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life in ESTONIA



2020 – year of exits in the Estonian startup ecosystem

Pivoting the Estonian way

Future banking is modular

Tallinn – the location to shoot your box office hit

Bocuse d'Or put Estonia on the gastromap

Edward von Lõngus takes art in the streets of Europe

Ragnar Sass: Pipedrive is a place for breeding unicorns



Photo by Jaan Roose

Cover photo by
Atko Januson

Estonia is the best place to build your next unicorn!

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Estonian Investment Agency supports companies investing and expanding in Estonia. World-class human capital, unique digital capabilities and a competitive business environment make Estonia a smart, agile location for businesses with global ambitions.

investinestonia.com

The production of the magazine has been inspired by green technology

Estonia's entrepreneurial startup revolution has taken the world by storm. Now the challenge is to preserve forward momentum and a formidable image as the most forward-thinking, cutting-edge bastion of enterprise.

The ability to meet that goal rests upon three important aspects. First, that Estonia continues to be resourceful and think out of the box. Second, that the country maintains a strong entrepreneurial environment and attitude, such as that exemplified by the e-Residency programme. And third, that the strong element of trust between the government and the people continues to flourish.

Ask any young student how they imagine a future career and they'll most likely say they'd like to be an entrepreneur. They relish the thought of risk-taking and creating a better world. They look forward to developing their entrepreneurship in Estonia because they can learn from the best practitioners. The business atmosphere is almost familial; an intimate environment in a small country where nearly everyone knows a successful entrepreneur who might advise them.

We are lucky to have so many success stories and the prevalent belief we can do it ourselves. Even with the knowledge that businesses don't always fly and companies need to be ready to pivot; to undertake drastic alterations in strategy, with a humble attitude it's still possible to achieve your goals.



And in wake of a multitude of outstanding business careers, successful startups and exits, many have decided to reinvest a large amount of money and knowledge in the new companies bursting onto the scene — a cycle that creates more success stories each year.

Today we are proud to declare that Estonia, with its perseverance and ingenuity, has taken first place in cutting-edge business startups with the highest number of unicorns per capita. Whereas every Finn owns a home sauna and every American an iPhone, it may soon be said that every Estonian owns a startup.

Kaspar Kork
Director, Estonian Investment Agency

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In November, Pipedrive, a company that develops CRM software for sales and marketing teams, became the fifth Estonian startup reaching unicorn status. The co-founder of Pipedrive Ragnar Sass tells how the company got started, explains why there are so many startup offspring born from Pipedrive, and discusses the challenges in pivoting.

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Estonian economy has survived the COVID-19 crisis well. Why?

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The future of banking is modular

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Salv is a software company building tools that fight financial crime. In their two-and-a-half year existence they have pivoted three times, but their clientele and products have been generally the same after every pivot. The co-founder and CEO of Salv, Taavi Tamkivi sees them as adaptations.

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The telemedicine company Viveo Health has been selected by 200 investors as one of the most promising startups in Estonia — a close second behind Bolt. Introducing its products in Mexico and India, the company now prepares for international expansion.

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Estonian IT companies pivot in the middle of the COVID-19 pandemic and hope for bigger success than ever before. Two relatively young start-ups — MySpotit and Zelos — are great examples of new concepts and successful pivots that will support their current plan to take on the world.

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Wolf3D sees pivoting as a vital part of business

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Milrem's journey: From bus repairs to defence industry

Estonian companies are increasingly active and competent in the development of unmanned ground vehicles. Founded in 2013, Milrem has become the European market leader in robotics. In 2017, the company was split into two — Milworks focuses on repairs and maintenance and Milrem Robotics on robotics.







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Meet Iseauto: Innovative and greener last mile transportation

A spin-off company Auve Tech and the University of Tartu are developing a hydrogen-powered self-driving vehicle — Iseauto, that is expected to be completed by mid-2021. Auve Tech CEO Johannes Mossov shared his ideas about how future traffic is going to look with environmentally friendly, self-driving cars.

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Can biopolymers save us from drowning in plastic?

Each year 120 kg of synthetic polymers derived from fossil fuels are used, per capita, in developed countries. In a couple of decades there will be more plastic than fish in the sea. Lauri Vares, Senior Researcher of Organic Chemistry at the University of Tartu claims we can save the planet with bioplastics.

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Biogen opens a branch in Estonia

With its headquarters located in Cambridge, Massachusetts [USA], Biogen is one of the leading biotech companies in the world, focused on developing treatment methods for neurological illnesses. On the 1st of December, Biogen opened a branch in the Baltics as part of the company's global growth strategy.

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Sole of Boot and Dance of Death — signs of street art in Estonia and Europe

The nature of street art is that you come across it in dark alleyways but, increasingly, there is an effort to bring it in exhibitions halls. Edward von Lõngus' works can be found next to the rubbish bin on the wall of a museum, as well as in its exhibition hall. His exhibition "Doomsday Cathedral" is now on virtual tour on the contemporary art platform noar.eu.

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"Tenet" brings new fame to Estonia as film location

Tallinn Linnahall has become a new tourist attraction as the opening scene of a Hollywood blockbuster "Tenet" by Christopher Nolan was filmed there. But there are many other locations you may recognise in the movie. "Tenet", with a total budget of 205 million USD, is doubtless the largest movie project (partly) filmed in Estonia. Interest in Estonia as a film country and shooting location has truly leapfrogged.

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Re-tuning the event marketing

The pandemic in spring 2020 turned the world-as-we-know-it upside down. But it also was a time to take action in order to survive. Lehari Kaustel recalls how the lockdown lead Global Virtual Solutions to organise online high-level UN summits, a song festival via thousands of iPads, a global conference of Santa Clauses and a European Space Week event that connected planet earth with the international space station in a virtual live conference.

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Bocuse d'Or has put Estonia on the European gastro map

Bocuse d'Or Europe's gastronomic competition took place in Estonia for the first time in October 2020. A dream come true for Dimitri Demjanov, the grand old man of Estonian fine cuisine.

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Honorary Consul's tech initiative digitalises British governments

Peter Ferry, a tech entrepreneur and the Honorary Consul of Estonia in Edinburgh owns the data platform company Siccar, which simplifies citizen interaction with government services in the UK and between companies. It was his close ties with Estonia that triggered this digital revolution.

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Events calendar: Highlights from December to April











Estonian held two master-classes at Web Summit 2020

Photos by Marek Metslaid





Unicorn School: film makers teaching the next generation about startups



Estonian 'startuppers' never rest on their laurels after their first success. One achievement is never enough and they are constantly reinvesting their profits and their knowledge in the creation of their next startup. Additionally, Estonian company founders rarely keep their knowledge to themselves and are eager to pass it on to others.

In the case of the Unicorn School project it is the next generation that some of the most distinguished Estonian company founders are investing in. In the short clips available online these entrepreneurs share their experiences in order to teach young people about entrepreneurship and to inspire them to start their own business. The impressive list of the speakers includes names such as Markus and Martin Villig from Bolt, Taavet Hinrikus from TransferWise, Kaarel Kotkas from Veriff, Kristel Kruustük from Testlio, Karoli Hindriks from Jobbatical, Kadri Tuisk from Clanbeat, and many more.

The Unicorn School project was started by Tallifornia — a film production company founded in 2018 by Rain Rannu and Tõnu Hiielaid. Tallifornia was behind the start-up comedy "Chasing Unicorns" that was released in 2019 and the excerpts from the movie are also shown in the Unicorn School video clips.

"The aim of the Unicorn School initiative is to make the stories of the business world accessible to young people and to show that starting your own business doesn't have to be a rocket science," Rain Rannu said.

Unicorn School introduces topics such as turning an idea into a real thing, finding investors, conquering foreign markets and finding inspiration. Unicorn School is aimed primarily at schools but offers useful knowledge to anyone interested in the world of startups. Wider distribution in schools will take place in collaboration with the Junior Achievement program. To see the clips and hear about the experiences of the well-known Estonian entrepreneurs please visit the website at

www.chasingunicornsmovie.com/kool

In order to get the most out of the interviews it is best to also see the "Chasing Unicorns" movie — a comedy about two Estonian startup founders trying to make it in Silicon Valley. The film can now be streamed online:

chasingunicornsmovie.com

Web Summit, an annual technology conference considered to be the largest tech event in the world, moved online in 2020 as did so many other forums in this, the year of the pandemic.

Estonians had a chance to host two online masterclasses; one presented by e-Residency and Work in Estonia and the other by the Estonian Investment Agency and EstVCA. Work in Estonia and e-Residency joined forces in a masterclass to share insights on how to get work done in Estonia's swift-moving digital nation. The attendees were introduced to opportunities for becoming an e-resident or starting and running a company fully online, as well as to possibilities for landing a job in any of the Estonia's fast-growing startups. A live Q&A session that followed the presentations proved extremely popular.

The Estonian Investment Agency in collaboration with EstVCA took the viewers on a one-of-a-kind startup journey, introducing them to the key steps and phases of a startup, from establishing and building a company to raising capital and dominating the market. Along the way, attendees heard from Estonia's National Digital Advisor, Marten Kaevats; listened to an investor story by Clarifai and received an introduction to the Estonian VC market fund presented by EstVCA. And, naturally, everyone met the real live unicorn — Bolt!

Might you be interested in taking a startup journey into the land of unicorns, working in Estonia or e-Residency?

Check out these websites:

investinestonia.com
workinestonia.com
e-resident.gov.ee
estvca.ee



Photo by Atko Januson

Estonia's First Chief Scientific Advisor at the European Commission

Maarja Kruusmaa, Vice Rector of Research at Tallinn University of Technology, Professor of Biorobotics and academician is one of seven scientists chosen to advise top leaders of the European Union in the next couple of years.

The many decisions taken each year by the European Commission directly influence the lives of 450 million residents in the European Union. For immediate access to the latest and most accurate scientific information, the Commission regularly consults with the Group of Chief Scientific Advisors which, for the first time in history, will include an Estonian. Professor Kruusmaa emphasises that in this capacity she does not represent any organisation, state or person. In fact, one of the prerequisites for advising the European Commission is independence.

Current topics of immediate concern to the advisory group include response to the pandemic, cyber-defence, ageing of the EU population, health and environmental risks caused by microplastic and climate change. Kruusmaa believes that research-based policy not only helps to face such challenges, but will also increase European competitiveness.

The Corona pandemic represents one of the largest challenges facing the European Union. "It has become clear that many other problems are connected to COVID-19. According to one of the advisors, this is the largest non-military catastrophe since the 17th century," Kruusmaa emphasises. "We will see the aftermath of COVID-19 for a very long time and this is not only medical or related to mortality. We need to bear in mind that millions of children, especially outside Europe, have needed to stay at home due to the pandemic and have been not able to participate in the learning process. Those results will influence us and future generations and already today we have to take decisions to ensure that we will not have to deal with the consequences of the pandemic in ten years' time."

Professor Maarja Kruusmaa is an internationally-recognised IT scientist whose broad area of research ranges from underwater robotics to learning algorithms. Her professional initiative led to the founding of the website ReaalAbi, which has assisted Estonian pupils in their science studies during the Corona crisis.

The EU: Africa Post Crisis Journey hackathon empowers women



Photos by Rasmus Kooskora

Estonian startup hub Garage48 organised an online hackathon in December to engage the tech communities from EU and Africa in solving the socio-economic problems in Africa that have been deepened by the Covid-19 pandemic.

Around 2000 participants suggested 700 ideas out which 315 were selected to be developed during the seventy two-hour online event. The organisers encouraged cross-continent teams to create a truly inclusive experience for the participants from 93 countries. Two hundred ninety three applicants entered the hackathon from Nigeria. Estonia had the largest number among EU applications with seventy seven.

The teams followed ten topics set by **Garage48** in cooperation with the African Union that follow the UN sustainable development goals: education, food security, health, governance, digital economy, Smart Cities, cyber security and big data, banking and finance, job security, and vulnerable populations. Food security turned out to be the most popular topic for the participants.

At the opening of the hackathon, the president of Estonia **Kersti Kaljulaid** expressed the hope that the first potential European-African unicorn might emerge from the event. **Tony O. Elumelu** (Chairman of the United Bank for Africa Group & Founder of Tony Elumelu Foundation) was hopeful that the pandemic will help to bridge the digital divide and encouraged the participants to forge lifelong partnerships.

By Sunday evening, emotions were running high among the 20 finalist teams. The jury, including **Antony Rytel** (GovTechPolska), **Maria Luisa Ferreira** (European Investment Bank), **Lembit Loo** (Europe-Africa D4D Hub and MFA Estonia), **Peter Vesterbacka** (Founder of Angry Birds), **Paul Weber** (MFEA Luxembourg) and **Mari Hanikat** (CEO of Garage48), had to consider the strength of the team, examine the prototype development process, the impact of the idea and the sustainability of the business model. When the winners were finally announced at an online ceremony broadcast from the studio in Palo Alto Club in Tallinn, some of them broke into tears on finding out that their dream was about to come true.

The overall winner of the hackathon is **PadShare**, a platform developed by a team in Uganda to grant better access to menstrual hygiene products for women in vulnerable situations. The first prize comes with 20,000 euros and access to a post-mentoring and matchmaking programme. PadShare was also selected as the winner in the category of vulnerable populations. **Sandra Awilli** has been working on the idea since 2019 and, finally, at the hackathon was able to find her team of developers and designers to come up with a clickable product. Overwhelmed by the success Awilli said: "You have no idea how many lives of young girls you have changed! Periods don't stop at the pandemic. Period poverty is the world's biggest solvable problem."

Jury member Mari Hanikat pointed out that the winner has thought through the concept thoroughly, something that is not usual during hackathons. "It is not just a sharing platform but also brings together donors — big corporations, that have a social responsibility program, and ensures a just distribution among those in need," she noted.

The most successful entry among the Estonian participants was **Umbrella Tree CoLab**. **Tiina Rootamm** (32) and **Jaanika Umalas** (29) met last autumn as students of European Studies MA programme at the University of Tartu and developed the idea of a platform to boost tech education and careers for African women. At their first hackathon ever, they found teammates in Rwanda and Nigeria to take over roles as developers and designers and ended up winning the track of job security as well as achieving the 10th overall position. Rootamm is looking forward to start a 6-week incubation for her start-up at Garage48 in January and hopes to start implementing the project.

Among the top projects was also **GotCash** from Zimbabwe — a platform that uses blockchain technology to lift the value chain of … goats.

The EU: Africa hackathon prize fund is 100,000 euros. Organising the hackathon was co-funded by the Ministry of Foreign Affairs of Estonia's development cooperation fund, Finland, Ireland, Luxemburg, Poland and the European Investment Bank.

Garage48 (Estonia) has been organising hackathons and other entrepreneurship focused programmes for more than 10 years all around the world.







Against All Odds

By Eve Peeterson, Startup Estonia


Eve Peeterson

Even though it has been difficult to match pre-pandemic growth rates, Estonian start-ups have generally done well in adjusting to and accepting these extraordinary times. As expected, some have shifted focus from hiring and expansion and taken on other objectives to accommodate the situation.

According to the Estonian Startup Database, there are 1110 startups operating in Estonia as of the third quarter with 66 new ones created in 2020. Overall, 23% have been active for at least five years.

The turnover of Estonian startups totalled 562 million euros in the first nine months of 2020, growing by 41% year-on-year. Those with the largest revenue (in euros) were **Bolt** (214 million), **Pipedrive** (47.1 million), **Adcash** (20.1 million), **Fiizy** (11.3 million), and **Synctuition** (11.2 million).

In the first nine months of 2020, Estonian startups paid 72.8 million euros in employment taxes [an increase of 30% from last year's 58.3 million]. The largest employment taxpayers were **TransferWise** (10.6 million), Bolt (7.8 million), Pipedrive (7.2 million), **Veriff** (2.9 million) and **Paxful** (2.7 million).

Employment numbers

The global crisis has had a noticeable effect on the Estonian startup sector, but they've retained the same number of employees.

Statistics from the Estonian Tax and Customs Board indicate that at the end of the third quarter of 2020, Estonian startups employed 6329 people locally — demonstrating 3% growth over last year's total of 6124. The largest employers among Estonian startups include TransferWise (939 employees), Bolt (606 employees), and Pipedrive (389 employees).

Funding has not slowed down during the pandemic

Despite the crisis, Estonian startups have signed 55 funding deals for 175 million euros in the first 9 months of 2020, with 21 startups receiving funding of more than a million euros each, compared with startups in the first 9 months of 2019 having made 44 funding deals for 190 million euros. In the first 9 months of 2020, the biggest investments were made into Bolt (100 million euros), Veriff (14 million), **RangeForce** (13.6 million), **Klaus** (4.6 million), **Pactum** (2.7 million) and **Milrem Robotics** (2.7 million).

Startups have experienced a variety of funding problems throughout the pandemic, resulting in a lot of talk about the current business climate and the ways in which fundraising has become far more complicated. In most cases, founders and investors are not able to meet in person and there's a lot of uncertainty in terms of both future market demand and the overall economy. But many startups have seen it as an opportunity. Prior to raising their 14 million euro round in July, Veriff had witnessed increased customer engagement and taken advantage of accelerated digitalisation around the world.

2020 — year of exits in the Estonian startup ecosystem

Exits speak for the strength and global potential of the startup sector. There have already been 4 significant exits in our startup ecosystem this year. In January, **Pocosys**, a banking software provider was acquired by Opera and in June, the global billing platform **Fortumo** was acquired by Boku. In October, we saw another Estonian startup acquisition as performance monitoring software **Plumbr** was acquired by US-based provider of the Data-to-Everything Platform, Splunk. In November we achieved another great milestone for the Estonian startup ecosystem as Pipedrive attracted a majority investment from the U.S. enterprise software focused private equity firm Vista Equity Partners. The transaction increases Pipedrive's value to 1.5 billion dollars, making it our fifth unicorn company alongside **Playtech**, **Skype**, TransferWise and Bolt.

We've seen a huge spillover effect in the case of Pipedrive with at least 11 new startups created by either Pipedrive present employees or alumni. Since the deal mentioned above offered many Pipedrive's early employees a chance to cash in their options, we anticipate seeing a lot of new angel investors in the community, funding new ventures in the future.

The COVID-induced crisis has not slowed Estonian startups down but has highlighted their strengths as adaptable and lean businesses, offering their products and services globally. Given that numerous startups worldwide have had to close their doors or barely survived the year, it is remarkable that our startup ecosystem as a whole has done well and can look to the future with head held high.

Check out Estonian Startup Database at **www.startupestonia.ee/startup-database**

Vivita Vista: a start-up video series for young entrepreneurs

By Mari-Liis Lind



Meet our vistas — Marta, Morten and Karolin. They are young entrepreneurs, each with a unique business idea, but no relevant knowledge and no clue how to begin. In order to find out how to build a million-dollar startup from scratch, they will visit some of the most successful entrepreneurs in Estonia to learn about their experience. Throughout a ten-episode video series they'll discover how to start a business, how to develop an idea into a real product or service, how to prototype and test their idea, how to find customers, how to build a scalable business, and so on.

Check out the videos, take part in the kids' journey, and discover what will become of Morten's jam machine, Karolin's science kits and Marta's online platform.

This ten-episode startup video series is created by **Vivita Estonia Ltd** (vivita.ee) with the support of Startup Estonia. VIVITA is an international creativity accelerator network for kids and youth currently operating in 7 countries including Estonia, Lithuania, Japan, Singapore, South Korea, Philippines and the USA. Our goal is to develop short, entertaining and educational content for kids aged 9 and above, that will inspire entrepreneurial mindset. Each episode of the series is focused on a specific topic from the initial business concept to the implementation of a startup. A wider goal is to help our younger generation to cope with the future, to be a part of a startup ecosystem, and to develop a startup mindset through STEAM-skills and entrepreneurial skills. With these goals in mind, we hope to influence public attitudes towards startups by raising general awareness among young people, their parents and teachers, and by creating a tool for educators. This will also increase collaboration between the startup community and education sectors and develop cooperation among organisations and initiatives that provide support systems and programmes in the field of entrepreneurship.

