calls for action.

Additionally, during the pandemic, many European drivers went back to their home countries or decided to work elsewhere when the economy came to a sudden halt. However, Brexit presented very strict immigration regulations, and it is very difficult for these workers to return. While the pandemic resulted in similar trucker shortages everywhere, shortages in the UK are felt more than in the rest of the world due to this.

The essential role of truck drivers

Professor on supply chain management at the TU/e, Zümbül Atan, explains why

truck drivers are so important at almost any point of a supply chain: "Timely movements of material, components, modules, and products among all players are extremely important for the proper functioning of supply chains. These movements are possible only if there is a sufficient number of truck drivers. They move raw materials and components to manufacturing plants, they move end products to distribution centers and warehouses and eventually retailers."

So what happens if these logistic movements are not possible? Zümbül: "Even if only one of the links in the supply chain cannot function due to unavailability of truck drivers, the whole supply chain and eventually customers are likely to suffer." Here, the only mitigation strategy could be the availability of other transport modes, such as trains or planes; "a solution that is not even feasible in most cases", Zümbül says.

Consequences for (inter)national supply chains

It is clear that supply chains will feel the effects of the shortage. But how does it exactly affect supply chains, and which industries will be hit the hardest?

Firstly, all industries will be affected in some way. But especially the retailing industry, since it relies so much on truck drivers. Zümbül: "Consumers will see empty shelves (read: unsatisfied customers) and retailers will need to rely on other, more expensive alternatives". Additionally, she states that the food industry will feel the shortage the most. This is since food products simply don't have any value if they cannot be at the right place before their expiration dates.

Secondly, while empty shelves at supermarkets might be seen as the main result of the trucker shortage, other big problems can be encountered too. A nice example of this was provided by Zümbül. Assume a link between a manufacturer and a distributor is not functioning due to the shortage of truck drivers. Then, the manufacturer can't deliver the finished goods. Inventory will accumulate at the manufacturer, which implies high holding and maintenance costs. And since the downstream players, such as retailers and customers have to deal with shortages, they will look for alternatives. Any original demand might then simply disappear since the products are not at the right place at the right time. Zümbül expects many companies to go bankrupt.

Furthermore, the shortages will definitely result in an enormous bullwhip effect, Zümbül states. "Long and uncertain lead times and rationing



games are only two of the drivers of the bullwhip effect. It will take quite some time before supply chains resume their usual functioning. It is difficult to predict when this will happen".

And lastly, one thing is for sure, Zümbül says: Not only will customers see empty shelves, but customers will also see higher prices! This will lead to much customer dissatisfaction. For consumers, the best solution is to buy local products. The problem with shortages simply cannot be solved in a short time, and its effects will be felt for months or even years. Especially since the pandemic is not over yet.

As previously stated, the pandemic resulted in trucker shortages everywhere. However, the UK currently has the biggest burden as it cannot access the EU workforce due to Brexit regulations. The demand for many products was low at the beginning of the pandemic. Now, there is a sudden increase in consumer demand, and companies have difficulty keeping up. Clearly, we need a lot more truck drivers. Zümbül: "The profession

needs to be made more attractive to younger people and the UK needs to ensure the same (or even better) working conditions than other European countries to attract a bigger workforce; a strategy that needs joint efforts of many parties. This includes better terms and conditions, better and free facilities for long-distance drivers to use, and more recognition for the fact they're a vital part of the economy.

According to Zümbül, there is one main point to take away from this problem. "Companies need to think about appropriate mitigation strategies to diminish the potential damage of random but high impact events. Companies should understand that "disruptions" like these are likely and have serious consequences. It is not enough to make short-term plans, but all players need to have good proactive and reactive mitigation strategies".

And what about us, consumers? It remains to be seen when, and how much we are going to feel the increased prices.



Zümbül Atan

Zümbül Atan does research on supply chain management. Her main research interest is on multi-echelon supply chains subject to demand and supply uncertainties. Her objective is to evaluate the consequences of these uncertainties and develop strategies to mitigate their impact.