The video series was developed as educational content for schools and other organisations that help children in developing a variety of competencies. The programme will interest any curious youth who has an exciting idea and passion to develop it into a real business product or service.

The video series will be publicly available for everyone to use from January 2021 at vista.vivita.ee. This educational tool was created in cooperation with the startup co-working hub Lift99 Rockets (lift99.co), communications agency Miltton (miltton.ee), media production companies Mellow Ltd (mellow.ee) and Brightnez Ltd (brightnez.com), The Education and Youth Authority (harno.ee), Estonian Association of Technology in Education (tehnoloogia.ee) and is financed by the European Regional Development Fund through the programme Startup Estonia (EU50651).



Pipedrive – a place to breed unicorns

By Ronald Liive



Photo by Atko Januson

As Pipedrive reached unicorn status, co-founder Ragnar Sass tells about why there are so many successful startups growing out of the company.

Photo by Mario Tasane



The five founders of Pipedrive: (1st row from left) Martin Tajur, Timo Rein, and Martin Henk, (2nd row) Ragnar Sass and Urmas Purde

November started with a bang on the Estonian startup scene. Pipedrive, a company that develops customer relationship management (CRM) software for sales and marketing teams, announced signing an agreement to receive a majority investment from **Vista Equity Partners**, an Austin, Texas-based VC firm. The valuation of Pipedrive grew to 1.5 billion USD meaning it's the fifth Estonian startup reaching unicorn status.

Both Skype and Pipedrive were backed by Niklas Zennström

Estonia now has five startups that have reached unicorn status meaning their valuation is over 1 billion US dollars. In chronological order the list is as follows: **Skype**, **TransferWise**, **Bolt** (formerly Taxify), **Playtech** and **Pipedrive**. As Vista Equity Partners now has a majority stake in Pipedrive it effectively means they've acquired Pipedrive.

Although the details of the deal have not been made public the word on the street is that of all of the Estonian unicorns to date only Skype's exit surpassed Pipedrive's. That is an interesting coincidence as both Skype and Pipedrive were backed by Swedish billionaire entrepreneur **Niklas Zennström**. The latter was his second investment in Estonia.

Pipedrive was founded in Estonia. The majority of the workforce is also based in Estonia but the headquarters has been moved over to New York. Besides Tallinn and Tartu, Pipedrive's offices can be found in Prague, Lisbon, London, Riga, Dublin, St. Petersburg (Florida) and soon in Berlin as well. The company is aiming to be listed on the stock market in a few years.

Founded in 2010 by **Timo Rein**, **Urmas Purde**, **Ragnar Sass**, **Martin Henk** and **Martin Tajur**, Pipedrive's main selling point has been that it's a highly intuitive sales software built by sales people for sales people. According to Pipedrive, about 95,000 companies in the world use their solutions. Salesforce and Microsoft are the top players in the CRM market.

"Thanks to Pipedrive, Niklas came back to Estonia. Figuratively speaking, it looked like he was back at home," explained Sass.

There was a huge influence of ex-Skypers in Pipedrive. The sale of Skype triggered a frenzy of starting new companies. It's apparent that the sale of Pipedrive will have the same effect.

How one failure can lead to another success

About 14 years ago **Ragnar Sass** ventured into entrepreneurship with his first startup, **United Dogs and Cats.** Simply said, it was supposed to be a Facebook for ... You guessed it — dogs and cats. **Ambient Sound Investments** (ASI), a private investment company founded by four Skype founders **Toivo Annus** (1972-2020), **Priit Kasesalu**, **Ahti Heinla** and **Jaan Tallinn**, made an investment in Sass's startup.

ASI organises events for the startups in their portfolio and one of them that took place in 2009 was around sales. During that event Sass got introduced to Urmas Purde and Timo Rein, both of whom had been in sales for years by that time.

About a year later it was clear that Sass's first startup was not a success but rather a flop. Although Purde and Rein were strong in sales and they had an idea for a CRM, they lacked the technological know-how.

"When it became clear that United Dogs and Cats will not continue then in the spring of 2010 Purde and Rein contacted me about their CRM idea. Their main problem was that over half of CRM softwares were not actually used or catered to the needs of people doing the actual selling," said Sass.

After exchanging emails with Purde he discussed the idea with Henk and Tajur. All of the parties involved decided that the concept seemed to be valid and they would go ahead as equal partners.



The team of Pipedrive in December 2020

"Purde and Rein had both been in sales for many years. They started off with door-to-door sales. They had a clear vision in their heads what kind of CRM and to whom and why they wanted to build. They had even asked someone to draft a 50-page technical spec [for] what they wanted to build. We decided not to use that so we would not limit ourselves," said Sass.

The first prototype was ready in the summer of 2010 and, according to Sass, if you compare them to the product used now in 2020 there are noticeable similarities. At the same time as Pipedrive began, Sass also started a hackathon series called **Garage48**.

Hiring people with a founder-like mentality

The business model of Pipedrive has stayed the same over the years. Although the company has not pivoted there have been many startups that have gotten off the ground thanks to Pipedrive. Sass thinks that the reason for that could be in the hiring process.

"We hired people that had the potential to become founders. That was one of the criteria we looked at when hiring. These kinds of employees start to think along with you. They act like they are the founders themselves."

He gave the example of Martin Kõiva and Kair Käsper. Kõiva was the CEO of Cherry OÜ, a Groupon-like discount coupon website. Käsper ran a creative agency. They had the x-factor to be an entrepreneur. While working at Pipedrive, they created their own startup — **Klaus** —a B2B software tool for making internal feedback easy and systematic. Klaus raised around 2 million USD back in 2019 from the venture capital firm Creandum. Notably, Creandum was the first backer of Spotify. Klaus was their first investment in the Baltics.

In September of 2020, Klaus secured another investment in the approximate amount of 5.5 million USD. The round was led by Global Founders Capital.

"I think there should be a motivational package in place that people believe and understand. I believe stock options should be a part of it. In the first years, we were really generous in it, in later years we pulled back a little," said Sass.

He also believes that the overall work environment in the company was a contributor. Sass encouraged employees at Pipedrive to try out their own startup ideas and let him know if someone is building something exciting.

He has even invested in some of those ideas and that helped to build the founder-like culture inside the company.



Photo by Atko Januson

‘Pipedrive has always considered important to support its employees’ personal as well as professional growth’

“We did not have a program or an obligation for our employees that they also needed to work on their own startup ideas but as our work was organised in a way that employees had targets to hit we didn’t prohibit them to work on their own ideas at the same time while being employed at Pipedrive,” he noted.

One could imagine that holding a nine-to-five job and at the same time building your own startup could be counterproductive. But Sass says the opposite was true.

“I can’t remember any situation when someone’s startup affected their work in Pipedrive. Everyone seemed to know when was the right time to leave so they could focus on their idea to the fullest.”

There have been people that have left Pipedrive to pursue their own idea and after seeing it fail went back to work at Pipedrive.

“I even said to the employees that when your idea fails you can always come back. You have to pursue your idea because when you don’t do it you will regret it afterwards and start to think about ‘what-ifs’.”

At the time of the interview Sass counted seven startups that began at Pipedrive and, a few weeks later said that the count has gone up to about 10 or 11 but not all of the ideas ‘ready for primetime’.

Since the sale of the company made a lot of the employees at Pipedrive rich — some even millionaires — Sass predicts that the list will grow even bigger.

Our interview was conducted only a few short weeks after the big news broke and, by that time, Sass (an active angel investor himself) had been contacted by about 10 Pipedrive employees wanting to know how they can become angel investors too.

“We’ve been discussing potential investments already. I’m certain that in the coming months there will be more people wanting to try out angel investing,” he said.

Thanks to Garage48, Sass is a well-known person in the startup scene, not only in Estonia but also in Latvia, Lithuania, Belarus, Ukraine, throughout Africa and elsewhere. In 2020 he was pitched over 3000 startup ideas. As a result he can usually evaluate what ideas have potential and which don’t.

“We gave company stock generously to our employees. Because of the sale they now see first-hand what kind of value the stock program has. Now they have a taste for it and they would like to repeat it. The ones that think becoming an entrepreneur yourself is too risky are looking towards angel investing.”

There could be a syndicate growing out of Pipedrive that makes several investments a year. Sass says that they have yet to discuss how they will legally constitute themselves, but the desire to make it happen is there.

“When we find a startup that we like we could fill their whole round with angels that got their start from Pipedrive. I think that group of investors will make about five investments in 2021,” he stated.

Sass does not see a reason for the 700+ employees of Pipedrive to worry about the future of the company because the people that have been running it will continue to do it. He guarantees that Pipedrive will continue to be the same company that it has always been, with a big growth potential. Sass is keeping his eyes on one of the main competitors — Salesforce which is valued around 200 billion USD.

Startups that got their start from Pipedrive

Eventtornado — Platform that takes care of every small detail of a hackathon. Co-founded by Pipedrive co-founder Martin Henk.

Outfunnel — Helps companies to bridge the gap between marketing and sales functions. Co-founded by Pipedrive alumnus Andrus Purde (not to be confused with Urmas Purde, his brother).

Klaus — Quality assurance software for support teams that measurably improves customer service quality by making internal feedback easy and systematic. Co-founders Martin Kõiva and Kair Käsper have worked at Pipedrive.

Alfred — Data protection made easy and accessible for companies. Co-founded by Pipedrive alumnus Martin Ojala and current employees Jaana Metsamaa, Maksym Viushkin, and Andrii Rozumnyi.

Hastli — Monitors company websites to find solutions to make the site better. Co-founded by Kristjan Hiis, Tambet Paljasma, Alar Kirikal, Rasmus Rüngenen and Pavel Baranov who all to this day work at Pipedrive.

10Lines — Autonomous robot that marks down lines in a parking lot. Co-founded by Pipedrive alumnus Janno Paas.

Fizure — Budgeting app for construction companies. Co-founded by Pipedrive alumnus Meelis Ojasild.

Mentornaut — Marketplace for tutors and their clients. Co-founded by Triinu Haller who to this day works at Pipedrive.

Single.Earth — Marketplace for generating profit from forests, wetlands, and other natural resources without selling them as raw materials, but by preserving them as carbon and biodiversity offset providers. Co-founded by Merit Valdsalu who to this day works at Pipedrive.

Marina Ahoy — A self-service enabled software for marina management and invoicing. Co-founded by Sergei Kretov who to this day works at Pipedrive.

Salto Network — a high level Upwork for startups that connects startups with top advisors and founders, focusing on scaling and growth. Salto also runs a 100-hour ultra intensive growth bootcamp twice a year. Co-founded by Pipedrive co-founder Ragnar Sass.

‘We hired people that had the potential to become founders’

“Pipedrive has always considered important to support its employees’ personal as well as professional growth. When you have so many employees as Pipedrive has you will see how some of them want to try out being an entrepreneur and some just leave the company. If the departure rate stays around 20 people in three to four months then it’s normal.”

Referring to Skype, Sass says that in 2005 it was harder to reach unicorn status. For a B2C company it will take less time now. For Pipedrive (B2B) it took ten years.

Why it’s hard to pivot

Talking about pivoting Sass says that, mentally, the most difficult part is that the whole team needs to believe in it and will go with the decision. He bases his claims on his advisory and angel investor experiences.

“The pivoted idea needs to be highly motivating for all team members. That’s the centre of gravity. If you have investors then that is a hard part also to convince them that a pivot is the right decision at that time.”

At the end of the day it’s up to the founder, or founders, to decide to pivot or not. Sass does not see that an investor has the authority to tell the founder what he or she should do. He realises that many investors don’t understand that they only have an advisory role.

“It’s really difficult to find the right time to pivot,” he said. “There are a lot of examples of when the founder falls in love with the initial idea so hard that they are not willing to let go of it. It’s quite common that the pivot is not executed at the right time.”

Potential candidates for the sixth Estonian unicorn



Veriff — Identity verification platform

Monese — Mobile only alternative to traditional banks to transfer money

Starship Technologies — Developing small self-driving robotic delivery vehicles

Cleveron — Produces robotics-based parcel terminals and creates click-and-collect solutions for retail and logistics sectors. Also building a self-driving delivery vehicle the size of a small car

Skeleton Technologies — Developer and manufacturer of ultra-capacitors and energy-storage systems

Sass puts his bet on Veriff, Monese and Starship. He predicts that the number of unicorns will double in five years’ time.

Merit Valdsalu: Sass personally has played a big role in the startup scene for me



Merit Valdsalu is just one of the many Pipedrivers that has taken advantage of the opportunity to pursue her own startup idea while working at the now unicorn organisation. According to her Ragnar Sass personally has played a big role in why she's become a startup entrepreneur herself.

"He encouraged us to pursue our ideas. He has always been supportive and helpful. Thanks to Garage48 he has created a good and strong startup community in Estonia," said Valdsalu.

She describes Pipedrive as an employee-friendly and motivating employer.

Her first startup, StandByMate, was born during the time she was the Head of Localisation at Pipedrive. With that effort she and the team intended to improve the maritime employment market. But StandByMate has ceased operations.

Her second startup, **Single.Earth**, coincides with Valdsalu going on maternity leave from Pipedrive. The Estonian parental leave system gives the option for a mom or dad to stay at home with the child for up to three years. For the first one and a half years the parent will receive monetary compensation from the state in the amount based on their previous average wage. Also your job is secured at your employer for the duration of parental leave.

Thanks to the parental leave system and to the sale of Pipedrive, Valdsalu is, at the moment, fully focused on the building of Single.Earth.

"I've gotten a good network, experience and foundation from Pipedrive on how to work on your own idea. Pipedrive helped to widen the view on startups and everything to do with them. The know-how and culture we got from there was huge."

Valdsalu did not want to disclose whether she held any Pipedrive stock and said she values the experiences she had there even more than potential monetary assistance.
"At Pipedrive you could work on your own ideas without needing to worry that you will be looked at with a funny look. We even could discuss our ideas with the founders and they gave us their feedback and opinions. No one ever hindered anyone that worked on another startup."

Valdsalu describes Single.Earth as a startup that aims to solve the problem of greenwashing. Right now greenwashing companies tend to spend money on some mysterious carbon offset projects without the deep knowledge of what the projects are really about.

"Our desire is to use the financial instruments that the companies already have and use for the environment and nature. We want to offer a fully-transparent, reliable and beneficial carbon offset option, so that nature will get the full benefit from it."

For example, currently forests are valued only on the basis of how much wood they contain, but Single.Earth aims to change that by taking into account how much the forests bind carbon, how species-rich they are and how valuable the habitat is.
"We will initially use carbon offset business models to motivate forest owners to keep their forests growing instead of clearing them down. Single.Earth is a marketplace type of platform. Every forest or other natural resource owner can join our platform."

On the other hand, they leave the option for companies, or even individuals who want to compensate for their carbon footprint, to support local owners of natural resources. Single.Earth has been in stealth mode for about a year now, but Valdsalu promises exciting news for the near future.

She sees that natural capital is becoming the most important investment instrument. Single.Earth facilitates natural capital investments that make a real impact on the climate and nature through business models like carbon allowances and biodiversity offset.

Estonian economy has survived the COVID-19 crisis well. Why?

By Tanel Saarmann



Photo by Kaupo Kalda

Before joining euro area in 2011, Estonia could not benefit from the additional advantages which a membership in a single currency area brings about. Euro area member states benefit from a broad range of standard and non-standard tools of the Eurosystem, which support ample liquidity and healthy financial conditions required to facilitate lending and fiscal support packages to the real economy which is crucial in a global crisis. The ECB role has been crucial in supporting low rates.

During the Corona pandemic, Estonian economy demonstrated again resilience (like during the euro debt crisis of 2012–13) and flexibility with GDP growth falling among the best performing euro area economies. Tõnu Palm, Chief Economist of Luminor Bank, explains what's behind this phenomenon.

Photo by Alina Birjuk



Tõnu Palm

The Corona crisis has been very different in nature from the last global financial crisis of 2008. The entire economies were shut down in Europe in spring at very short notice with services suffering even more than manufacturing sectors. Global growth and trade contracted more than in the previous crisis, with value chains hindered by coronavirus restrictions. "Remarkably, the sharp GDP contraction of Estonian open economy dependent on trade at the very height of the crisis, in the second quarter, was two-times lower than the average in the euro area," says Palm. "In the second quarter, the euro area economy contracted by 14.7% on average compared to a year before; in Estonia this figure was substantial, but 5.4%."

First and foremost, Palm explains, this is because Estonian economy is significantly more balanced today than it was at the start of the global financial crisis of 2008, which was proceeded by 5 years of economic boom with excessive borrowing and significant current account deficits. Reaction of economies to the same shock differ as adjustments to the crisis are state dependent (i.e. on economic structures, state of economic health, economic policy measures enacted i.e. all matter for the ultimate outcome). For example, when two athletes compete, one fit and trained and the other one just recovering from a virus, the situation is not equal. Estonia is not wrestling with excessive debt or leverage, neither has it inherited a high share of non-performing loans from past crisis. Also the Estonian medical system (which benefits from state-of-the-art universities and a well-functioning state-run medical system) coped well in general with the first wave of the pandemic given the circumstances. The ongoing challenges are related to lack of staff as the stock of protective medical equipment has been gradually bolstered. The medical challenges no doubt remain immense in regions most hit by the second wave of Covid-19.

"There was a real potential risk in spring for a far worse economic outcome if we would not have had measures in Europe to support labour markets and economies with monetary and fiscal support. Since we did not test the capacity limits of the medical system in Estonia during the spring months there was no need to lock down too large of the share of the economy in spring. Also the share of the hardest hit tourism sector is smaller than in many other European countries. The across the board decline in foreign travel bolstered domestic savings and facilitated domestic tourism and retail spending. No doubt many exposed sectors remain in dire straits and challenges in labour markets remain with us as employment has taken a harsh hit," says Palm.

All countries are in the same boat in the battle against the coronavirus. It is today too early to draw conclusions about the relative success of recovery from coronavirus.

It is positive that Euro area economy staged a rather strong recovery in Q3 with many of the hardest hit economies staging a comeback. Estonia continued a relative success story — if it is appropriate to even call it that in a pandemic — with growth recovering in Q3 to -2.7 y/y (-4.3% y/y in euro area). There is however a very high cost for Estonia with employment actually falling -4.7% y/y in Q2 or twice more than in euro area (-2.3 y/y). Estonian labour markets have taken a substantial hit and it is usually weaker who suffer disproportionately the most as there are fewer savings. Likely more wealthy economies weather better coronavirus effects with bolder support packages for businesses and labour markets. Likely Germany will once again stand out as one of the good examples with resilience in regard to employment.

Palm also emphasises the flexibility euro area participation has brought along to Estonian economic political landscape. In 2009, Estonia still had its own currency — the kroon — and hence followed a rather strict budget balance policy under currency board arrangement since 1992, which did work rather well to constrain populist pressures and yielded the lowest government debt in the EU.

We lacked the opportunity to let our budget go into larger deficit during the global financial crisis to comply with the Maastricht criteria in order to join the euro area club. With euro area participation, the economy has become much more resilient as we have seen numerous past episodes and there is now an opportunity to facilitate the economic adjustment by letting automatic stabilisers work in full and use discretionary fiscal stimulus as in case of other euro area members benefiting from euro stability. The euro is a good project facilitating economic stability and performance, but it requires prudent fiscal policies from members during good times to have the available buffers to deal with crisis. Populism and excessive debt issuance is not healthy whatever the currency arrangement.


Erkki Raasuke

"Monetary policy allowed us to maintain as supportive financial conditions as possible during coronavirus. This has facilitated fiscal response which is very much required to keep viable businesses afloat and support labour markets," emphasises Palm. "If we revert to excessive cost cutting like in 2009 and allow unemployment to increase more than justified, cutting salaries at the same time, it will exaggerate the decline in consumption and employment, leading potentially to longer-run loss of productivity with rising expenses for health care and structural unemployment. Avoiding a liquidity crisis from turning into insolvencies of companies was crucial with the emphasis now turning to facilitating a greener and innovative growth transition. It is the choice of investments which will matter in how resilient and competitive euro area will become in a decade when we will see China's rise as the top technology superpower.

According to bank estimates, the Estonian economy will achieve its pre-crisis level by the end of 2021 or the beginning of 2022 at the latest.

Luminor's success story

Luminor Bank, which is aggressive on the Estonian market in a good sense of the word, is slightly older than three years.

"Those three years have been extremely intense — probably more intense than anyone at Luminor Bank or even in the entire Baltic banking market has experienced before. We have managed to achieve a lot in this time. We have merged six banks in three states into one bank; three subsidiaries into one company," explains **Erkki Raasuke**, CEO of Luminor Bank, who has been in charge of the entire process.

Luminor Bank has repaid all loans to its parent banks and has taken loans repeatedly and successfully from international markets, issuing the first Estonian-covered bonds. They have significantly reduced risks linked to money-laundering and the financing of terrorism, and they have raised client deposits from 8 billion to over 11 billion euro. They have separated banking systems from parent banks. A summary that includes just some of their activities.

"In normal conditions such changes would have taken a decade or even longer. This work has been done with extreme focus and dedication and at times also in a manner which meant that, in order to keep up the pace, we had to give the baton to new and fresh workers," says Raasuke.

Such intensity has been a conscious choice, made in order to bring positive changes to the more than 800,000 private clients and 80,000 business clients. The beginning of the third wave of changes means that Luminor is now prepared to once again actively participate in the financing of its clients and in developing new digital solutions.

Prepared for worse

As for all companies and organisations, 2020 has been a complicated year for Luminor Bank. In the beginning of the year, it was prepared for active growth and expanding financing activity when the first wave of the pandemic slowed them down. In a couple of weeks they managed to send more than 75% of the staff to work at home and to continue servicing customers without major interruptions. Preparations were being made in case the economy froze, causing subsequent problems.

"Thanks to the relatively strong economic position of the Baltic states, the skilled management of the risks of the pandemic as well as the adaptability of our people and communities, there was no drastic shock. We can consider the way we have dealt with the crisis until now to be successful. Of course, there are a lot of sectors which have been hit hard by the pandemic, but the general life and economic activity has proven to be more resilient and adaptable than we were able to predict in the beginning," says Raasuke. "At the same time, it is too early to draw any conclusions, but news about the start of vaccinations in the near future gives hope that we have managed to deal with this unexpected and very different situation relatively well."

According to Raasuke, the foundation for this success is a balanced economy, small loans, high digital capacity and the ability to adapt fast.

Luminor brings about change

Raasuke explains that Luminor Bank grew out of the vision that the Baltic states need one large, client-centred bank which is focused on the local community. This need and expectation have not disappeared and this is the goal of Luminor's activity.

"We consider our most important role to be to expand the financial opportunities for clients and to give them useful and future-oriented advice. The Baltic banking sector is well-developed and its technological quality is very high. But when it comes to financing clients, we are in several areas stuck in customs and habits which were created twenty years ago. Yet the financing of consumption has developed fast, therefore there is a lot of room to improve home financing and small company financing from the perspective of the customer," he says.

Photo by Sandra Palm

The future of banking is modular

By Ann-Marii Nergi

Just like a house built from Lego blocks, Modularbank can build you a bank with the exact bits and pieces (modules and features) you need.



Rivo Uibo and Vilve Vene

Founded in 2019 by a small group of Estonian financial IT pioneers and entrepreneurs, Modularbank is an API-first cloud-agnostic next-generation banking platform composed of flexible and independent modules that cover end-to-end everyday banking processes. It underpins the aims of both regulated banks and other businesses in meeting customer needs and aspirations by enabling the rapid rollout of new financial services. Current customers of Modularbank include one of the largest financial services group from Finland, a leading retail group in the Baltics and a Frankfurt stock exchange-listed financial services institution operating in 23 countries.

Find out more at
Modularbank.co



Photo by Sandra Palm

Vilve Vene

Modularbank was set up by five Estonian banking technology pioneers who wanted to make banking technology simple and seamless. Its founders are not just experts in technology but also within the banking industry. Together they have over sixty years of experience in building transformative financial technology solutions for institutions, ranging from the Estonian Tax and Customs Board to Skype, Royal Bank of Scotland and OP Financial Services.

The career of **Vilve Vene**, co-founder and CEO of Modularbank, began in the 1990s when she joined Hansabank [the predecessor of Swedbank Estonia]. This young company in a newly-independent country did not have money to waste, and took the decision to build its own IT infrastructure well before the internet was in wide use. With no initial capital or experience in commercial banking, out of both necessity and ingenuity, they created a digital bank from the beginning. As early as 1993, Hansabank was offering PC [personal computer] banking services, allowing customers to perform real-time account activities without setting foot in the bank.

A few years later, as internet access became widespread, Hansabank brought its online banking system **hanza.net** onto the market. It was one of the first of its kind in the world.

"I am a builder by nature, I want to create things. When the bank became Swedbank, the developments kind of froze, but I didn't want to leave them for someone else," recalls Vene.

That inspired the founding of the IT company **Icefire**, built by her own team and greatly influencing the creation of Estonian national software systems. The majority of **Icefire's** clientele were banks.

Rivo Uibo, another co-founder of Modularbank, also worked within the Icefire core team. He mentions that Icefire [which is still successful in the service business today] built tech services for approximately 15 banks in Europe.

In 2019, Vilve, Rivo and three other colleagues from Icefire founded their own company called Modularbank; a cloud-native next-generation core banking platform, consisting of various modules (capabilities) for building use cases in retail and business banking landscape. Today customers of the startup include traditional banks, fintech startups and companies from other fields who wish to come out with innovative, customer-centred financial solutions for their customers quickly and easily. Modularbank has offices in Tallinn and Berlin and establishment of a commercial unit in London is underway.

Recently, in the beginning of December, the company announced that it has raised 4 million euro growth capital. The investment round was led by **Karma Ventures** and **BlackFin Capital Partners**. The extremely strong circle of investors enables Modularbank to strengthen its product development team and commercial units in European financial centres, to start with business activity in the United Kingdom and to take the next steps towards global expansion.

Vilve Vene explains the new company's background, saying that "The difference between the previous company and the current one is that in Icefire we created tailor-made solutions according to the customer and, as a business model, it meant we could create as many products as we had people and clients. The business model of Modularbank is use-based, enabling the company to scale. The impetus for creating Modularbank came directly from clients. They said that 'our speed is impressive, but we need to be even faster'."

Clearly, customers no longer wanted to wait for custom solutions to be created for them. Instead, they demanded a ready-made product generator to purchase off the shelf — now, if not sooner.

Interest in the services of Modularbank escalated during the Corona crisis. Vene elaborated, saying that "Large banks which have old IT systems are not able to immediately react in a changing situation and to changing needs. Therefore, they were suddenly unable to service their customers who asked for a grace period, or distribute support funds to companies fast enough. Services were lapsing. We witnessed how large organisations, who had only talked about change before, were suddenly forced to act."

Both Vene and Uibo confirm that, in large traditional banks, change may be slow, but at least they have started to realise that adaptation is necessary. Crisis, they emphasise, has always been a good motivator for innovation.

Modularbank is not in a position to reveal their clients yet, but say that they gained their very first customer — a Frankfurt stock exchange-listed banking group active in 23 countries — within the first month of operating. "When such a huge corporation decides to activate their core business activity on your platform, it is a huge trust credit," says Vene. "At first they took our banking core and payments module for their digital bank. As the collaboration was good they decided to move their other service portfolios into our capacity."

Catching that 'big fish' in the very beginning had a lot to do with important personal connections that have opened doors to the right people. Uibo recalls that, as they approached the first client, the product itself did not exist. There was only the prototype. Within the supply framework, in a record five-month period, they developed the product.

"You can take such a huge risk only when you really trust yourself, your team and your product. We worked like a special unit, in hour-and-a-half time slots that were more or less set in stone, outlining in detail what we needed to do, how fast we needed to do it and deadlines for specific stages of development," says Uibo.

The creators of Modularbank are certain that, while financial services have been the sole territory of banks, in the future they will also become part of the services offered by companies active in other economic sectors. For example, a producer of solar panels may want to start offering consumer credit to their clients and that becomes part of their customer package — a credit offer hidden inside the main activity.

"Today we have the technology which enables such developments. Five years ago such technology didn't exist," claims Vene. "If we compare the way platforms were built in the past to how it is done today, the difference is in the fact that earlier one complete banking system was built which incorporated all services from loans, to payments and bank cards. Today the system is built from different modules — the loans are one module, accounts another, bank cards a third — which are independent but at the same time able to interact with each other. This is exactly what allows for all client-oriented companies to start offering financial services today and those are the capabilities we are providing at Modularbank."

Collaboration with a big player on the European financial landscape

In November, Modularbank announced signing a strategic cooperation agreement with the Estonian subsidiary of the leading European card processor Nets.

Cooperation with Nets Estonia enables Modularbank to expand the reach of its platform. By integrating the capacity of Nets, the company significantly improves the value offer related to cards for its clients, who will be able to access a flexible card management system, to have immediate access to card networks, and to organise card production and card data processing. This cooperative Nets Estonia/ Modularbank effort allows clients to release cards simply and to administer them cost-effectively.

Rivo Uibo says that partnering with such an important player in European finance as Nets is a significant sign of trustworthiness and showcases the capacity of their platform. "This collaboration illustrates a new trend in the world of financial technology, which has ecosystems and platform economy in its centre. Instead of doing everything on their own, companies [can] create collaborative models which make optimal use of existing innovative and flexible technical solutions, in order to offer maximum value to end consumers."

COO of Nets Estonia, **Henrik Anker Jørgensen**, says that the cooperation with Modularbank adds speed to their own and customers' activities, while cutting technology costs.

"Many banks and card issuers are having trouble with out-of-date systems, whilst trying to keep up with cloud-based neo-banks. The collaboration between Nets and Modularbank enables both traditional and neo-banks to move forward utilising the technological capability of the new generation," Jorgensen said.

Collaboration between the two companies has launched successfully and the first customer contracts have been signed. Nets plans to allow client-access to additional capacities of the Modularbank banking platform at some point in the future.

Salv gives banks secure information exchange

By Ronald Liive



Taavi Tamkivi

Photo by Jake Farra



Salv is a software company building tools that fight financial crime. In their two and a half year existence they have pivoted three times, the most recent one still in the works. Their latest anti-money laundering (AML) tool, **AML Bridge**, is being piloted by the four biggest banks in Estonia: **LHV**, **Luminor**, **SEB Estonia** and **Swedbank Estonia**.

Salv is an example of a company whose clientele and products have, in general, been the same after every pivot. Nevertheless the co-founder and CEO of Salv **Taavi Tamkivi** sees them as adaptations. In its short operating life, the company has raised two financing rounds totalling about 3.9 million USD/3.3 million EUR.

Consulting business grew into a tech startup

Salv was founded in the summer of 2018 by Taavi Tamkivi, **Jeff McClelland** and **Sergei Rumjantsev**, all of whom had previously worked at **TransferWise**. McClelland and Tamkivi were even colleagues at **Skype** before that where Tamkivi was the lead of the Revenue Assurance and Fraud Data Science team and McClelland the lead of Fraud Analysis team. McClelland ventured out to become an analyst and the People Experience Team lead at TransferWise. Tamkivi continued in the field of AML and compliance. While on paternity leave from TransferWise, Tamkivi took a year off work to enjoy being a dad. During the leave, increasing numbers of friends and former colleagues contacted him for help in things related to AML and payment fraud problems in general.

"I decided to help them out just as a hobby of mine. I offered my services on an hourly basis. At some point I noticed that the interest has grown quite significantly and I couldn't handle all of them myself so I asked some people to help me out and we founded a company also," explained Tamkivi, describing the first steps of building Salv.

He recognised it wasn't accidental that people reached out to him. Very smart people and interesting companies were in trouble with these issues. Once registered, Salv offered consulting, data analysis, customer and transaction data analysis services.

Company moved along quite quickly. Just three months after he had consulted first clients Tamkivi hired his first employees. Initially they provided data mining knowledge under the name of Dataminer, as hourly workers. That stage lasted for nine months.

"We realised that the things we helped to solve on an hourly basis could be solved technologically with a scalable product. That was our first pivot turning a service sales company into a product company. The help we offered was essentially the same, but the form of how we did it changed," said Tamkivi.

Looking back he describes the first nine months as a manual validation period. They used that time to accumulate capital that was later used to finance the hiring of developers. During their first pivot the problem they addressed remained the same, but the method to solve it changed. Also the team did not alter in any way.

Under a strict definition of the term 'pivot', Salv's first pivot didn't necessarily qualify, but Tamkivi says they pivoted because it was their conscious decision to make the value proposition methodology a scalable one.

Filled market made them pivot again

Six months later Salv took on its second pivot. The payment fraud market was already filled with providers and Tamkivi realised that, although their product was better than that of the competitors, standing out was difficult.

In December of 2019 Salv secured a seed fund of investment in the approximate amount of 1.6 million EUR/2 million USD. The round was led by **Fly Ventures**, alongside **Passion Capital**, **Seedcamp** and a few angel investors.

The Salv CEO noted that, even back then, the company's software was faster than competitors' offerings, both in terms of setup time and integration.

"We believed that our product was stronger, but the competitors had been on the market for five years already. Then we pivoted from a payment fraud product to an anti-money laundering tool."

Compared to payment fraud solutions, AML problems are much more complicated. But the team and functionality remained the same as the problem Salv solves shifted to address greater complexity.

At the moment the team consists of about 25 to 30 people mostly working from Tallinn and Tartu. A few are abroad as well. The company has attracted clients from England, Switzerland, France and the Baltics. The most notable being Estonian bank LHV.

Salv's service sector, known as **RegTech**, refers to a group of companies that use cloud computing technology through software-as-a-service (SaaS) to help businesses comply with regulations efficiently and less expensively.

Looking back at his career, Tamkivi acknowledges that RegTech is currently in the middle of a revolution such as he witnessed 15 years ago in Skype, and 10 years ago in TransferWise. In comparison, Salv's system took a month or less to set up and minutes to modify the rules for the customer. Thanks to that efficiency, the banks can protect themselves more swiftly because they could build automated rules inside the system that take into effect the newest criminal patterns.

Yet another shift in the company

Right now Salv is working on yet another idea that Tamkivi would rather not call a pivot but product development.

"About a year ago we noticed that financial institutions such as banks don't have a secure tool to exchange information with one another. With AML Bridge we offer a secure tool that the AML teams at banks can use to exchange information while still following regulations."

Tamkivi gave the example of an individual or a company trying to open a bank account with obvious signs they are planning to use it for money laundering. There aren't any tools secure enough on the market at the moment for banks to exchange that information with others. But if a bank received notice from another bank of potential suspicious activity and the same individual looks to open an account with them, they'd be warned to examine the client in more detail.

"We are in the pilot stage with AML Bridge. There are high technical demands for such a product because of the regulations in place for banks. They can't share information about their customers with anyone else. And even when they can do, the information can't [shouldn't] get into the hands of a third party."

There are some options in the AML directives that specify how this kind of information may be shared across financial institutions. These directives prohibit the sharing of blacklists.

"If one bank makes a report about someone with a notice that they couldn't justify how they managed to have a million euro income, the ID of the client will be flagged. If someone checks the same ID they will see a flag," Tamkivi elaborates.

Information is only shared on a need-to-know basis and the whole process is fully audited. He compares it to the Estonian coronavirus tracking app **HOIA**, which informs the user if they have been in close contact with a person that was infected with the virus but does not share other information about it.

Tamkivi does not want to call their latest innovation a pivot since one of their investors insisted that, when the user and technology remain the same, this is called 'finding a product market fit'.

AML Bridge has been a successful product in its first months of operation. Four of Estonia's largest banks LHV, Luminor, SEB Estonia and Swedbank Estonia are using it to confirm that the Privacy Enhancing Technology (PET) enables safe, secure data sharing within the bounds of regulatory and data privacy laws in the European Union.

Salv hopes that when the pilot proves successful it will set a new AML standard for financial institutions across Europe. Financially speaking, AML Bridge demonstrated its resounding success when, early in December 2020, Salv announced closing a funding round of 1.5 million EUR/1.8 million USD. The money will be used to expand the pilot to other European Union countries. Tamkivi sees Latvia, Lithuania and the UK as the next most probable places to implement the AML Bridge.

According to the CEO, several banks and fintech companies outside Estonia have already expressed their interest in applying a similar cooperative model.

A proof of Tamkivi's competence can be found in the recent news that he was picked to lead the financial technology workgroup at **FinanceEstonia**. The aim of the group is to enable growth possibilities for local fintech firms to expand internationally. FinanceEstonia is a financial sector representative organisation that was founded in 2011, it works with members and stakeholders to ensure an attractive and competitive local environment and ecosystem.



Viveo Health conquers big markets with telemedicine

By Tanel Saarmann



Photos by Marek Metslaid



Raul Källo

The telemedicine company Viveo Health has been selected by 200 investors as one of the most promising startups in Estonia — a close second behind Bolt. Introducing its products in Mexico and India, the company now prepares for its international expansion.

These recent times have shown us how urgently healthcare needs to change. And one of the most promising leaders of this mission is the Estonian e-health company **Viveo Health.** When healthcare providers all over the world closed their waiting rooms at the beginning of the pandemic, doctors and patients turned to their phones and various internet environments. Yet it all felt so superficial, inconvenient and — most importantly — unsecure.

"Security has always been our top priority. Many communication channels used by medical professionals today are not protected from the patients' health data leaking out," explains **Raul Källo**, CEO of Viveo Health.

Viveo Health provides a virtual doctor's office of essential systems ranging from a prescription centre to medical labs and a payment function. Källo explains that doctors can operate independently, without a reception room or support staff. When they introduced the free version in March over 800 doctors worldwide — from Nigeria to Qatar to Japan — signed on within the first two days. Doctors from 42 countries joined the platform at the beginning of what has been an exhilarating journey.

Extremely rapid development

In total, Viveo Health has raised €4 million in investments to support urgent expansion as demand escalated. They also decided not to open in 42 countries simultaneously, which might have led to chaos. Instead, in addition to the Baltic states where the company was already active, they extended operations to Mexico and India, as well as a development centre in Armenia. "It was very important to us that there was no serious competition in those countries, that our activities would not be prohibited by gaps in legislation and that demand for our services was high," explained Raul Källo.

Today Viveo employs 80 people worldwide. The company has worked systematically to build operations in select new markets. Locally-based teams are bringing together existing medical enterprise from pharmacies to specialised medical professionals. Meanwhile, the free platform for doctors is still on offer globally.

CEO Källo makes no secret of the fact that Viveo Health has been approached by global investors who expressed interest in investing in an Estonian company.

"There are several due diligence processes underway. We will have an intermediate round of raising investments. We will meet with the global leaders in the new year when we have more time available," Källo explains.

Significant changes to the platform

Raul Källo admits that the free version of the platform, which was made available last spring, may be slightly too complicated for people who are not at home in technology. However, Viveo has listened to its users and made user-friendly adjustments. Today it is a solid virtual doctor's office which includes the functions of issuing referrals and prescriptions as well as making payments.