The 2021 kruidnoten test

We decided, there should not be December issue without us tasting any food. Kruidnoten are the small and very flavorful cookies that are eating during Sinterklaas. For this test we picked 9 different types of kruidnoten from 3 brands, Bolletje, Van Delft, and HEMA. The kruidnoten were tested on four metrics, first of all the looks, we want our food to look nice right? Then on crunch and flavor, and finally on addictiveness. Because that's the charm of a true kruidnoot, you cannot stop eating.

TEXT Vita Broeken DESIGN Caitlin Riesewijk



Bolletje Kruidnoten

Looks	★★★★☆	3
Crunch	★★★★☆	4,1
Flavor	★★★★☆	3,8
Addictiveness	★★★★☆	3,8
Total		14,7



Van Delft Originals

Looks	★★★★☆	3
Crunch	★★★★☆	3,8
Flavor	★★★★☆	2,8
Addictiveness	★★★★☆	2,6
Total		12,1



HEMA Kruidnoten

Looks	★★★★☆	3,1
Crunch	★★★★☆	3,9
Flavor	★★★★☆	3,0
Addictiveness	★★★★☆	2,9
Total		12,9



Bolletje Oma's appeltaart

Looks	★★★★☆	3
Crunch	★★★★☆	3,6
Flavor	★★★★☆	3,7
Addictiveness	★★★★☆	3,1
Total		13,3



Van Delft Truffel kaneel

Looks	★★★★☆	3,3
Crunch	★★★★☆	2,4
Flavor	★★★★☆	2,6
Addictiveness	★★★★☆	2,2
Total		10,4



HEMA Stroopwafel

Looks	★★★★☆	2,6
Crunch	★★★★☆	2,6
Flavor	★★★★☆	1,8
Addictiveness	★★★★☆	2,3
Total		9,3



Bolletje Red Velvet

Looks	★★★★☆	2,4
Crunch	★★★★☆	2,9
Flavor	★★★★☆	2,6
Addictiveness	★★★☆☆	2,1
Total		10,0



Van Delft Kokos white

Looks	★★★★☆	3,4
Crunch	★★★★☆	2,9
Flavor	★★★★☆	3,1
Addictiveness	★★★★☆	2,6
Total		12,0



HEMA Disco mix

Looks	★★★★☆	4,1
Crunch	★★★★☆	3,3
Flavor	★★★★☆	3,1
Addictiveness	★★★★☆	2,8
Total		13,3







“

Koen Minartz

Born in the town of Heerlen, I grew up in the lovely village of Voerendaal in zuid Limburg, together with my mom, dad and brother. Approaching the high school final exams, I was not sure what to do next; I knew it had to be something “technical”, but at the same time, I didn’t want to limit myself to something very specific yet. When I found out about Industrial Engineering, I realized it was the perfect fit. The rare combination of softer and technical courses offered the perfect opportunity to find out where my passion is.

As I progressed through the bachelor courses, I realized my passion lied with the technical parts. Together with quite a few other fresh Industrial Engineers, I turned to the dark side and started the master track Data Science in Engineering at the computer science department. You can imagine that I had some explaining to do when I told my friends I traded courses on product innovation and entrepreneurship for courses on how to sort a deck of cards as quickly as possible (didn’t expect that when deciding to study “AI”). Another surprise was that, after finally having caught up with programming and some obscure mathematical proofs, the covid situation led to even more screen time than anticipated.

I have always been active with things besides my studies. I joined Industria in the first year as a member of the FACULTI committee, and I was also part of the Year Book committee and the Kasco, and play handball at ESZV Oktopus, the student handball association of Eindhoven, where I also did a part-time board year. Also, I took on many side jobs,

like tutoring statistics to fellow IE students and student assistantships. One highlighted project was when I got the opportunity to join a research project on improving transportation for the disabled in Hong Kong, where some people, often kids, that cannot afford taxis have been waiting for years for a spot in the government-arranged transportation service for people with mobility issues. By applying some of the techniques I had learned about during the bachelor, and the programming and data analysis skills from the master, we were able to significantly improve the schedules efficiency, which should allow all waiting list customers to be served -- at least according to our model, as verifying this in practice was quite difficult amid continuous protests followed by a pandemic. Nevertheless, the trip to our collaborators in Los Angeles was a great experience!

Now that I graduated from Computer Science, I have started as a PhD candidate in the Data and AI cluster of the computer science department, where I will focus on applying Deep Generative Models (the technology behind deepfakes) to simulating scientific experiments. At the start of my bachelor, I would never have guessed to stay in the university after 5 years of studying, and especially not in this direction. Looking back, I would recommend everybody to take on projects and opportunities of which the reward might not be immediately obvious. In my experience, these typically were the things from which I learned most, and which led to new cool opportunities and possibilities to develop yourself and your interests further.

”

Spotlight

Are you or do you know someone who did something remarkable? Does he/she deserves to be in the spotlight?

Please contact the SCOPE:
SCOPE@industria.tue.nl

C.I.T.I.

As of this year, the international pillar operates under the new name of Center for International Travel Industria (C.I.T.I.). Meet the members of the 26th board, and don't hesitate to contact them if you want to know more about the international opportunities Industria has to offer!

TEXT C.I.T.I. DESIGN Caitlin Riesewijk



Eva Henckens - Chairman (chairman.citi@tue.nl)

Hello! I am Eva Henckens, a 19-year old American-born Eindhoven-raised third-year industrial engineering student, and chairman of the 26th C.I.T.I. board.

The things I value most in life are people and experiences as I think we can learn most from them. This makes the perfect recipe for a travel fanatic, as you meet people and have new experiences. Therefore, I was easily convinced, possibly non-sober, to join the Helsinki exchange in my first year. I am still very grateful for this trip as I met amazing people, and because it resulted in me doing this board year. I'm looking forward to organizing travels for Industria members so they can experience the things I got to experience. And if I may give you some advice in this little piece of text, to make the most out of your life, say yes to as much as you can, may it be a C.I.T.I. trip, or any other cool offers you'll get in life!



Jelle van Lint - Treasurer (treasurer.citi@tue.nl)

I am Jelle van Lint, and I am the treasurer of C.I.T.I. I was interested in traveling internationally and getting the experience of a part time board year therefore I joined the board of C.I.T.I.. After finishing my bachelor I wanted to do something else than only study. Also I wanted to do a pre-master so I could do an double master degree afterwards. Therefore, a part time board year combined with the premaster was a good option. Furthermore, in my free time I play football, like to game with my friend, and also like having drinks with my friends.



Sophie van Heuveln - Local Responsible ESTIEM (Lr.citi@tue.nl)

My name is Sophie (21) and I am currently a master student OML. I enjoy sports and I am a big fan of music. When I started studying Industrial Engineering in 2018, another passion of mine was aroused, namely travelling. During one of my first weeks I heard of a trip to St. Petersburg, Russia, with the international pillar of Industria. I decided to join, and two exchanges and three years later I am now in the 26th board of C.I.T.I. as the ESTIEM Local Responsible. This year I hope to get all Industria members as excited about our European network of Industrial Engineering students as I am. Are you curious about what our amazing network can offer to you? Do not hesitate to contact me! See you around.



Anouk Jansen - Commissioner of activities

My name is Anouk Jansen, and I am the Commissioner of Activities of the 26th C.I.T.I. board. I enjoy traveling, especially to Balkan countries, and I have recently become a member of the pole fitness association SPV Blue (they live up to their name: bruises are everywhere). I love having fun and drinking beers with my friends; naturally you can always find me at the Industria drinks and activities.

I was born and raised in the picturesque village 'Milingen aan de Rijn'. I was very lucky with this, I get to enjoy both 'Gruusbèkse carnaval' and 'Nimweegse vierdaagsefeesten'. In my first year I have been on the exchange to Helsinki. I made good friends and great memories there. For example, I learned that Finnish people will not be happy when you shout 'Meloensoep' at a sitsit. Furthermore, I have done some fun committees within Industria, for example the Business Trip; we organized a trip to the amazing BBC (Belgisch Biercafé). I am looking forward to organizing more fun activities for our members this year!

Crew

The Crew is the committee within Industria that is responsible for the drinks and big parties. The Crew is a group of three students who work together with around fifty amazing ‘Tappers’ who tap the beers at ‘The Villa Premium Student Bar’. Every Thursday we organize a drink, will we see you there?