"The benefit to the patient is much bigger. Doctors can accomplish more tasks more comfortably. In each country we have to create separate integrations with prescription centres, laboratories and pharmacies. It is not a typical product which you can scale globally," explains Källo.

In the first wave of the pandemic, traditional medical treatments were interrupted in many parts of the world. When the situation reversed and physical doctor visits could resume a strong demand for virtual appointments remained.

"One month ago we carried out a survey in Latvia and 92% of respondents claimed that they wish to make a virtual doctor visit. We asked the question before the second Corona wave," says Källo.

Medical systems undergoing change

Raul Källo finds it disturbing that human life expectancy is directly linked to income. This is true in Estonia and elsewhere. Those with more money are expected to live, on average, a decade longer.

"Quality medical services must be available to everyone and technology and digital solutions help serve this end," he says.

Källo predicts that medical services will be personalised, not because every person has their own specific family doctor, but because it will be based on data that is collected and placed directly on the virtual desks of doctors.

"Once the doctor sees it, they will be able to say if a problem is likely to escalate or not," Källo said, explaining his vision of a healthier future.

A change in thinking

In most circumstances, medical systems tend to be conservative and slow to change. However COVID-19 has made clear that virtual interaction is not the future, but the present.

It is pivotal that doctors adjust because patients seem to be getting used to the concept faster. And no wonder, since global statistics indicate that the average visit to the doctor takes three hours. Virtual visits save a significant amount of time.

During the pandemic crisis, South-Korean doctors who suffer from chronic disease themselves helped man the clinics by joining Viveo. And an 87-year-old doctor from Mexico — invited to help out but was clearly at risk because of his age — learned the Viveo system in order to work remotely. Källo says that when someone so old was willing and able to adapt to new medical digital technology, nobody else has an excuse not to.

Viveo Health is creating the future of medical service with movement from the physical environment to a virtual one. Yet it is important to emphasise that in order for long-distance interaction between the doctor and the patient to work, it is not sufficient to use Zoom or the phone, nor for doctors to be jumping from one online system to another or taking physical notes on paper. The future of first level medical help, a comprehensive digital solution, has been created by Viveo Health.

What is the Viveo Health solution?

Telemedicine brings together patients and medical specialists at a distance, protecting both from physical contact while enabling the patient to book a consultation faster.

The interaction between doctor and patient takes place in a digitally-secure environment. Onboarding is fast and the platform is super easy and intuitive to use. Doctors can issue digital prescriptions, collect payments and keep track of data. Viveo Health is currently available for individual doctors and for clinics.



Photos by Atko Januson

Two Estonian startups strike gold in a changed world

By Tanel Saarmann



Hardi Kinnas: "Think outside the box, work in the box."

Estonian IT companies pivot in the middle of the COVID-19 pandemic and hope for bigger success than ever before.

MySpotit is a relatively new player on the Estonian startup landscape. It originally offered exciting, specialised meeting rooms for short-term rent in Estonia, giving B2B companies and teams the opportunity to break with routine and experience something different. They found that the change in environment stimulated inspiration. In spring 2020, the company found itself in shock overnight, just like many others. But, out of the blue a new concept has accelerated their business — and now they plan to take on the world.

Hardi Kinnas, co-founder and CEO of MySpotit says that, before the outbreak of COVID-19, their customer base was increasing steadily and the company was at the start of the growth curve. They were planning to bring in the next round of investments.

"I was hiking at the time and the other team members were participating in a hackathon when it all went bang," recalls Kinnas. The business came to a halt. March had been full of bookings and, within a week, they all disappeared.

"We did not give up. We pulled ourselves together and came out with a new product," says Kinnas. They created a remote work subscription that offered the opportunity to choose from a large selection of rooms to work in for one monthly fee. The new product helped them survive through the toughest time. By the end of summer, physical facilities were needed again for meetings, and they refocused on that segment of business — but in a different way.

"COVID-19 gave us great cards. The pandemic is a tragedy, but we got an amazing opportunity," says Kinnas and adds that they've profited from the way that the work process itself has changed.

Where MySpotit once had offered a routine-breaker, now it offered an essential service. A new niche opened up — locations where fast meetings can be held; where those working from home can meet teams and clients easily in nearby spaces provided by MySpotit.

"When Bolt and Uber came onto the market, they simplified processes and the prices started to fall. This applies in our case too. We now also have the opportunity to grow 300 per cent a year. Our plus is simplicity and the price. Long meetings in offices will not disappear, but there are new, simple and affordable meeting spaces," explains Kinnas.

The company is planning to raise 200,000 — 300,000 euros in the next round of investment. The new spaces in question are so-called 'zoom-stations' located a maximum of 15 minutes away from the customer's home. In larger European cities the issue of shortening everyday commute from home to work is becoming ever-more important and it is the aim of MySpotit to cover large cities with its network of rooms to work and meet.

All meeting rooms meet strictly quality standard with access to top level video technology for calls with colleagues, clients or partners. There rarely is equivalent technical capacity working from home, nor the same professional, calm environment. Significantly, homebound workers have a chance to escape their own four walls. Sales people working from home can make their more critical calls in an optimal setting; a B2B product in which they're representing the company in a professional way.

Photo by Nele Suurna



The team of Zelos

MySpotit offers simple and affordable rooms with a standard of high quality internet, automated access and silence. As more people work from home, office spaces will fall vacant and many existing meeting rooms will become available that can be automized.

"Thinking of Bolt again, they include the drivers' own cars as well as company cars," says Kinnas. [He mentions Bolt for good reason, since one of MySpotit's early investors and advisers is **Martin Villig**, co-founder of Bolt.]

"It is a totally new market. The rooms with which we open markets are fully automated (booking and opening), with sound-proof phone call and meeting room cubicles that are situated in various locations throughout the city. We want to be ready in 6-7 months. We have started testing and next spring we will go for it. The Baltic states are our testing ground. From there we will move to Berlin and Boston," says Kinnas. "These are exciting times. We have reason to believe that it will work," he adds.

Team gig work product

An even younger startup is **Zelos**, which brought its product to the market only in the late autumn of 2019. According to the founder and CEO of the company, **Johanna-Mai Riismaa**, the concept grew out of the popular Black Nights Film Festival or PÖFF. One of the supporting pillars of the festival is its broad group of volunteers and Zelos was in charge of managing them. Soon other festivals and events signed up as clients. The summer ahead promised a lot of excitement.

"Then in February it all started to go into the red. Phone calls came in saying that nothing will come of our cooperation this year. There will be no festival," Riismaa recalls.

She noted that running a startup is complicated at the best of times but at least they were in a good position without much to lose. Their turnover was low and they employed few staff, making the fall less painful and salvageable.

At first Zelos proceeded to assist various community initiatives and charities. For example, contact-free food delivery to people in risk groups. Their scope was not limited to Estonia, but focused on how organisers could better manage their volunteers worldwide. Ultimately, their services was taken up in 72 different countries. Word spread organically and no marketing effort was required. Zelos staff members also participated in various digital events assisting activists.

This supported the company until autumn whilst, in the background, work was ongoing to change their main strategy — to provide task management for gig work in a refreshingly different way from competitors. Riismaa explains that, whereas gig work normally is offered to the wider population, they had a new concept. Take for instance a restaurant that usually employed 20 staff, but had to let 15 of them go due to the pandemic. The company might be unable to keep people on regular salary, but still need help from time to time, particularly on weekends when business is brisk.

"There were big changes in working culture and planning. Especially in the service sector. Nobody is secure when you have a lot of staff members. It is a risk. Employing people on an hourly basis is different," explains Riismaa.

But, even if companies keep former employees on their radar, communicating with them and finding staff for the right time may turn out to be a real headache. Stress levels run high, sending repetitive e-mails or calling again and again. In the Zelos technological environment, employers can inform former employees [and others on their books] instantaneously, saying that three staff members are needed for Saturday evening. Responses to their app confirm who can come.



"This makes it easy for companies or recruiting organisations to allocate gigs and for people to accept them," explains Riismaa.

We note that this Zelos tool is meant for the employer who can buy a license and then access the app. It is not a platform supporting a job search in the public sector.

Like MySpotit, Zelos is in the final phase of refining and developing their product in order to introduce a more powerful version next year. Both companies plan to keep their initial direction — renting interesting meeting rooms and managing festival and large event volunteers.

The Black Nights Film Festival which took place in November already made good use of the Zelos solution, highlighting a new reality in the field of service provision as companies employ only a few people who arrange shifts through a technological environment that organises a company's internal talent pool; a system in which employers can post gigs available within the company itself. A service provider does not have to close its doors but can remain open, still servicing customers who appear on Friday and Saturday. With no regular employees, the restaurant easily distributes gigs to ten people two nights of the week.

Zelos plans to expand distribution of its app beyond Estonia, having already translated their Estonian platform and its mobile version into English, indicating a more global ambition. In the near future they'll introduce German and French editions. The English language version has served a much wider purpose already, utilised from Holland to the USA, from Ukraine to Nigeria.

"The main source of income today are special projects where large corporations have contracted their own branded application. They do not download the Zelos app, but we are still behind their version. This is our golden ticket," explains Riismaa.

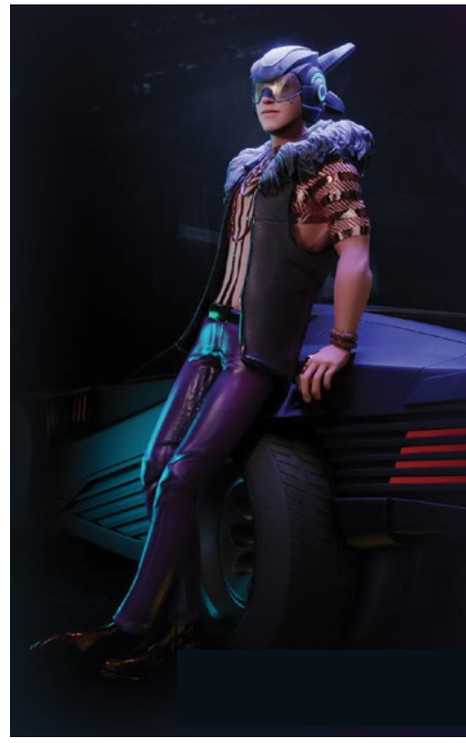
Wolf3D sees pivoting as a vital part of business

By Ronald Liive



Photo by Andri Peetso





An egg-shaped photo-booth with built-in scanner by Wolf3D

Despite his age — a mere twenty-seven — **Timmu Tõke**, the founder and CEO of Wolf3D, probably has more experience in changing the strategy, market focus or production of his company than a lot of older entrepreneurs do. In the past six years he has made so many pivots that it's a challenge to count them all.

In an interview with *Life in Estonia* Tõke admitted that his largest fear as an entrepreneur is to maintain a steady cash flow without depleting the full potential of the company and his personal talent. From observing his peers he recognises that founders sometimes believe too much of their own story; so much so that it's hard for them to see reality.

From one idea to another

Pivoting is something that a company needs to undertake when they realise that the current product or service is not meeting the needs of the market. Pivoting can also occur when the organisation wants to grow faster. Tõke's company is an example of both. At first Wolf3D was a company that offered 3D printing as a service.

"We started with the belief that everything related to 3D is important and will become more of a consumer product. We printed objects for the medical and industrial industry," explains Tõke.

After that the company decided to move on by building a body scanner that consisted of about 100 DSLR cameras. The scanner photographed a person from different angles and then printed a figurine of them in 3D. Capitalising upon this experience, the organisation's founder ventured into the software business.

"At the time Facebook had just bought Oculus, the company behind virtual reality (VR) headsets. That gave a boost to VR in general and we realised that 3D scans of people and their 3D avatars will become important. We moved on into VR by making a solution for people to create a lifelike avatar of themselves for VR," says Tõke.

To make that a possibility, Wolf3D developed an egg-shaped photo-booth with built-in scanners. The booths were made available around the world, scanning tens of thousands of people.

People don't want to be themselves in the online world

It took Tõke and the team a while to find out that people are not keen on using lifelike avatars in VR games or other applications.
"People don't want to be themselves in the online world. They want to be a better version of themselves online. Skinnier, taller or dressed differently," states the CEO.

He thinks that people look at creating an avatar in a similar way to creating a social media profile. Those profiles and the contents of it are mostly curated, exemplifying the cream of the crop. Only the best angles, only the funniest and happiest moments are included. In a shooting game players probably want to look like a mercenary, while in a formal meeting they would ditch that attire for something more refined.

"During the first years we didn't understand who we were and what we were doing. We were like dudes from nowhere. We weren't methodical with our approach. We didn't even consider ourselves as a startup. Back then our thinking was that it would be easy to start out with offering a 3D printing service."

Moving from a hardware to a software business was simultaneously difficult and simple. The difficulty was in letting go of the physical stuff the company had built. Then again, operating just in software was easier and more fun.



Wolf3D team

"Our goal was to find a product that we can offer. We always thought about realising the idea to see what would happen with it. If it didn't stick we moved on and tested out another idea. The last four years we have been methodical in our progress."

Tõke emphasises that every pivot the company has undertaken was vital. One of the greatest pivots took place only a month after raising around 700,000 euros from investors with their previous idea. And since that pivot there have been many more.

As for an avatar that is not so lifelike, Wolf3D does not use lots of cameras or scanners but pivoted again to offer a similar user experience with far fewer photos. Because of that they moved on to offer an avatar creation that was based on 15 views of a person. Right now they offer avatar creation tools with just one selfie. Remarkably, the last product they built is being used by Huawei, HTC, H&M, Verizon, Vodafone and Tencent.

Making an avatar from just one selfie is possible because of the previous knowledge gathered during the photo-booth adventure. Wolf3D has managed to build a deep learning solution that, based on a 2D selfie, knows what a 3D scan of a person would look like. The avatar needs to be adjusted to the environment that it is used in. For example some of the games use animated-looking avatars.

Wolf3D is pivoting yet again

Although clients bring in a steady stream of cash and the company is doing quite well financially, Tõke wants to offer a product that expands their market 10 to 100 times and, as of the writing of this article, Wolf3D is in the progress of yet another pivot. The majority of the pivots Wolf3D has undertaken constitute a development of previous ideas, and Tõke believes that all of them have been necessary. Their next product is an avatar that players can take from one game [or Zoom or any other online meeting or concert] to another. According to Tõke, their latest idea has already about 27 partners eager to use it.
"We are focusing on the business-to-business side. Thanks to those deals, the end users will follow. Our aim is to change our field."

Talking about other entrepreneurs and startups Tõke says that a lot of them have not pivoted at the right time. He has seen how founders fall in love with the original idea or product and become blinded by potential signs that highlight the need to adjust.

"As a founder myself I have grown to understand [how] to look at the signs objectively. You have to be a realist in what works and what doesn't. Don't drink your own Kool-Aid as the saying goes. At the same time you need to be an ultimate optimist."

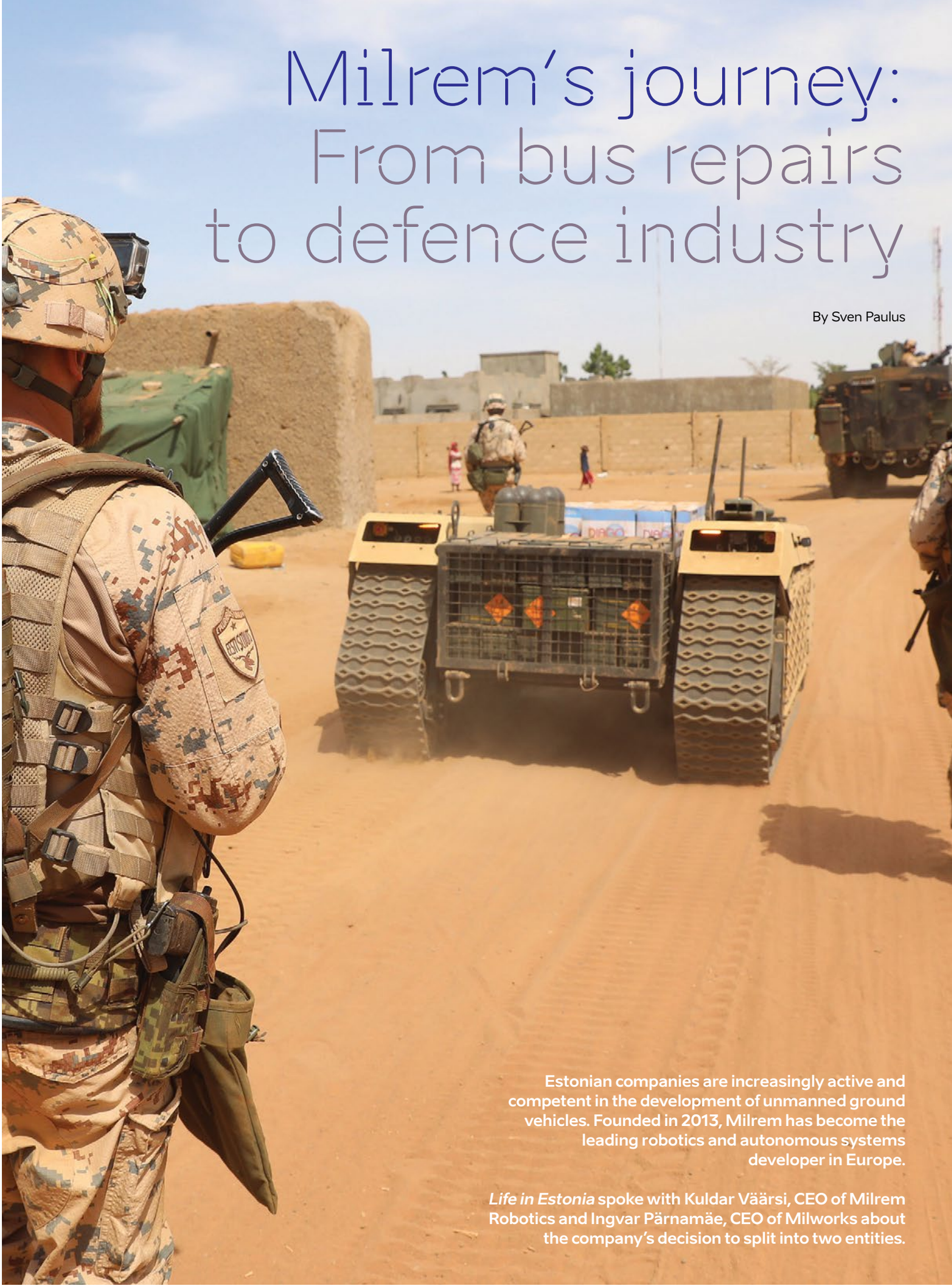
He sees that founders are naturally-optimistic people but sometimes believe their own stories too much without seeing everything else that's going on.

"Myself, I'm mostly afraid of becoming a zombie-like person. That I have found something where the company makes millions of euros to survive but you waste five to ten years of your life on the idea without using the full potential of the company and my personal talent. Getting out of that status is the hardest. If the company's runway becomes shorter and the idea dies, then it's okay and you can start working on another idea. The hardest is to pivot while you have a working solution that does not have the potential to grow bigger."

At the moment, Wolf3D employs 20 people from nine different countries. Although the approach and the product have changed over the years, the main goal has been the same: to create avatars of every person in the world.

Milrem's journey: From bus repairs to defence industry

By Sven Paulus



Estonian companies are increasingly active and competent in the development of unmanned ground vehicles. Founded in 2013, Milrem has become the leading robotics and autonomous systems developer in Europe.

Life in Estonia **spoke with Kuldar Väärsi, CEO of Milrem Robotics and Ingvar Pärnamäe, CEO of Milworks about the company's decision to split into two entities.**

Photo by Hendrik Osula



Milworks



Photo by Milrem Robotics



Kuldar Väärsi

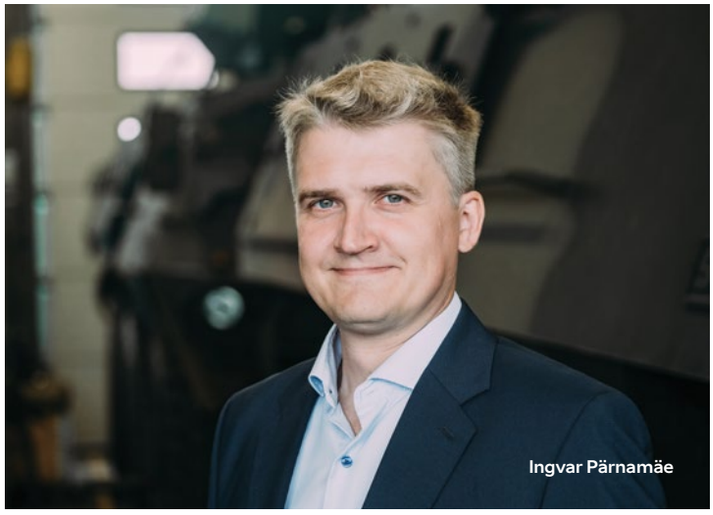

Ingvar Pärnamäe

Photo by Aron Urb

How did Milrem get started?

Kuldar Väärsi (KV): It all began when the bus company SEBE introduced new buses on the Tallinn-Tartu route. This significantly reduced demand for repair services. Hence we were faced with the question of whether to close down some repair shops or to find a new line of activity for them. At the same time, the Ministry of Defence was actively searching for a private sector contractor for the repair and maintenance of their heavy machinery in order to increase the security of provision and the availability of services. The ministry also wanted to develop the national defence industry.

We won the public procurement [contract] for the repair and maintenance services provision of PASI XA armoured fighting vehicles. This was the beginning of our activities in the defence industry and we founded the company — **Milrem** — which additionally began to develop unmanned ground vehicles. The development work began in the autumn of 2014 and already in September 2015 we presented our Tracked Hybrid Modular Infantry System or **THeMIS** in London. In 2017, we split the company into two. **Milworks** focuses on repairs and maintenance and **Milrem Robotics** on robotics.

How many repair shops does Milworks have and what exactly is repaired there?

Ingvar Pärnamäe (IP): Currently we have workshops in Võru, Tapa and Tallinn. For quite some time already Milworks is not just a repair company but participates in more complex rebuilding and overhaul projects, digitalisation and projects requiring engineering know-how. It is our ambition to offer a full maintenance service in the life-cycle of military vehicles and weapon systems.

Milrem Robotics produces unmanned vehicles for both the civil and military fields. What has your development work been like?

KV: In the military field we started off with a slow (although quick enough to follow a unit on foot) and small machine — THeMIS, which drives 20 km/h and weighs 1.6 tons. On the basis of the same technology we developed the product **Multiscope UGV** which is meant for civilian purposes such as the fire and rescue services, mining and forestry. We are about to complete a military vehicle **Type-X RCV** prototype, which drives up to 80 km/h and weighs 12 tons. This armoured vehicle is meant as support for mechanised units.



Photo by Milrem Robotics



Multiscope UGV

If you divide our work into three levels, we first develop robotics platforms which include THeMIS, Type-X and Multiscope. On the second level are intelligent functions or autonomy machines which are capable of fulfilling tasks on their own in an off-road environment.

Thirdly we are increasingly working on systems integration. We do not just offer our customers a machine, but we solve a capability gap problem for them. Our next batch of vehicles is going to the Netherlands and those machines are equipped with weapon systems, shot detection, and command and control systems.

Hence we are increasingly a software development company. Today we work in Tallinn and Tartu and there has been a small engineering office in Sweden for the last two years. Recently we founded a company in Finland and we are making plans to enter the Netherlands. On one hand we need to get closer to our customers, on the other hand we want to bring in know-how which doesn't exist in Estonia from abroad.

IP: It is pivotal to keep international competence in mind, because it is the only chance to increase new industrial capabilities in Estonia. The majority shareholder of Milworks is Patria, the largest company in the Finnish defence industry, and through them we also participate in Scandinavian industrial networks.

Milrem's strategy is to be the robotics market leader in Europe. How do you plan to achieve this?

KV: I think we already are the market leader in robotics in Europe because THeMIS is the most sold vehicle in its size category. We are represented in nine countries, seven of which are NATO members and, hopefully, we will enter two more countries this year. Our main clients are the Netherlands, Norway and the USA. It is to our advantage that we brought our product to the market earlier than others. Even in 2014-15 we were considered "weirdoes" and asked why we were doing this and who needs it. Today the competition has increased.

Our advantage is that we sell already a fifth generation vehicle and we have come up with solutions which worked well also in the extremely complicated conditions in Mali for an entire year. Also our systems have proven their quality with a very demanding client in Holland. In order to be successful in the market, we need to invest a lot in sales activity and be extremely active, not to say aggressive. We also need to closely cooperate with other potential partners in different European countries and to be able to offer complete solutions.



Milrem Type-X

What are the advantages of your product in comparison to unmanned vehicles created by your competitors?

KV: In terms of technological advantages, our vehicle is designed as an electric-hybrid. Many competitors only have electricity-based vehicles, which is problematic in military use because there are not many power outlets in the forest. Therefore, the diesel generator is really advantageous. Secondly, we have a completely new and innovative approach to the architecture of the vehicle, because the entire technical unit is installed into the sides of the vehicle, leaving the central platform empty. I think that to date we are the UGV platform with the most integrated weapons systems in the world bearing our name.

In terms of operational reliability, our vehicles have driven many kilometres and worked for many hours both at the hands of our clients, as well as in tests carried out by us. In Mali, THeMIS drove over a 1000 kilometres per year whilst working for Operation Barkhane. We have nine clients in the world with whom we collaborate on product development and tactical use. Therefore the information base for making decisions is as broad as possible.

What is your cooperation with universities like?

KV: In Estonia and elsewhere the cooperation is quite intense. For example, we just completed a stage of the smart UTV development project with the University of Tartu and TalTech and we are about to start the second stage. We are also collaborating closely with TalTech on various projects, for example on the 6x6 armoured fighting vehicles. With the universities of Helsinki and Aalto we are discussing how to use their know-how in the next stages of development of our autonomous AI. The same issue is being discussed with the University of Eindhoven in the Netherlands.

How has the current Corona crisis influenced the activities of Milrem and Milworks?

IP: It hasn't really impacted us very much, because the Defence Forces are working in any situation. We are also continuing to work on future procurements and wish to be a stable partner for the Defence Forces.

KV: Milrem has indeed felt the impact. As our customers are outside Estonia, interaction has been interrupted in the last half a year. The relations we had already established earlier are still working, but many programmes have been cancelled or postponed. We also had to adjust our budget. It is complicated to test our equipment outside Europe, although we were able to do it in Italy. At the same time we have transferred some training for our Singapore partners onto the online environment.

Photo by Marko Soonurm

Meet Iseauto: innovative and greener last mile transportation

By Sven Paulus



Estonian spin-off company Auve Tech and the University of Tartu are developing a hydrogen-powered self-driving vehicle. Iseauto, an autonomous bus for seven passengers, is expected to be completed by mid-2021. Auve Tech CEO Johannes Mossov shared his ideas about how future traffic is going to look with environmentally friendly, self-driving cars.



Photos by Marko Soonurm

What are the next generation of self-driving vehicles you are developing and how are they superior to the previous generation?

Our first-generation vehicles were largely prototypes to test the maturity and capabilities of various technologies. In the case of second-generation vehicles, we have placed a great deal of emphasis on ensuring safety and autonomy. We want to reach the level where we bring the safety person out of the vehicle to the control room, so that the vehicle can be controlled remotely. The purpose of our self-driving vehicle is to fill a gap in so-called 'last mile transport,' which is not covered by public transport infrastructure or where smaller vehicles are needed for shorter routes.

What makes a hydrogen car special and what are its benefits?

The use of a hydrogen fuel cell provides the advantage of very fast charging and also eliminates the need to use additional vehicles at the time of loading, which would increase the cost of the service. At the moment, we have two prototypes: the hydrogen fuel vehicle is developed in cooperation with the University of Tartu. At the same time, we have made a prototype solution for a car using supercapacitors with **Skeleton Technologies**. The idea is that this vehicle can be driven 24/7 making use of its extra fast charging capability on-the-go at the bus stops. Supercapacitors will allow us to fully charge the shuttle batteries in 11 seconds. It is meant to solve the problem in airports and other service terminals where the need for continued transportation never ends.

A traditional electric-powered vehicle can operate up to 8 hours, but that may not be enough to do a 12-hour shift. It takes up to a few hours to fully charge the traditional battery pack. That pauses the operation or creates a need to run an additional vehicle. Therefore, in some places in the future, a vehicle running on hydrogen and again on a supercapacitor will be better suited for use.

What is needed for self-driving vehicles to become more widely used?

The most important thing is to reach the level of technical capability where there is no need for a safety person in the vehicle. A real economic advantage arises when it is possible to operate several vehicles at the same time from a control room that could be located anywhere.

It is also important to achieve production capacity that will reduce costs. Once in mass production, the unit price would become much cheaper and the end customer could use it profitably without having to hire an operator. In June this year, our self-driving vehicle was recognised by the Road Administration as a street-legal car, and it is now possible to operate it on Estonian and European roads.

Please describe your cooperation with the University of Tartu?

The cooperation with the University of Tartu arose from the desire to find a real application for the unique solutions developed in the laboratory. Together with the University of Tartu, we'll manufacture a prototype of a self-driving hydrogen vehicle where we combine the hydrogen fuel cells developed and manufactured at the university with a vehicle developed by Auve Tech. For the university, this is a great opportunity for research and we can see whether or not we can get this hydrogen-based system in vehicles on a daily basis. Our hopes are high and things are moving forward at full speed.

And you also cooperate with Tallinn University of Technology?

Auve Tech grew out of a cooperation project with Tallinn University of Technology that started in 2017, within the framework of which the first prototype of a self-driving vehicle was made to celebrate the 100th birthday of the university. Now we are part of a consortium with the



University of Technology in the Horizon 2020 FABULOS project. We are in the last phase of this. Our first vehicle operation in Tallinn's Ülemiste City was a success and our second project in Lamia, Greece is coming to an end before Christmas.

What are the results of tests in Iseauto in Ülemiste City?

We started with test drives in the university's campus and operating in Ülemiste is a valuable experience that has led us to develop rapidly. It is a very difficult route with constant traffic and a changing environment — complex intersections with heavy traffic, many manoeuvres, many different objects and obstacles to watch for, from scooters and bicycles to cats and dogs. In the last three months, we have made a technological leap forward while operating there. At the moment, it is important to go through as difficult situations as possible with the vehicle, so that it is possible to step back from there later. Due to the fact that our development team is also located in Tallinn, it has been a very good opportunity for direct communication between the teams in order to continuously improve the process.

Have you found partners elsewhere? And if so, what is the cooperation about?

The main partners are currently from Finland, Germany and the USA. Much of the cooperation is with operating companies, thanks to which it is possible to involve our vehicles in various international pilot projects in countries whose legislation or day-to-day work we do not yet understand so well. For example, our buses started operating in Tampere, Finland, at the beginning of September under the operating company **Roboride**. We also have technological partnerships with the German company **Pylot**, which offers us the capabilities needed to control a vehicle remotely.





Enn Lust,
Director of the Institute of Chemistry at the University of Tartu, Professor of Physical Chemistry

The aim of the cooperation project between the University of Tartu and Auve Tech is to develop a technology that would enable the use of hydrogen fuel in passenger cars. What is the current status of this project?

When implementing the technology, we have reached medium-sized fuel cells and are assembling 3kW systems from materials made in Tartu. Next year, we also plan to create 5kW systems.

The vehicle should be completed by mid-2021. Are you on schedule?

We are a little ahead of schedule in converting the Iseauto to hydrogen fuel and the results give us hope that the car will already be able to move this year.

What are the biggest challenges of the project?

The biggest challenge is the very large amount of manual work that makes a fuel cell prototype expensive. We try to automate the production of a small series of electrodes as much as we have the resources to do so.

What are the main advantages of a hydrogen cell system?

The main advantage of using fuel cells and hydrogen as fuel is that they do not produce gases that are harmful to human health, such as a mixture of nitrogen oxides, a mixture of sulphur oxides, unreacted heteroaromatic organic compounds and various toxic nanoparticles. In addition, it does not produce carbon dioxide and carbon monoxide, which are so-called greenhouse gases. Thus, the use of hydrogen technology saves both the natural environment and the living environment, which is an even more important problem in densely populated settlements and garden cities (for example, certain areas of Tartu).





Photo by Rasmus Jurkatam

Photo by Marko Soonurm

What kind of feedback have you received for Iseauto so far?

Passenger feedback has been largely positive. However, most uses today are still a one-time exploration, and as this is a very innovative technology that many are experiencing for the first time, the consumer experience is also very entertaining. We are preparing a longer project where the vehicle would become a part of everyday traffic for people. If a customer uses an Iseauto every day to travel their last mile to get home, for example, from a bus stop to their home or office, then we really need this feedback on the overall service.

Feedback from partners and contacts has also been positive so far. They are very surprised that we have been able to complete such a vehicle in such a short time. We have a network of contacts in almost every part of the world so that we can send vehicles there. But here it must be acknowledged that bigger proofs are yet to come, and we are currently working to ensure that.

What is the top priority for Auve Tech at the moment: R&D, sales and exports or something else?

We are currently going through a transition period, where R&D is still a priority. In addition to the alternative drivetrain solutions, we want to develop a modular platform for the vehicle that could be suited for different applications. This way we could provide solutions for not only passenger transportation but also for example parcel and waste transportation. We are also gradually preparing to start placing more emphasis on sales and export, starting from gathering a real-life experience from different environments around the world. To tackle the ambitious expansion plans of getting sustainable transportation solutions into our everyday life, we have been putting together a global expansion team. The team will be led by ex-Prime Minister of Estonia, **Taavi Rõivas**, who will join Auve Tech in early 2021.

This is a very research-intensive undertaking. What new knowledge has the whole enterprise provided?

It is difficult to point them out separately, but we are glad that we have been able to cooperate with various universities and several enthusiastic students. At Tallinn University of Technology, many smaller research papers have been developed from this project. The best fruits of this research have still been the people who have joined our team. Thanks to them, we have very good cooperation with universities.

Today, this preliminary research project has grown into Auve Tech and, from there, into a commercially usable solution. This shows that it is possible to do great things in small Estonia, and we will definitely keep an eye on all research activities, including those that have not grown directly from the Iseauto project. Such a bond in R&D shows that, through cooperating with universities, it is possible to make a very research-intensive and innovative physical machine.

Self-driving vehicles are being developed all over the world, but what are your biggest advantages?

Our strongest trump card has been that we started at the right time. Those who started seven or eight years ago have made insane investments in software and sensory systems. We started exactly three years ago, and by that time, technology and software had become much easier and cheaper to access. The size of the initial investment did not have to be so large that it would be difficult to recoup it later.

If we talk about the vehicle then, in terms of its overall size, we have found exactly the golden path. We have competitors who make much larger self-driving vehicles, but their main disadvantage is that a large car that runs autonomously and slowly is much harder to pass and takes up a lot of space on the road. The size of our vehicle has also made it possible to use it on a larger sidewalk or pedestrian area, where it can move slowly and does not disturb the surrounding pedestrians or cyclists.

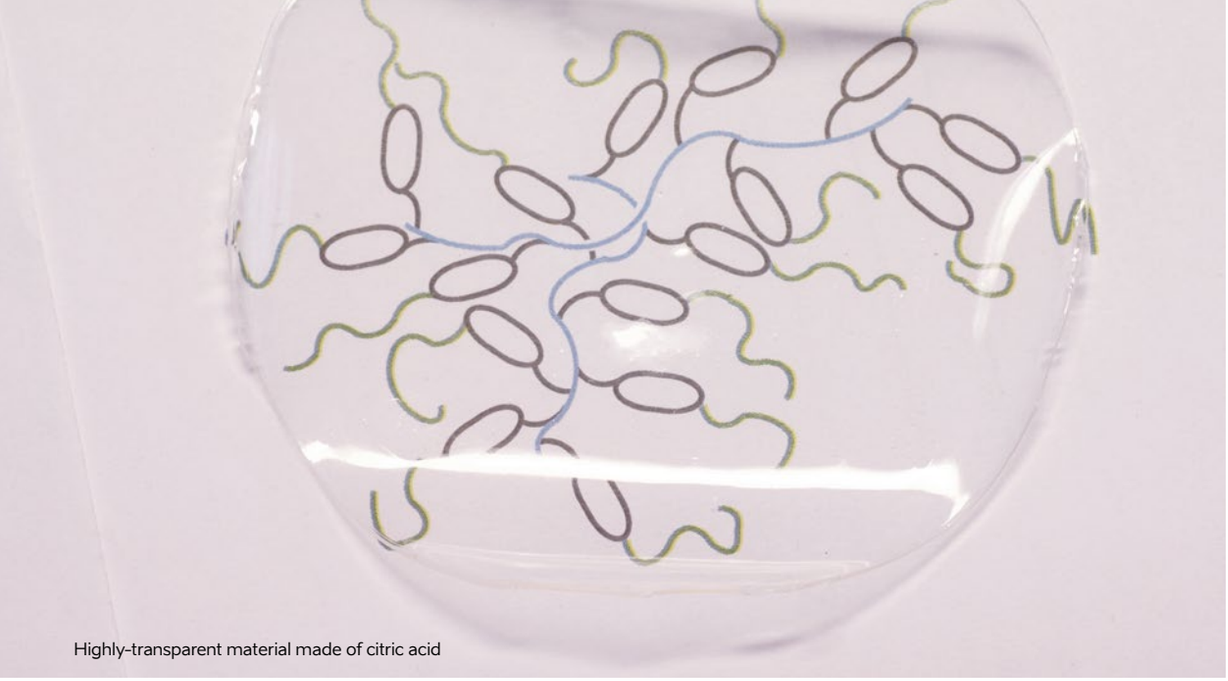
Can biopolymers save us from drowning in plastic?

By Sven Paulus



Did you know that each year 120 kg of synthetic polymers derived from fossil fuels are used, per capita, in developed countries? We are warned that in a couple of decades there will be more plastic than fish in the sea.

Life in Estonia **talked to Lauri Vares, Senior Researcher of Organic Chemistry at the University of Tartu about the ways we can reduce the invasion of plastic and save the planet with bioplastics.**



Highly-transparent material made of citric acid



The analysis of substance structure and purity on the atomic magnetic resonance spectrometre



Samples of various plastic films made from citric acid



What exactly is the field of activity of the international project "BioStyrene" which commenced in 2019?

Due to the fact that currently all plastic is derived from fossil raw materials, we are urgently seeking ways to replace fossil resources with more sustainable ones. It would be ideal to take CO_2 directly from the air and convert it into necessary materials. In that case we would not need the Earth or its resources, but we are currently still learning about this approach and we are not able to execute it yet. The temporary solution then is to use low-quality biomass as raw material.

Therefore you want to produce bioplastics?

Yes, our broader goal is to produce biomass-based plastics. Bioplastic as a term is probably not the best one, because most thermally-processed polymeric materials belong under the general term "plastics." This does not only include plastic bottles or packaging, but also paints and all sorts of surface layers and details used in automobiles which are not metal or ceramic.

Who is involved in the project?