TEXT Crew DESIGN Caitlin Riesewijk



Hi everyone! My name is Jens Adriaanse and I am part of the Crew 2021-2022. In 2019-2020, I started my bachelor Industrial Engineering at the TU Eindhoven, thus I am a third-year student by now. I came from the beautiful city of Terneuzen, where there is no nightlife, so I was very excited when I came to Eindhoven. After a lot of drinks in The Villa, I had the luck to be drawn to join the ‘Tappers’, so that I could not only drink beers, but also serve beers! Even though there were almost no drinks because of COVID-19, I really liked to be part of the ‘Tappers’ and I wanted something extra, so I joined the ‘Crew’. This is a group of three people responsible for the drinks and big parties of Industria. My function within the Crew is called ‘Chef Inkoop’, which translates to the decadent name of ‘Purchasing Manager’ in English. This means that I am responsible for the purchases that have to be made in The Villa. Whenever the beer is sold out, you can come to blame me. There is an unwritten rule within the Crew that the ‘Chef Inkoop’ has to take a dive into the Dommel when he has bought too little beer. Luckily, this has not yet happened, however, to keep the tradition alive, I will dive into the Dommel anyway this year!

Jens Adriaanse
‘Commissioner of Purchasing’



My name is Farah Schepens, and together with Jens and Marijn I am part of the Crew of this year. After starting my bachelor of Industrial Engineering, I quickly joined a committee, namely the Belgium Trip. I felt like this was a very valuable experience: besides having fun with your fellow members, you learn a lot and gain more professional skills. I decided I wanted to do more things besides my study to develop myself, so I also joined the Company tour, Gala and Tappers committee. After this, I wanted to become even more active for Industria, and I have always loved the Thursday drinks, so I decided to join The Crew. Since I have done quite some committees, work as a student mentor and student assistant and also play the trumpet in 3 orchestras, I have become good in planning, so I became responsible for all the planning of The Crew. You can think of quartile planning, but for example also the planning of all Tappers on a party like Pullûh Vullûh. I hope to see you soon at a drink in The Villa!

Farah Schepens
‘Commissioner of Planning’



My name is Marijn Konings, and together with Farah and Jens, we form the Crew of this year. Soon after starting with Industrial Engineering, I felt like I wanted to do more, other than just studying. After looking around, I decided I wanted to join the F.A.C.U.L.T.I-committee at Industria. This soon moved into doing the Intro week-committee as well, and joining the Tappers. My enthusiasm about Industria did not stop there, as I joined the ICT and yearbook-committee, and started the Sportsday-committee with several good friends. From the moment I joined the Tappers and heard about the Crew, I knew that I wanted to do this too. I was especially excited to activate others to come to the Thursday drinks and make sure everyone has a good time at the drinks, from freshmen to the 6th and 7th-years. Promotional responsible seemed the perfect fit, and I am very happy with the function I am in, and the great team that we work with. I hope to see you all soon on the Thursday drinks!

Marijn Konings
‘Commissioner of Promotion’

IRP

The International Research Project (IRP) is a study trip combined with internationally oriented research projects. Students of the Master Programs ‘Innovation Management’, ‘Operations Management & Logistics’, ‘Manufacturing Systems Engineering’, and ‘Data Science & Entrepreneurship’ are allowed to participate. Firstly, we, 22 students, conduct research in the Netherlands, based on a predetermined theme, which is ‘real-time economy’ this year. Secondly, we will go on a study trip, organized around the theme. On this study trip, we will visit several companies, universities and a Dutch embassy.

TEXT IRP DESIGN Caitlin Riesewijk

Destinations

The destinations for the trip of this year are Vancouver, San Francisco, Los Angeles and San Diego! We hope that it will be possible to travel outside of Europe in the summer of 2022. However, this will be dependent on the situation of Covid-19. If Covid-19 does not allow us to travel outside Europe a plan B is in place. The destinations for plan B are: Copenhagen, Stockholm, Oslo and Reykjavik. Unfortunately, due to the Corona situation, the previous two trips were cancelled. However, we are confident that this year the trip can take place.