The participants in our Estonian-Russian cross-border project are the St. Petersburg State Forest Technical University and two companies from the St. Petersburg region; the paint producer Vapa and Plastpolymer, which produces plastics based on polystyrene and wants to replace some of the fossil raw materials with lignin. Lignin is one of the components of wood. Another participant from the Estonian side is the Tartu-based company TBD Biodiscovery.

What are suitable raw materials for producing such plastic?

Among other things we use citric acid which is a very widely used chemical. It is also produced from biomass and mostly used as an additive in the food industry. It is found in most beverages, where citric acid gives flavour and regulates acidity. We realised that it is possible to chemically convert it into rigid plastics, which is suitable for high-tech applications.

This means that the plastic maintains its properties and shape at higher temperatures and is easily processible with existing methods and devices used by the plastic industry. A general problem with bio-based plastics is their softness. This means that even at moderate temperatures they tend to lose their shape and become soft. Such plastic is suitable for some applications, but can't be used e.g. to serve hot drinks.

Therefore we use different starting materials or chemicals which can be directly derived from biomass. One of our strategies is to reduce the content of oxygen and the hydrophilicity of biomass. By doing this, we want to make the polymers more rigid so that they can tolerate higher temperatures and it would be easier to industrially process and reuse them.



PhD student Livia Matt observing the experiment carried out in the high-pressure autoclave

To what extent is this approach more environmentally friendly in comparison to plastic produced from oil?

This is something we pay a lot of attention to in our work. The use of bioplastic avoids the use of fossil resources. As a raw material, we are able to use a very low-quality biomass or leftover products which have little use elsewhere. Unfortunately, the life-span of many plastics is very short and a relatively small amount is efficiently recycled. For example, if you burn a package made of fossil raw materials, the CO_2 is immediately released into the atmosphere. Hence it makes no big difference if you use gasoline as a car fuel or produce plastic with a short life-span which you burn later.

What have been the biggest challenges of this project?

A challenge is definitely the price of potential bioplastic. Plastic with good properties tends to be more expensive. But this is no reason to avoid using it because, as production scales grow, the price will rapidly decrease. Secondly, it is evident that people prefer products made of biomass. Also fossil PET plastic which is used to produce widely spread PET bottles or clothing (polyester fabric) was very expensive when it first came onto the market, and it was only used to make niche projects like design bottles. As technology developed rapidly, PET has now become relatively cheap and now there is a bio-based alternative coming — a plastic called PEF.

How easy is it to reprocess a package which is covered with bioplastic?

This is something which requires separate attention. People tend to think that a product made of bioplastic is automatically biodegradable, but this is not necessarily the case. It is quite complicated to create a product which, on the one hand, is strong and durable and, on the other hand, biodegradable. Therefore, our main aim is to make products suitable for reuse or reprocessing. At the same time, when they happen to be disposed of in nature, they are not toxic, do not create microplastic and, after some time, will also decompose. Of course it is really important to reduce the number of products with a short life-span and we need to critically assess if we need so many things.

How much bioplastic is developed in the world and what are the results?

There is a lot of development work going on. Especially in the Western world, larger companies are very active and keep close attention to developments in this field. Bioplastic will definitely be on the market on a larger scale in the near future. We need to keep in mind that bioplastic has been actively developed only in the last five to ten years. There are no large and conceptual obstacles; rather there are attempts to bring down the price with technological innovations. This can change quickly when, for example, fossil raw materials are carbon taxed.

What else could be a raw material for bioplastic? Plastic for example is also made of cannabis?

I think it is not sensible to use agricultural raw materials. The resource should come from leftover products. One very interesting development is the pellet producer **Graanul Invest**'s sugar factory in Imavere, where they utilise wood fractionation technology to make wood sugars and lignin. We collaborate with them on the testing of wood sugars and wood sugar can be made of alder, which is not used that much elsewhere. Also algae are a possible raw material for certain plastics, albeit in our climate we do not have the suitable types of algae.

One of the aims of the project is to use new solutions in large scale industry. When do you plan to achieve this?

I think at some point companies should take over this development. We can create the solution on a laboratory scale and give them recommendations and then proceed to work together with companies. At the moment we are making surface covers which are meant for the paper packages used in food industry, such as coffee cups and pizza boxes. We have tested them in one of the companies and the results are good. The coffee cup covered with our polymer enables [them] to serve hot drinks without problems and, as the first tests show, it is possible to recycle it as paper.

You aim is to save the planet, but what are your hopes of conquering the markets with bioplastic?

Our goal is to create products for use in high-tech applications. In addition to those already mentioned, there are opportunities in the automobile industry where plastics need to be very secure, stable and durable.

Biogen opens a branch in Estonia

By Ann-Marii Nergi



Photo by Jay Fram



Mikko Fernström

Daria Sivovol
CEO, American Chamber of Commerce Estonia

Once we learned that Biogen was considering entering Estonia, we have been truly happy to embrace the company in our business community. We will do everything that we can to assist them in their set up and on-boarding process by offering all necessary information, contacts, access to our Healthcare Committee work and involving them in our policy initiatives.

We are thrilled that such a big and important U.S. healthcare player and neuroscience leader like Biogen has decided to enter Estonia. This is great news. not only for Estonia, but overall for the whole Baltic region. The solutions that this company can bring to our healthcare market are a true breakthrough that could change lives of many people who have Alzheimer's and other neurological diseases.

With its headquarters located in Cambridge, Massachusetts (USA), Biogen is one of the leading biotech companies in the world, focused on developing treatment methods for neurological illnesses. On the 1st of December, Biogen opened a branch in Estonia [as well as in Latvia and Lithuania] which is part of the company's global growth strategy.

According to **Mikko Fernström**, Executive Director of Biogen Estonia, a pan-Baltic office would not have served the purpose. "We want to be closer to patients and partners and it is possible by opening a local office and hiring people locally. Each of the Baltic countries has very different healthcare ecosystems. Being physically present on a country level opens many more possibilities for partnerships," he notes.

Fernström believes that having a presence on a country level will also help to organise medical education and partnership projects with the clinics in Estonia as healthcare is becoming more digital and integrated.

"One thing I am personally very interested to explore in Estonia is to have discussions with local technology startups. I believe there really is something in pharma and startups partnering up and coming up with solutions for example to improve diagnostics or patient care. Startups certainly have a role in bringing new diagnostic tools, improving communications between patients and healthcare providers and improving adherence to treatment; and the Estonian startup sector in digital solutions is very vibrant. And, of course, Estonia has a high level of digital health. For example, the University of Tartu is one of the European frontrunners in biobank space. I am sure this will interest also our international operations," says Fernström.

He mentions an example of Finland where Biogen, among some other international pharma companies, partnered-up with the Finnish biobanks on a global scale research project with multi-million dollar investments. This project is known as the Finngen project, and Fernström is certain that this project would never have come to life without active discussion between public and private sectors and different players in the healthcare field.

The company has been a pioneer in developing treatment methods for such illnesses as Sclerosis Multiplex (SM) and Spinal Muscular Atrophy (SMA) and their research pipeline is rich with new medicines being investigated for illnesses like Parkinson's, Alzheimer's and ALS. Some of their new medicines are already in the marketing authorisation process. Biogen's turnover in 2019 was 14.4 billion US dollars, and the company

Riho Tapfer
Director, The Association of Pharmaceutical Manufacturers in Estonia

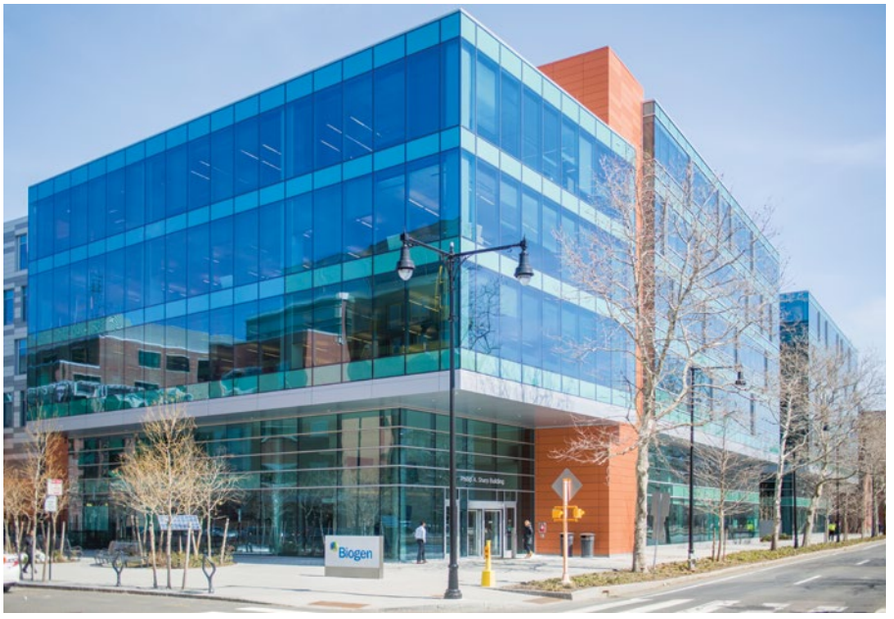
Biogen is a leading conductor of clinical trials for neurodegenerative illnesses in the world. Through research and development activity (of which clinical trials are a part) new, innovative medicines and treatment methods are born. Biogen entering Estonia will definitely bring about very positive developments in the field of clinical trials including new trials, new top-level knowledge and extensive experience. Through clinical trials, Biogen Estonia will invest significantly in the Estonian healthcare system in terms of know-how and other resources. In the end it is the patients who will benefit. Considering the small size of Estonia, we are extremely pleased that a leading global biotech company has arrived in Estonia.



Photo by Ben Bocko

Photos by Jay Fram





invested 2.3 billion US dollars in RDA, carrying out over 170 clinical trials with over 30,000 patients. This year Biogen was recognised as the most sustainable biotechnology company by the Dow Jones Indices.

The company also plans to explore opportunities to start clinical trials in Estonia. "The standard of clinics and the knowledge of clinicians in Estonia is very high and therefore Estonia would be a very good place for clinical trials. My commitment is to take this forward with our global clinical trials team so that we could start Biogen trials here," says Fernström. "I believe that as we start operations in Estonia independently, we will have opportunities to discuss with many local stakeholders on potential partnerships. We see this everywhere we operate. Silos between sectors are coming down and value is created through cross sector partnerships and public-private partnerships.

A specific field Biogen wants to focus on in Estonia is the brain health agenda. Brain diseases place a huge human and economic burden on Estonia as well as other western countries with a rapidly ageing population. One third of the total healthcare costs in Europe are due to brain diseases. "We want to be part of the solution by bringing treatments for difficult to treat brain conditions and also by partnering up with different organisations to build a coalition to get brain diseases the attention they need," Fernström explained. "There is a lot to do, which could even prevent some of the brain diseases progressing."

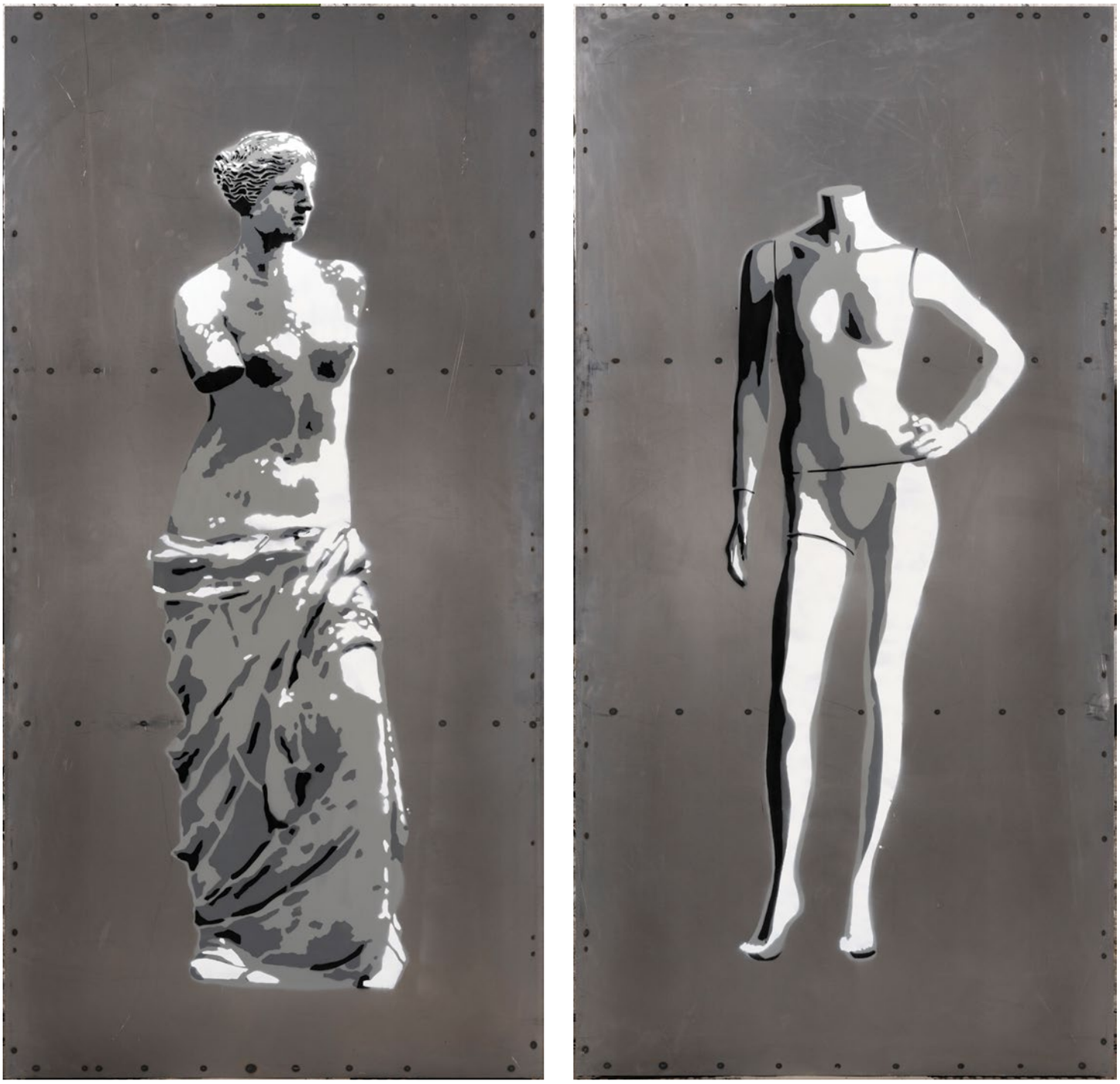
Currently Biogen is not revealing the size of its investment in Estonia, but the grand plans indicate that opening a local branch is just the beginning. Fernström has a lot of praise for the speed of administrative processes in Estonia. The entire process began in early 2020 and he commented, "We felt welcome in Estonia from the very first discussions. The Estonian administration has gone fully-digital and that made things very easy — especially during Corona. I think the rest of Western Europe still has lots to learn from Estonia in terms of running the administration efficiently."

Biogen Estonia has been accepted into the Association of Pharmaceutical Manufacturers in Estonia and is a gold member of the American Chamber of Commerce.

Portfolio
Edward von Lõngus



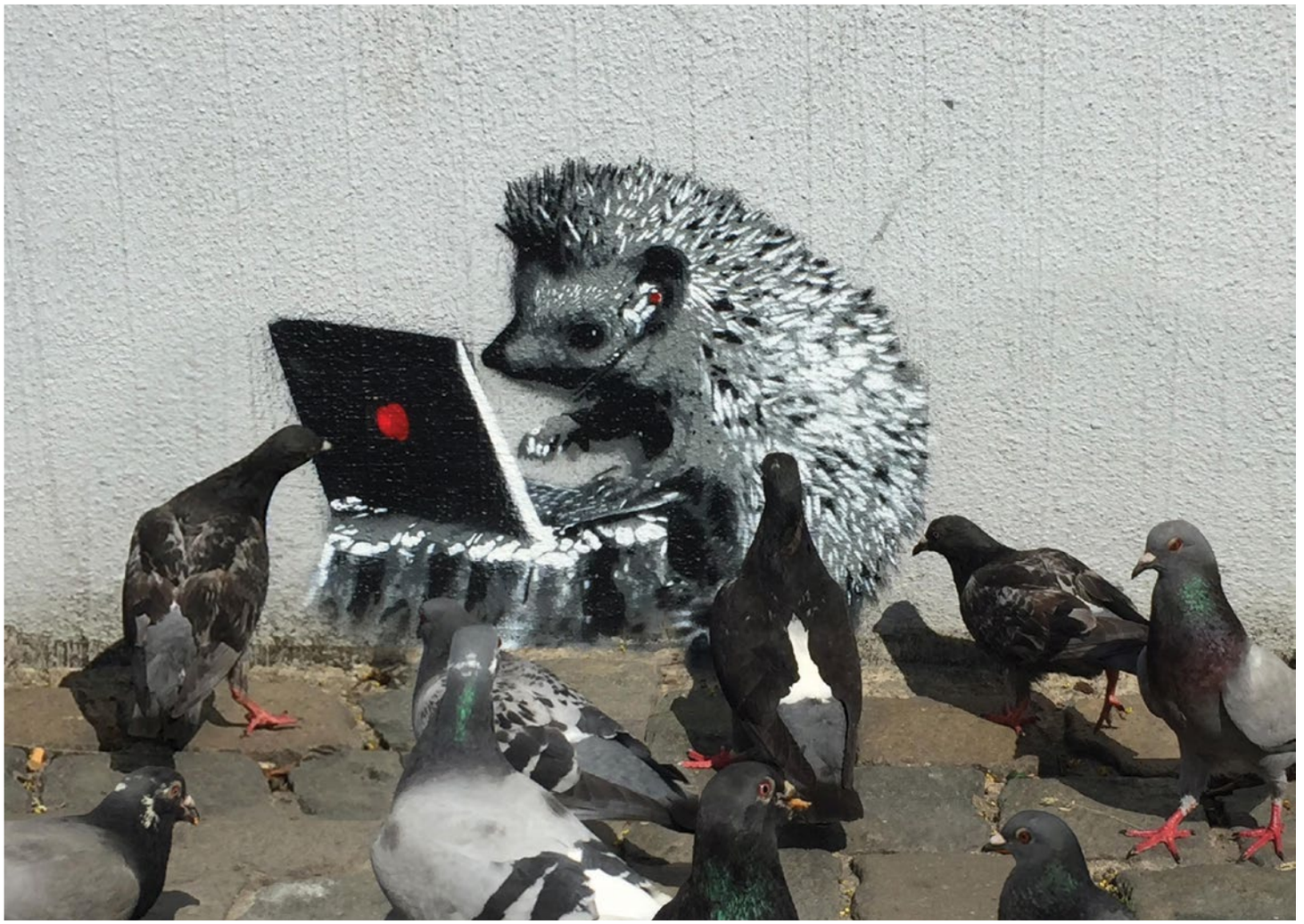
Cameraman Kõps in Mushroomland, 2020



Democratos and Capitalismos, 2020



Drone girl, 2019



Hedgehog, 2015



Kalevipoeg 3.0, 2015



Hedgehog in the smog, 2020



The Naked Emperor, 2015



Rain dance, 2018

Sole of Boot and Dance of Death signs of street art in Estonia and Europe

By Triinu Soikmets

By Triinu Soikmets

Hedgehog, otherwise known as the friend of our national epic hero Kalevipoeg and created by the founding father of Estonian literature Friedrich Reinhold Kreutzwald; the Naked Emperor created by the Danish fairytale author Hans Christian Andersen as well as local cartoon characters Mossbeard and Cameraman Kõps and their British companions Teletubbies, are just some of the figures who have acquired a new shape and significance through the work of stencil art star Edward von Lõngus, thereby conquering the streets of Estonia and Europe.