Theme

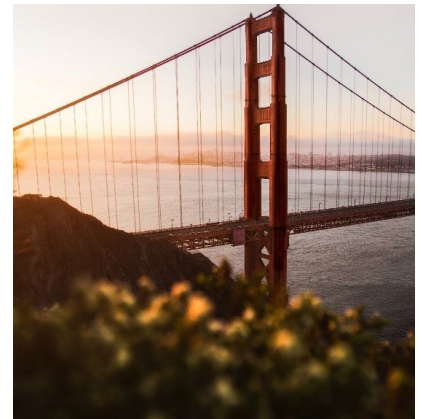
This year's theme is “Real-Time Economy – Today's Reality of Digital Connectivity”. In recent years, our economy has undergone a rapid transformation toward an on-demand model. With the introduction of smartphones and apps like Airbnb and Uber, people have been granted unprecedented access to giving feedback on products and services.



As a result, consumers have been brought upstream into the product development life cycle and now expect businesses to bend to their needs. This consumer shift has set the stage for what is to come in the enterprise.

New technologies are radically transforming the workplace. In the near future, we'll see the demand for instant gratification and access to information intensify even more. On-demand is no longer just a gimmick; it's a reality. As the dust on these changes settles, a new real-time economy will emerge.

Real-time economy (RTE) is a digital ecosystem where transactions between diverse economic actors take place in or near real time. This means replacing paper-based business transactions and administrative procedures by automatic exchange of digital, structured and machine-readable data in standardized formats. When we talk about real-time economy we mean many things but obviously mainly today's reality



of digital connectivity creating the conditions for it. Real-time covers all aspects of business and society, from product development and go-to-market to HR, decision making and customer service. From a technology perspective we're talking about fast data, artificial intelligence and the algorithm economy, big data analytics, the cloud, mobility (with mobile being the driver of the real-time consumer) and more. This results in faster and automated data exchange, better access to information and widespread adoption of RTE solutions, which should reduce process delays, save resources and transaction costs, increase organizational efficiency and business competitiveness, reduce bureaucracy in business, increase the speed and quality of decision-making processes, improve transparency, and stimulate economic and social innovation. In addition, a strong partnership, cross-border cooperation and interoperability will make it easier for companies to extend their business in the region and help increase export capacity.



IRP Board



My name is Juul van der Vorst and this year, I am part of the IRP board as Financial Manager. Besides this, I study Operations Management and Logistics. I am looking forward to next year and hopefully our trip in July!



My name is Dave Delnoije, I am currently doing my master's degree in Operations Management and Logistics and I am this year's coordinator of external relations. As part of my task description, I will provide the connection with foreign companies and maintain this connection to provide insightful company tours.



My name is Kobi Delahay and I study Operations Management and Logistics. This year I will fulfill the role of contracting manager in the IRP board. This means that I am responsible for arranging 22 student projects in cooperation with several Dutch companies. We already have a collaboration with a number of nice companies, but if you or someone you know would be interested in collaborating with the IRP you can contact me via the information below. I am really looking forward to setting up this project with my fellow students and what this year will bring!



My Name is Gwen Van-Leeuwen, and will start this year with the master's degree Operations Management and Logistics. I am really enthusiastic about being chairman of the International Research Project 2022, and start this project with a group of 22 motivated students. This fantastic year will hopefully end with an unforgettable trip.



My name is Tim Kuijstermans, and this year I started with the master study Operations, Management and Logistics. Besides my master I fulfill the role of Culture, Accommodation and Transport coordinator at international Research Project 2022. This means that I am responsible for team building activities with all participants, activities during the study trip, a travel planning, and a destination for a week of vacation after the study trip. I am really looking forward to all the joys this year will bring!