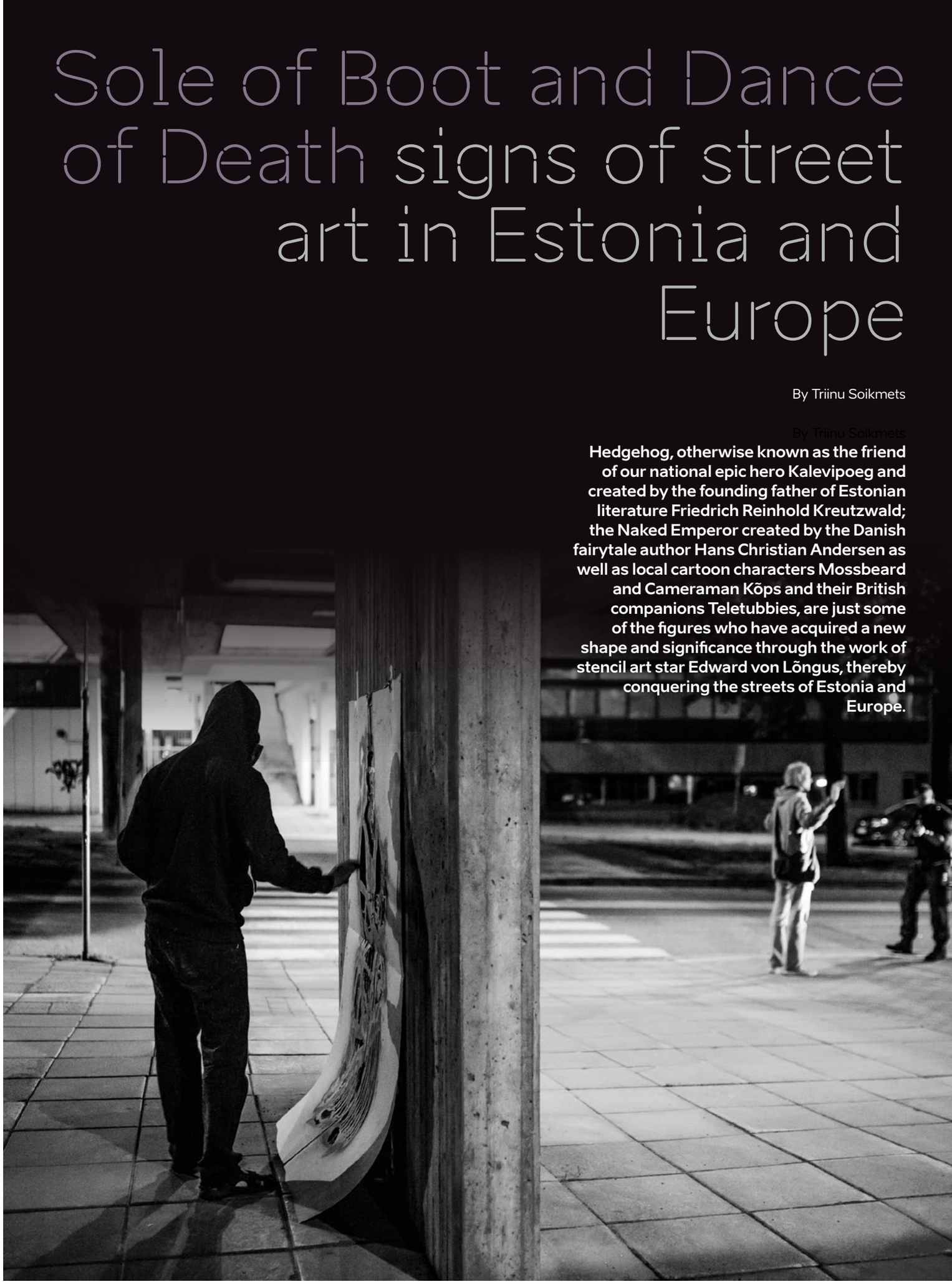


Photo by Ruudu Rahumaru







Dance of Death with Endel aka Endel with a stick, 2017





Drone girl in London, 2018

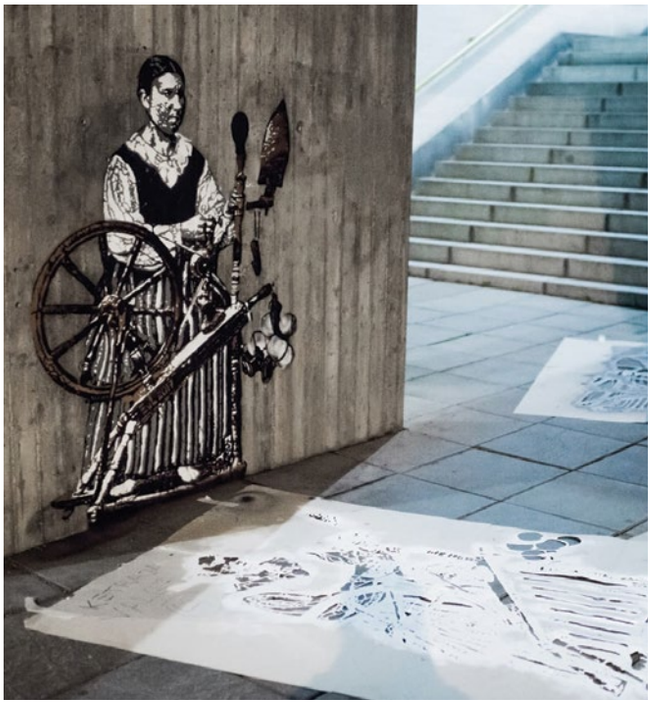
Security cameras, batons, handcuffs and firearms, laptops, selfie-sticks and drones, shopping carts and coffins — these are the accessories of the characters in question, making reference to the peculiarities of today's society and consumerism that rely on our deepest instincts i.e. the subconscious need for power and control, information and connection, self-admiration as well as fear of death. They do so by mere suggestion, leaving space for the viewer [whether conscious art consumer or random onlooker] to enjoy their own fantasy and interpretation. **Edward von Lõngus**' socially critical art does indeed point the finger but in a playful, rather than a moralising, manner. Tongue-in-cheek, he juggles images from the same system he criticises; an artist who also wants to sell us something — embodying the very idea of the instincts he purports to dislike.

It is in the nature of street art that you come across it as a random passer-by or in a dark alleyway, but increasingly, there is an effort to bring it indoors through representatives and dealers of the art world, as well as through art collectors. Lõngus' works can be found both next to the rubbish bin on the exterior wall of a museum as well as in its exhibition hall. Art gourmands are hunting his pieces in clean and well-lit auction houses. Those who cannot afford auction prices can always purchase a T-shirt with one of his motifs online and strike a few poses for social media. In this way the artist's observations about society establish themselves.

Edward von Lõngus has named cave painters, Renaissance masters and pop-artists among his role models, all of them connected through a creative spirit that moves through time. His own career began with pasting full-scale black-and-white printouts of human figures onto exterior walls where they didn't last long in the weather. Soon after, in 2008, a boot sole pattern emerged in the same arena. His first stencil — a type of graffiti in which the image is created using a cut-out template and spray paint — enabled the artist to work rapidly and efficiently. Efficiency and speed are essential for street artists, as it allows them to leave a recognisable identification mark in as many places as possible while avoiding being caught by law enforcement.

However, the police have intervened in Lõngus' creative process — even when his grafitti was green-lit by authorities and his project (R)estart













Esteemed businessman in Tallinn, 2015

Maali the Spinner in Rome, 2018

Reality selected to mark Estonia's presidency of the Council of the EU in 2017, the Republic's 100th anniversary celebrations in 2018 and the artist's tenth year of activity. Throughout this project, one that reached eleven capital cities of Europe, Lõngus' witty characters were inspired by ancient Estonians as well as scenes from the "Dance of Death" (Danse Macabre) by the famous Gothic artist Bernt Notke who worked in the Baltic region.

While literally leaving his mark in many different cities, dealing with police was the rule rather than an exception for Lõngus. In Rome, for example, they questioned his permission to paint graffiti and the artistic team was left on the streets at night for hours, awaiting the conclusion of official procedures. It is worth mentioning that the very same project won the cultural prize of the Ministry of Foreign Affairs. Lõngus has also received the title of Honorary Cultural Ambassador of Tartu twice.

"In Rome, we stayed in a strange basement apartment. Lõngus left his stencil block in the corridor and when he went to check in the morning, it was gone," **Kadri Uus**, one of the coordinators of the project recalls regarding another incident in the ancient city.

"Later it was found next to the garbage containers in the yard. Apparently someone thought it was trash and carried the 20 kg package to the container. Considering the fact that the design and cutting out of the stencil is the most time- and labour-intense part of street art, we experienced a pretty scary moment thinking it was all gone."

Kadri also remembers how they came upon a Teufelsberg street art festival in Berlin outside the official part of the project.

"At first the organisers reluctantly gave Lõngus a little spot behind a corner, but when they saw what he was doing, they immediately offered him more walls."

Another one of the coordinators and the curator of the artist's last retrospective exhibition, **Andra Orn**, recalled how they participated in a local street art festival in Helsinki. The Hedgehog [who is mentioned at the top of this article and also the artist's personal favourite], was depicted working with his laptop on a tree stump and won second place in online voting organised by the Finnish newspaper *Helsingin Sanomat*.



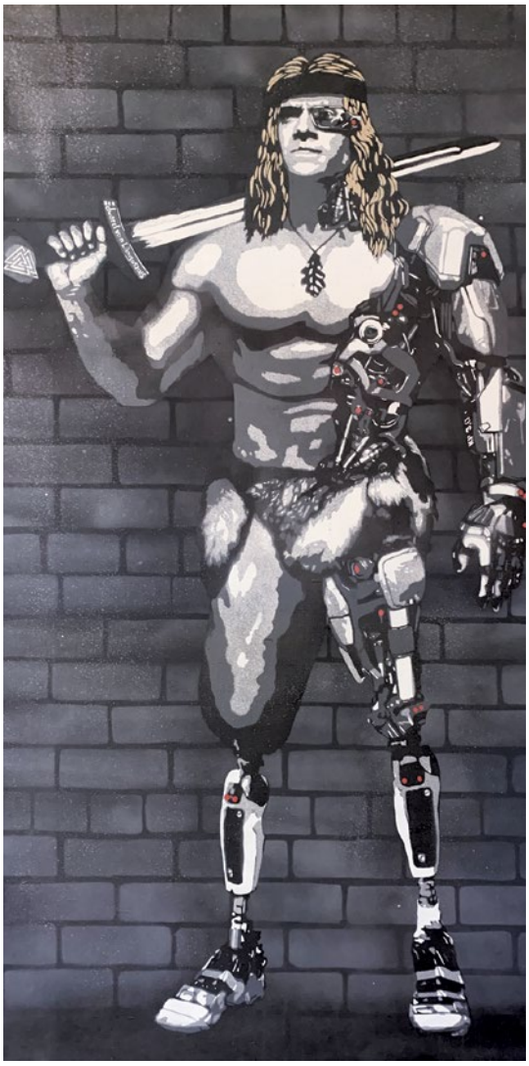
Cannabeard & Witch Hunter, 2014



Die, dog, 2013

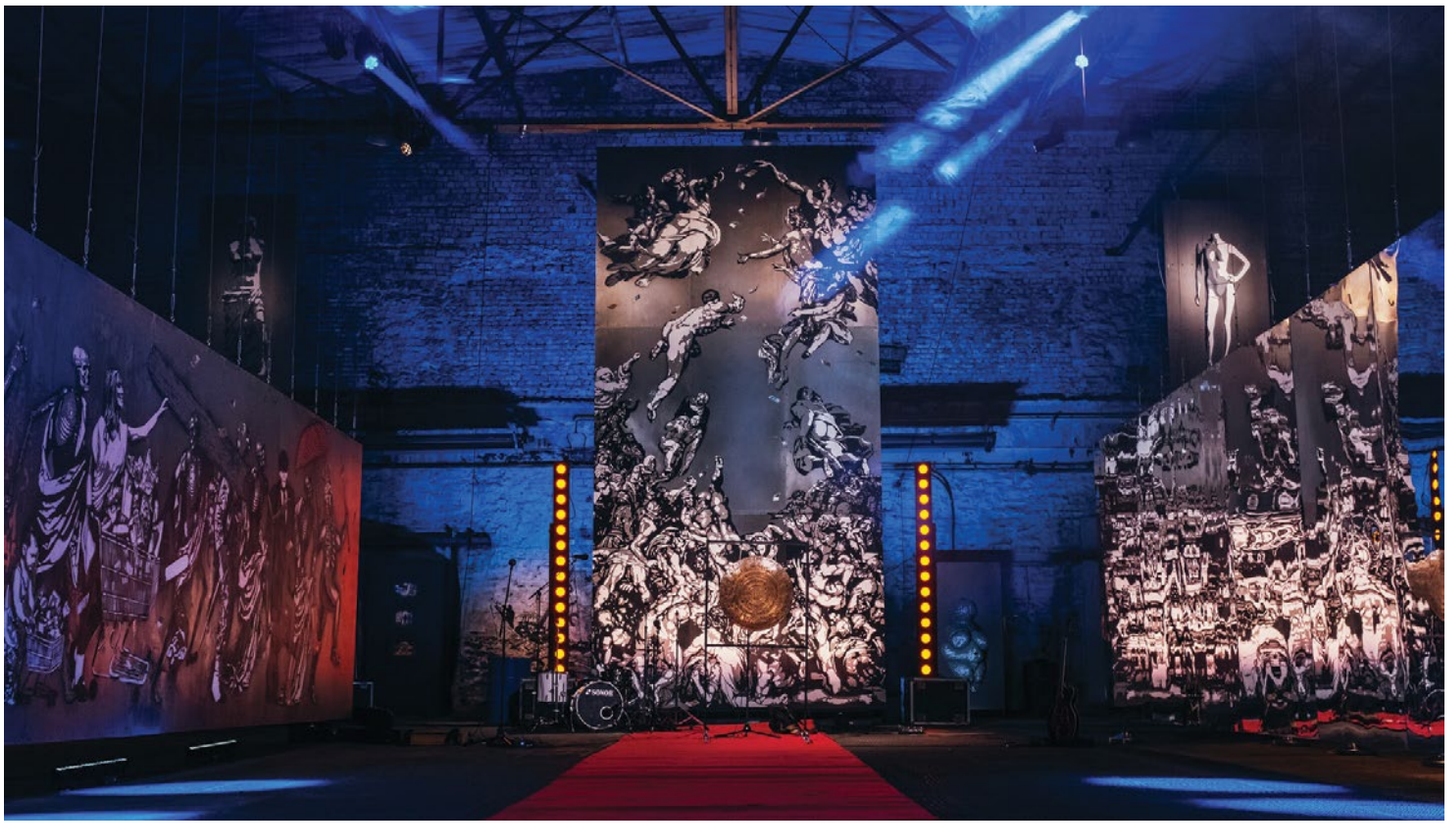
The exhibition **"Doomsday Cathedral"**, which took place in the Tallinn Biennale last summer served both as a retrospective and as a separate spatial experience. The elements of "The Dance of Death," which until then had been only exhibited in parts, were now joined into a parade of steel plates reaching over 12 metres in length and weighing more than half a ton. Above the plates hung the 'doomsday clock' and in front 'the mirror of truth,' all crowned by a remix of Michelangelo's fresco in the Sistine Chapel. The exhibition space — a former factory of nuclear electricity equipment — and the satellite exposition in a shopping centre added some spin to the dance. Where else could one address both destruction and crazy consumerism more vividly than in the spaces which produce it?

Various figures and shapes from cultural history were cut and pasted together to dance in the cathedral — Venuses by Willendorf and de Milo together with shop display mannequins; Estonian author Oskar Luts with Quentin Tarantino; Leonardo da Vinci with Stanley Kubrick. Eduard Wiiralt's "Absinth Drinkers" from the 1930s Paris were transformed into today's 'joint smokers' and the socialist-realistic composition of national grain policy merged with a capitalist version of national forestry policy.





Pot smokers, 2018







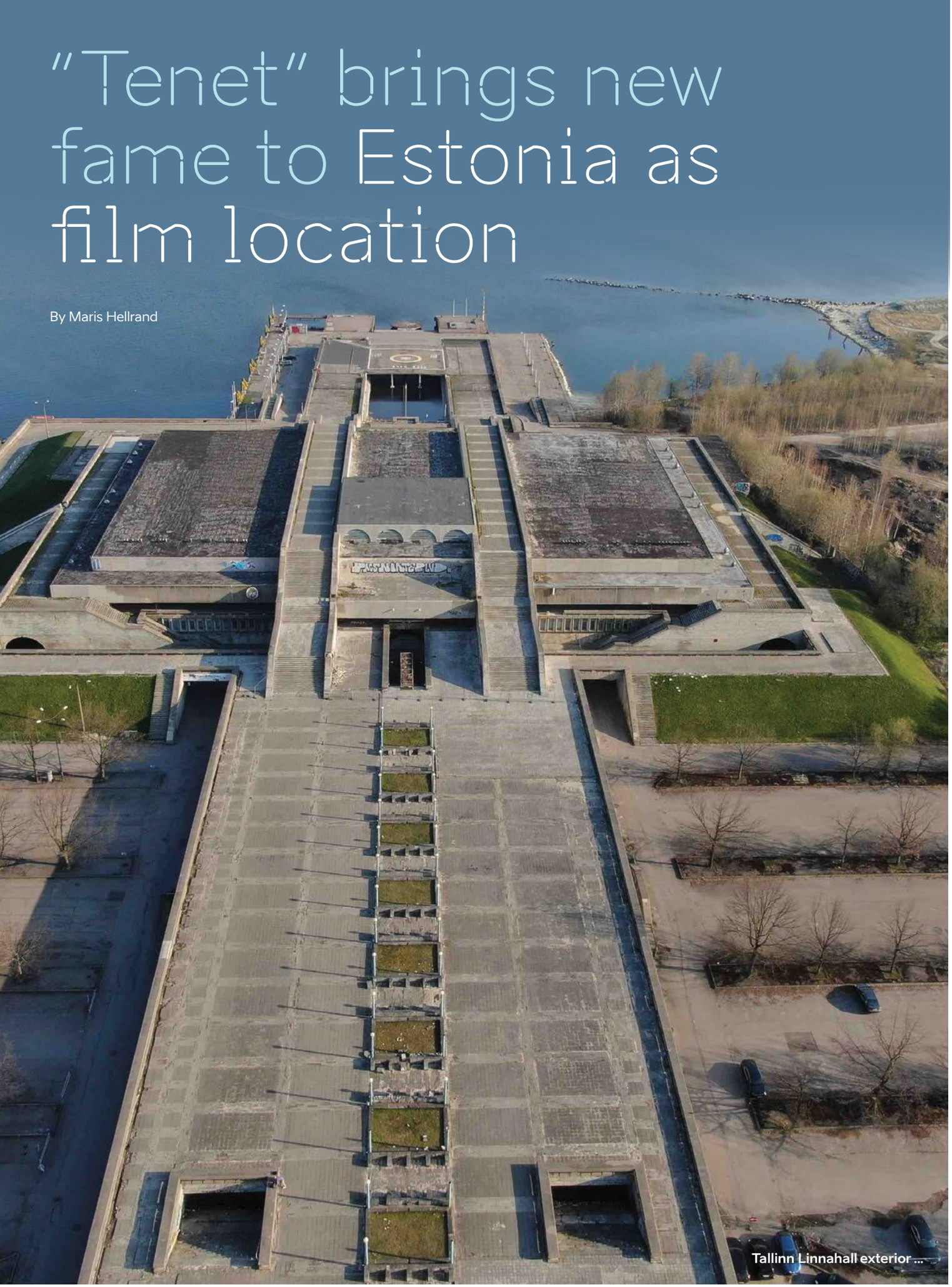
In addition, posters from the Cold War era were displayed accompanied by Lõngus' rhetorical question: "If a million apes equipped with typewriters are able to re-write all of the books by Shakespeare by pressing random buttons over a long period of time, what can 8 billion apes do, given with enough time, with 10,000 active nuclear weapons?" Although the 'infinite monkey theorem' which inspired the question is fortunately just a mathematical construct with zero probability of coming true, it is nonetheless thought-provoking.