If you have any contacts with companies in Vancouver, San-Francisco, L.A., San Diego, Copenhagen, Stockholm, Oslo or Reykjavik you can contact Dave Delnoije by external. irp@industria.tue.nl, +31 6 27 86 28 00 or LinkedIn. If you have any contacts with companies in the Netherlands that would be interested in a collaboration you can contact Kobi Delahay by contracting.irp@industria

My international student experience

TEXT Sinan Yasarol DESIGN Caitlin Riesewijk



Hi! My name is Sinan Yasarol and I am from the beautiful city of Istanbul, Turkey. After getting my International Baccalaureate diploma, I moved to Eindhoven to study BSc. Industrial Engineering at TU/e. Actually, this was not the first time I was visiting Eindhoven and the Netherlands. When I was ten years old, I spent a week in Amsterdam with my family. Then, during the winter break of 2018, I visited the universities I would like to study at Utrecht, Delft, Groningen, Enschede and Eindhoven. After more than three years, I am so happy that I have made the right decision :) I still live in Eindhoven, but I commute to 's Hertogenbosch, studying MSc. Data Science and Entrepreneurship at Jheronimus Academy of Data Science (JADS).

Being part of the cohort of 2018 which is the first ever fully English-taught BSc. Industrial Engineering at TU/e, I have put so much time and effort, learned so much and at the same time had so much fun. In our first year, the study materials for some courses were still in Dutch. Therefore, it was a bit difficult. Fortunately my friends and lecturers helped me to understand the material and course content better. At the end of the first year, I was able to receive my "P-Diploma". Starting from my second year, the lectures and their content became much harder. However, we had the possibility to choose a lot of electives and thus design our study program. I have been interested in information systems (IS), data science and finance domains since my high school years. Therefore I took courses from "Advanced Information Systems", "Data Science" and "Business Economics" elective packages in my bachelor. Besides studying Industrial Engineering, I was also studying at the Honors Academy in my second and third years. I chose Energy Transition Track and joined the student team CORE. I developed my presentation, communication,

collaboration and many more skills by being a business team member and project manager in the team. Honors Academy was definitely worth the extra challenge I added to my life!

I really like helping others develop themselves. Therefore, I worked as a mentor for first-year Industrial Engineering students, and tutor for "Calculus" and "Data Analytics for Engineers" courses. By being a mentor, I shared my experience and tips with the first year students and by being a tutor, I believe I have mastered these subjects. Besides, since September I have been working as a junior data scientist at Studyportals where I also did my Bachelor End Project (BEP). By working part time there, I have had the opportunity to apply theoretical knowledge to practice and real life. Also, having an office in Strijp-S, I have really enjoyed being in contemporary places, art, cafes and the famous Dutch Design Week.

Many people (including my friends, family, study advisor and even lecturers) were worried about me while I spent the whole pandemic in Eindhoven. My twin sister and flat mates helped me in surviving during this period without having burnout. I learned two very important lessons: health is the most valuable treasure that we have, and we must be flexible about how we work. Besides, I have truly developed my skills in cooking, running

and growing plants! Last but definitely not least, the time I spent listening to music enormously increased and I am so happy that I have discovered many new genres

After this long serious write up about my studies and work, now it is time for sharing some fun stuff that I have been doing :) Firstly and most importantly, I have been playing handball for more than ten years already. Back in Turkey, I played in the school and invincible Besiktas Club teams. In Eindhoven, I have been one of the key players in the student handball association ESZV Oktopus, this year being my fourth season. I really like the true friendship, fast-paced handball practices and matches, and parties at the famous bar street Stratumseind with my great teammates. As I mentioned earlier, I am very interested in finance and investment and I have been a member of the investment club B&R Beurs Eindhoven since 2018. I really like competing with my investment group against the other investment groups to be the team with the highest return at the end of the year. I have definitely developed my investing skills and shared my experience with my teammates during my board year of our investment group. Furthermore, I really like to join Industria's activities. Starting from the trip to Antwerp to visit a company where I also met new fellow students, I have joined many activities such as lunch lectures, weekly "borrel" at the Villa and famous "Pulluh Vulluh".

That's all from my side. I hope you enjoyed reading about the colorful life in Eindhoven from the eyes of an international Industrial Engineering student. I also hope I can see you at one of the borrels or activities of Industria! So, as we say here, "work hard, play hard!"



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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 Rutger Bruin & Kees Zwaan DESIGN Caitlin Riesewijk

Hubert Deitmers

What has your career been like so far?

I graduated from Atlas Venture in Amsterdam at the end of 1987. These were the early years of Venture Capital the Netherlands. I then continued to work there, first in Amsterdam and in 1989/90 in Boston. After about 9 years at Atlas, I started early 1996 at the newly merged Endemol, where after a few months it was decided to apply for a public listing and the IPO actually became a fact in November that year. I was responsible for M&A, Legal and later on for Interactive as well. Together with my colleagues across 23 countries about 70/80 companies have been acquired, numerous joint-ventures were created and multiple multi-year contracts negotiated. After having been a Member of the Executive Board for numerous years (as one of the youngest board members in the Netherlands) and having sold ourselves to the Spanish Telefónica, I – again after about 9 years – started investing privately in companies (most appealing one in the Netherlands was Hyves) and subsequently I founded our own Venture Capital firm Endeit Capital together with Joop van den Ende. I recently increased my stake from 50% to 75%.

What makes you happy in your work?

Getting things done, in my case especially if our companies become

among the top 3 in Europe or top 5 in the world. Apart from that, I am active at a number of foundations both to stimulate entrepreneurship and in the medical field (Jong Ondernemen Foundation, LOEY Foundation, ItsME Foundation), very nice to do.

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

Several moments such as the start at Atlas but also the steps afterwards. I think that in the end you should not stay with a company for too long (certainly not in the first phase of your career). Although I had a great time at both Atlas and Endemol, I think in retrospect that I was with both companies about 2 years too long. The learning curve flattens out at some point in time and it becomes a little more autopilot.

What does your work/life balance look like at the moment, and are you happy with that?

Because I have my own business, it doesn't really feel like work. It's just something I enjoy doing. That does mean that a lot of time goes into it. The same goes for my wife Bernadette who also did business administration at the TUE and also has her own company. In addition, we have two fantastic sons and a super daughter.

How do you distinguish yourself as a business manager from managers with a different background? In which aspect is the greatest added value as a business administrator?

I think that abstract thinking in a problem-solving way is the most important thing we 'got' from university. I still notice every day that there are people who have difficulty with fairly simple problems; if we then sit down for a while, it is often resolved fairly quickly. If I look at myself, in addition having a feeling for new trends at an early stage as well as strategic thinking with a strong emphasis on a clear focus. Apart from that, connecting people adds value.

Old question:

What does your work/life balance look like at the moment, and are you happy with that?

New question:

How could the major Industrial Engineering on the TUE be further improved?

Why:

Digitization will increase accessibility for top universities abroad and the TUE will also have to continue to improve.



Hubert Deitmers

Age: 58

Graduation year: 1987

Role: Founder/owner Endeit Capital
Company: Endeit Capital



Bernadette Deitmers
SCOPE 1, 2022
Founder Savvy
Training



Rutger Bruin
SCOPE 3, 2021
Executive Search
Specialist

Luka van de Bunt

What has your career been like so far?

In 2015 I graduated from Den Hartogh Logistics, a logistics service provider in the (liquid) chemical and gas industry. After graduating, I decided to stay with Den Hartogh and worked in the operation for a while. After almost 2 years I had the opportunity to develop a worldwide S&OP process with a project team to better balance the tank container network. After the implementation of this project and having kept this process running for a number of months, I became responsible for the tank container planning in Europe.

Why did you choose the industry you work in now?

The company was the deciding factor for me, not the industry. Den Hartogh is a very open, ambitious and hardworking family business. I discovered this during my graduation project and that made me decide to stay here. Of course you have to be interested in the industry and its challenges, but it was not on priority #1.

Is there a step in your career that has been decisive and if so which one?

I don't think there's one step that has shaped my career, but I don't really believe in it either. I think it's about discovering what gives you energy. Which activities, which working environment, which colleagues, etc. And that you continue to (and dare to) seek this energy. Then you end up with a position, left or right, that suits you well.

A technical business expert often knows how to look closely at the bigger picture. Suppose you can exchange with Mark Rutte for a week and the Netherlands is your BV, which 2 things would you find important and tackle?

Wow, I had to think about that for a moment! What interests me enormously is the individualization and hardening of positions in a world that is becoming increasingly globalized and increasingly virtual.

You also see this in organizations (reinforced during the corona crisis)! Colleagues no longer meet informally, their conversations are only businesslike. That lowers empathy and miscommunication lurks. In order to continue to understand each other and to be able to work well together, that conversation at the coffee machine is indispensable.

I think that also applies to society. We must continue to meet in order to develop understanding for each other. So I would probably argue from the Turret for more community spirit!

What advice would you like to give current students?

Don't always keep all options open or think about what your next career step should be. Make your choices consciously and then go completely ahead. Then the opportunities come naturally.



Luka van de Bunt

Age: 30

Graduation year: 2015

Role: Manager Network Management

Company: Den Hartogh Logistics



Bas de Vries
SCOPE 1, 2022
Operations manager
Picnic Technologies



Kees Zwaan
SCOPE 3, 2021
Manager
Replenishment

Alumnia Board Update

Time flies... even during the corona crisis. Although we are more or less back where we were last winter, as shops, restaurants and bars are closed at 8 pm, we luckily also faced some good times where we were able to go back to our "normal" life... at least it felt like it.

As Alumnia we were also lucky to be able to organize a live event again. On the 18th of September, a nice after-summer day, we gathered in Monster, just south of The Hague, to go for some stand-up paddling, beach golf and a true Expedition Robinson challenge including some tricky questions. Of course the day could not end without a drink and a barbecue. We look back on another successful live event and were happy to see some of our alumni again!

Our next activity is the Social Drink. It is planned for January 7th, 2022 and it is not just a regular social drink, but also the celebration of Alumnia's 9th lustrum! The location is in Utrecht and you will not only have the opportunity to talk to your fellow alumni, but also to challenge them for a round of Jeu de Boules, or officially called, pétanque. For more information, have a look at our website www.alumnia.nl, where you can also register yourself.

Shortly after that we will have our annual meeting, for which we will announce the date and location in due course.

For now I would like to wish you a warm and happy holiday season, already all the best for 2022 and hope to see you at the Social Drink!

Martijn van Aspert

President of Alumnia



Upcoming activities

January 7th - Lustrum Drink

February 7th - ALV

End of February - BBQ Master Activity



Perseverance

Ambitious people would like to take on an incredible amount of tasks. To develop themselves, develop people they care about and bring their organizations one step further. However, on the way to reach your goal a lot of steps have to be taken and this will not always go without any ups and downs.

Everyone has a different goal which comes to mind. Please take a moment to set this goal for yourself, and please focus on a goal which you have always been trying to achieve but still have not done yet. For this goal you could find numerous obstacles for not achieving this goal yet. If one of your obstacles is the Covid-19 crisis then think what could be done within the boundaries of this problem.

For me personally, my goal especially for this year is to satisfy the needs of the Industrial Engineering and follow up master students to the best of my ability. When implementing this goal I notice that within boundaries written by the current Covid-19 situation we have to see what is possible.

The goal you might have thought of and my personal goal for upcoming year require a tremendous amount of perseverance. However, although there are difficulties in the current situation, by using the enormous perseverance and ambition you and I will be able to reach these heights. One way or another, we will make it work!

Daan van Strien

Chairman Industria



FOTO De Leeuw Media

Ups and (lock)downs



FOTO De Leeuw Media

This edition's theme of ups and downs might be very relatable in various aspects. One facet can be connected to the 'ups' in the Covid-19 infections which has led to the current semi lockdown. Many evening activities are canceled and it feels like a never-ending cycle, which is a repetition from last year. This time, luckily, all students are still allowed to come to the campus to follow the lecturers and study together with friends. It might be hard, but it is still an upgrade compared to having to study at home.

On the contrary, most employees are obliged to work from home. This can already give an interesting case for the to explore concerning how an employer can help his workers to cope with in this situation. At the same time, it is not a

far-fetched imaginary case for students to solve, as they might experience the same issues to find a good work-life balance. Especially, when all relaxing activities are not possible anymore, finding this balance might be very hard, but it remains very important for workers and students to stay up and positive even during downtimes which are out of their own control.

To end on a positive note, let us hope that this downtime will soon be over and the virus will be more under control again. Then, we hopefully can break this downward spiral and go up to better times where the sky is the limit.

Lynette Haksel

Educational Officer

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