The exhibition "Doomsday Cathedral", now on virtual tour on the contemporary art platform **noar.eu** and accompanied by **Taavi Tulev**'s soundscapes, may give rise to similar reflections. And it almost goes without saying that the virtual tour provides a great tool for teachers to bring arts closer to their students. As Andra explains: "It could encourage everybody to discover the wider art world."

By the way, as you may have guessed, the name Edward von Lõngus (meaning 'slouch' in English) is a pseudonym and his true identity a well-kept secret known to few others.

"Tenet" brings new fame to Estonia as film location

By Maris Hellrand



Tallinn Linnahall exterior ...



Photos by Allfilm



... and interior

Learn more about the key spots of the Hollywwod action-movie "Tenet" filmed in Tallinn, brought to you by James Samuel York, Director of US Business & Innovation for Enterprise Estonia

Entering the dark brown interior of a gigantic, dimly-lit hall, detecting the distinct smell of a bygone era, and hearing the sound of rainwater dripping through the structure, feels a lot like time travel. A mysterious, vintage atmosphere makes this place the perfect location for a sci-fi movie that lets time flow in both directions, and offers a fair share of brain gymnastics to the viewers — some of the great features of "Tenet" by **Christopher Nolan**.

Re-discover the city

More than 3000 people have attended the **Tallinn Linnahall** tours and talks by the **Estonian Architecture Centre** since August to get a first-hand glimpse of the most impressive piece of Soviet monumental architecture in Tallinn and the film-set of a Hollywood blockbuster. This massive amphitheatre-style hall, with seats for 4200 people, stood empty for a decade, but has become a new attraction for architecture enthusiasts and film fans. The multifunctional space was built for the 1980 Moscow Olympics when its sailing regatta competition took place in Tallinn.

"Tenet's" opening scene was filmed at Linnahall. And under normal circumstances, the release of this Hollywood sci-fi action movie would have triggered a fan pilgrimage to this and every location. But in 2020, hopes for a new tourist attraction are overshadowed by the Covid-19 pandemic that has hit international travel severely. Fortunately, locals and some tourists were able to visit Tenet locations over the summer months and the Tallinn tourism office has compiled a special Tenet tourism route (see: www.visittallinn.ee/eng/visitor/ideas-tips/tips-and-guides/tenet-filming-locations).

Not only did star director Christopher Nolan shoot in Tallinn, but part of the story actually took place in the Estonian capital. For instance, a scene set at the **Maarjamäe Second World War Memorial** — yet another piece of Soviet era architecture that has been neglected over the last decades, mainly due to its controversial historic interpretation. Architecture historian Carl-Dag Ligge points out the high architectural value of the memorial complex and hopes for a re-interpretation. Perhaps a prominent role in film will help locals to view the place from a new perspective.

The highway cut through limestone in **Lasnamäe** — Tallinn's largest concrete block suburb — has become an attraction too, in homage to neck-breaking and time-defying stunts that were shot there in summer 2019. And, of course, anyone can hop a tram ride like **John David Washington** and **Robert Pattinson,** who shot a scene in centre city.

Kumu Art Museum is cast as a fictional "Oslo freeport" — the transit depot for art collectors and the mysterious time-machine. And railway tracks near **Telliskivi** district served as a backdrop to some violent scenes; belying the fact Telliskivi Creative City was a favourite hangout of the cast during the two-month shoot in Tallinn.



Nele Paves

Photo by Virge Viertek

Major breakthrough for Estonia as filming location

"Tenet", with a total budget of 205 million USD, is doubtless the largest movie project to film (partly) in Estonia. The amount spent here can't be disclosed, but the expenditure provided employment for hundreds of local people and technical staff; furnished significant income to the accommodation, service and transport sectors, and gave a financial boost to restaurants and retail as well.

This production now stands as the greatest achievement of the cash rebate scheme, established by **Film Estonia**, **Estonian Film Institute** and Ministry of Culture in 2016; a programme that allows foreign film productions to reclaim part of their budget spent in Estonia. **Nele Paves**, Film Commissioner of Film Estonia, points out that these schemes are widespread throughout the world and encourage production companies to choose particular international locations and partners.

Paves noted that "Christopher Nolan's name and a film like 'Tenet' draw a lot of attention. There are not many directors whose films are anticipated throughout the whole world with such huge interest. It's the absolute top level and a great victory for all of us that we managed to attract the production of this film to Estonia. The credits of the film include many Estonians in key positions. Quite a few of them kept working on the project outside of Estonia and have received impressive offers from the international film world as a result of this project. The interest for Estonia as a film country and shooting location has truly leapfrogged."

Apart from a few well-known Estonian actors there were thousands of extras involved, as well as hundreds of production staff in lighting, costuming, art direction, make up and more. The Estonian film community took a crash course in large-scale Hollywood production.

Nele Paves commented that "After serving such a big project we are really assured that, even as a small country, we can do big things. Film production always involves surprises at every step as part of the job. We learned how to adapt and adjust quickly, how to solve challenges and be prepared for surprises. We really did everything to make sure all goes smoothly."

Meanwhile, "Tenet" has triggered further interest in Estonia as a film location. Paves explained that the project attracted notice from Hollywood and the movie industry in other countries. "It is a big achievement and progress in terms of bringing new productions to Estonia," he said. "The film world is quite secretive, however, and large Hollywood projects in particular are kept well out of sight until everything is finalised. So, we can't talk about these before the director calls 'Camera. Action!'"

Paves' job — to attract international productions to Estonia — was quite tricky at early stages when the potential of Estonia was unrecognised, but is easier now.

"Thanks to the success stories of the past few years and the good work of our film makers," said Paves, "this is changing. But we are still small and unknown. The challenge is to turn this to our advantage as an exotic, new and exciting location for foreign film makers."





"The Last Ones" by Veiko Õunpuu is Estonia's national entry for this year's foreign language Oscars

Estonian films in the run for Oscars

As in previous years, the Estonian Film Institute has selected national entries for foreign language Oscars. Last year **"Truth and Justice"** by **Tanel Toom** narrowly missed the final five.

The Nordic Western by **Veiko Õunpuu "The Last Ones"** is a co-production of Estonia, Finland and the Netherlands, set in the untamed Lapland tundra of northern Finland. It's a story of hope and the quest for better life; of hardship in overcoming greed and cruelty. A young miner Rupi (**Pääru Oja**) hopes to scrape together enough money to escape the harsh and dangerous life of a mining village. Work in the mine has come to a halt as Rupi's father, the last reindeer herder in the area, refuses to sell his land to the vicious mine owner, "Fisherman" (**Tommi Korpela**).

The film depicts the heart wrenching loss of a traditional life style in the face of capitalist greed and environmental damage. "Fisherman" interferes in a romantic relationship between Rupi and Riitta (**Laura Birn**), creating a gripping sub-plot. The story is enhanced by breath-taking super wide shots of epic tundra landscapes (taken by cinematographer **Sten-Johan Lill**), carrying the audience well beyond trivial, mundane horizons. The grand old man of Estonian film music, **Sven Grünberg**, gives the story a fitting soundtrack with references to classic melodies.

Three Estonian productions are in the running for Oscars in the short film category, based on previous festival wins.

"My Dear Corpses" by the young director **German Golub** has already brought home the student Oscar. The film was produced as Golub's graduation project from the Baltic Film and Media School (Tallinn University) and has been praised as the best Estonian film of 2020 by some critics. The story of a young man who, after losing his home, has to make a living by transporting corpses — a job that Golub has held himself — is a brave choice of topic. The story is told by a great cast in witty dialogue, with dark humour and soulful humanity.

The film debut by **Kerli Kirch Schneider "Virago"** is also a dark comedy, this time set in a southern Estonian village known for its high fatality rate among men. The film intertwines harsh reality with mystique and magic. "Virago" premiered at the Busan short film festival in South Korea and qualified for an Oscars' nomination after winning the *Grand Prix* in Busan.

A third entry — **"The Weight of All the Beauty"** by **Eeva Mägi —** is a poetic and personal documentary set in a remote area on Saaremaa Island in the Sõrve peninsula. The protagonist, Villi, relates the stories of four friends who ended up being tricked by the "Vodka Spirit." Now he lives alone in the village between sea and forest. The only other inhabitants are protective old trees. "The Weight of All the Beauty" won the award of best documentary at the Melbourne Film Festival, earning a position in the Oscars competition.

The Oscars ceremony of the American Film Academy will be held on the 25th of April 2021.

Re-tuning the event marketing

By Maris Hellrand



Lehari Kaustel

Originally trained as a musician and conductor, Lehari Kaustel has led the event marketing company Royal Experience for 10 years. A global pandemic and overnight lockdown in mid-March 2020 froze most event companies in their tracks. Not so for Kaustel. As though retuning the instruments of business and forming a new orchestra of virtual and hybrid events, he's adapted and expanded his market a thousandfold, reaching literally beyond planet earth.

Photos by Jüri Kartul





Two hundred fifty events, one hundred fifty one countries and five continents later, it's a good moment to look back at the breath-taking journey of **Global Virtual Solutions** (GVS) consortium, a partnership formed by **Royal Experience**, **Miltton Group** and **Creative Union**.

Re-tuning

The collaboration was a lucky coincidence but, most important for Kaustel was the trust among partners and a 'never-give-up' mindset.

He explains, "When the lockdown was introduced, many parents were worried how to handle the distant learning that was about to start just after the weekend, just as I was. Education technology organisations had to give guidance to parents for an event that was scheduled and announced to take place on Sunday, the 15th of March. But [the previous] Friday nobody had any idea how to actually produce it, with thousands of participants, panellists and a two-way connection among them. On top of this, there was no budget. I realised this is a serious situation and not a time to ask how we can earn money... This is a time to take action."

So Kaustel made a few phone calls on Saturday and a group of skilled partners put their heads together. As a result, a record-breaking online conference was organised with 30,000 parents joining from all over Estonia, tuning in to a television studio built by **Eventech** in less than 24 hours. This initial success led to booking a similar event just two days later. And the continuing journey has blossomed into high-level UN summits, a global conference of Santa Clauses and a European Space Week event that connected planet earth with the international space station in a virtual live conference.

Re-tuning is the most apt expression to describe the approach toward adaptation. Because, as Kaustel explains, Royal Experience has been an event marketing company for 25 years — a channel and platform built to enable its clients to broadcast their message that has been reconfigured. "We just have gone through a re-tuning. However, this re-tuning unexpectedly opened up a whole new world for us."

"This mission hasn't changed," he says. "The mission and focus are the same; we just needed to adjust to the new conditions and restrictions. Kaustel compares their initial effort to an airplane taking off. "The plane was already in air when we were still discovering and determining how many motors it needs, how many people it has to carry, how high it has to fly. We've built it while flying," he explained.

Virtual, hybrid, global, hyperlocal

GVS offers many different formats and solutions from individual online connections to hybrid events in which a number of the participants are situated in a single location, such as a television studio. They also have produced events entirely out-with Estonia.

The main challenge of the service is in combining a huge range of elements simultaneously.

Amber Events Awards 2020:
Best hybrid event in Europe
Best webinar in Europe



4D4 Launch

An original format involving event production, logistics and organisation now incorporates an enormous range of new elements including network engineering, cyber security, IT, content creation, guest management, speaker management, remote catering, graphics design, technology management, and broadcasting — from script to call-sheets and technical details.

Virtual tools that promote brainstorming, voting and feedback — all the interactive possibilities that people utilise during events — are all incorporated. The spectrum of activities includes 57 different virtual tool providers. What complicates the process even more is that the target groups and participants reside in countless different locations and technical connectivity must be established, first and foremost. Kaustel says the sector is moving towards hyper-locality, meaning that "We are all in different places but at the same time together. The technical possibilities are very different in each location."



Photos by Jüri Kartul

In the beginning of December, GVS organised the world's largest virtual congress of Santas, which brought together Santas from 102 countries. A partner of the event is UNICEF and proceeds of the event will aid the work of the charity for children. Lehari Kaustel, Head of GVS, said before the event that the congress proves the importance of the Christmas tradition in any situation. "I hope that thousands of Santas will use the opportunity to convey this message to the world — Christmas is not cancelled. No virus will break Christmas spirit. Let's take care of each other and help those in need."



A new chapter of digital Estonia

Estonia began its term as a member of the UN Security Council in 2020 and made world history with a UN virtual dialogue in the spring. It held a high-level meeting of the UN on the 75th anniversary of the end of World War II as part of its presidency of the UNSC in May. GVS organised the hybrid forum whose resounding success has opened the floodgates for many UN-sponsored and high-level inter-governmental events.

Kaustel says GVS is now able to build a technological bridge from any UN member country to anywhere else in the world. A virtual conference of the ambassadors of Finland and the **Three Seas Summit** are other examples of high-level political events produced by GVS.

Kaustel commented, "We have found ourselves in a role that we never expected — in positions of confidentiality between heads of states, government bodies, ministries, enabling dialogues that would otherwise not have happened. I'm truly impressed with all the trust and support that the Ministry of Foreign Affairs and the business diplomacy unit in particular has given to us."

Partners of Global Virtual Solutions consortium:

Miltton Group, Royal Experience, Eventech, Cisco Systems, TwoOne, Kultuurikatel, Minu Rada, ProLab, Valge Klaar, Telia, Futuruum, Sorainen, Digiscope, VOK DAMS, Creative Union

The president of Estonia Kersti Kaljulaid: "In Estonia there is an agency that only six months ago was just a local company and now has clients on all continents."

Singing in sync

A highlight of the global journey thus far is an event that connected Estonia's singing tradition with modern technology. Kaustel declared it an engineering miracle when a 2500 voice choir sang from their homes, accompanied by a live band located at the Song Festival Grounds in Tallinn, conducted by **Aarne Saluveer,** and broadcast on live television.

"The Estonian government challenged us to organise a meaningful and memorable event in May to mark the end of the emergency situation while many restrictions remained in place," Kaustel said. "Singing in choirs is a foundation of Estonian culture and it seemed only natural to try to make it possible again. Of course, the hybrid choir can never replace the song festival, but still, we did make history by literally using a time machine to enable two-way connection between musicians while broadcasting all of it live as well. The engineers of **Telia** told me three times that it will be impossible to avoid the delays. I finally demonstrated it to them with a choir of ten people via conference call and then they combined all available servers of the region to make it possible. The remote singers were all present at the same time at the Song Festival stage via thousands of iPads."


Aarne Saluveer





How about a coffee-break-chat?

Kaustel admits that nothing can replace human physical connection, but also notes that, under these extraordinary circumstances, new tools have emerged to enable informal chats on event side-lines; allowing participants to knock on someone's 'digital shoulder' for a quick word. New formats are also being developed to create local meeting hubs for trade fairs in cases where clients actually need to see and feel physical products before joining in at a virtual coffee table with colleagues across the globe.

Pandemic restrictions have forced most companies to rethink business and conference travel. Apart from cost-savings, remote or hybrid dialogues also reduce the environmental footprint and time spent for business travel.

Carried along on a torrent of rapid and seemingly irreversible change, Kaustel has no plans of slowing down and is dreaming of a virtual moon-shot. "Hopefully," he says, "Nokia can soon erect its mobile network on the moon, so we can offer the surface of the moon as a virtual event location. This is actually possible."



Photos by Bocuse d'Or / Lauri Laan

Bocuse d'Or Europe's gastronomic competition took place in Estonia for the first time in October 2020. A dream come true for Dimitri Demjanov, the grand old man of Estonian fine cuisine.

Bocuse d'Or has put Estonia on the European gastro map

By Maris Hellrand







Artur Kazaritski, Estonia's representative at Bocuse d'Or Europe 2020, works as *sous chef* at Geranium in Copenhagen, a three Michelin star restaurant led by triple Bocuse d'Or winner Rasmus Kofoed

Dimitri Demjanov: "The status of Estonian chefs in the world will never be the same."

Sixteen teams of top chefs created spectacular dishes from Estonian local ingredients including quail and eel catfish. Christian Andre Pettersen from Norway won the Bocuse d'Or Europe, while the Estonian team finished seventh and won a place in the finals next year among 10 European participants.

Estonia was represented by **Artur Kazaritski** (aged thirty), who works as *sous chef* at Geranium in Copenhagen, a three Michelin star restaurant led by triple Bocuse d'Or winner Rasmus Kofoed. Kazaritski, a native from Sillamäe in North East Estonia, said that he took time off from the restaurant for three months to devote himself to the competition full time.

"It was the right decision. It would not have been possible as a part-time project," he explained.

Kazaritski's culinary adventures started early, at the age of 19, as he left Estonia to work at Michelin star restaurants in Japan, Norway, California, Italy, Finland and, finally, Denmark. Kazaritski's competitive ambition extends beyond the kitchen. As a passionate triathlete he is used to mobilising for top performance, including during the 5 hours and 35 minutes that the culinary teams had to prepare their dishes.

Years of back-stage preparation

While the participating teams spent two to three months training for the competition, backstage preparation took years. **Dimitri Demjanov** started the journey eight years ago, trying to convince Bocuse d'Or to hold the European competition in Estonia and the last two years have required intensive preparations. Demjanov says: "It is a true miracle that we succeeded under these extraordinary circumstances. Now Estonia is a full member of gastronomical Europe."

Demjanov is pleased with the feedback from the Bocuse d'Or organisers saying "Estonia did earn points for excellent organisation — the venues **Saku Suurhall** and **Seaplane Harbour**, the hotels, the caterers — everyone delivered to an excellent standard. And this to a pool of very critical judges who are trained to search for mistakes."




BRAGARD

Photos by Bocuse d'Or / Lauri Laan



Christian Andre Pettersen from Norway won the Bocuse d'Or Europe 2020

The search for local seasonal ingredients for the competition was turned upside-down by the pandemic and postponement of the competition from spring to autumn. Originally the Baltic Herring was supposed to take the centre stage but, as the season ends in late spring, it was no longer possible to provide the simple and popular fish to the teams for training and competition in October.

Demjanov admits that the lost opportunity to gain 20 new exciting recipes for this very traditional fish opened up the gastronomical market for a stable newcomer. The fish farm of Avo Leok from South East Estonia had to perform a logistical miracle to deliver fresh fish to all teams training for the competition while flight connections were under pressure from the Covid-19 pandemic. The same goes for the quail farm from the shores of Lake Peipsi. Both producers hope that this gastronomical Olympics will help bring their produce to the dining tables of Europe's finest restaurants and that public interest will be boosted among the 35 million or so international viewers who joined the live broadcast while, under pandemic conditions, the competition was held without the expected 4500 local spectators.

Paving the road for Estonian produce and cuisine is one of the major outcomes of such an event. Demjanov is pleased that, in spite of the very short time available to prepare, the chefs, teams, judges and organisers were able to experience the essence of Estonia in their full glory. Gastronomy is the fastest growing sector in Estonia after IT and start-ups, says Demjanov: "This is an essential part of culture and tourism and a strong currency in competition between destinations."

Demjanov notes that the level of the top teams has evened out in the recent years saying, "The basics were perfect, nobody made mistakes here. The decisive factor for winning is in the finesse."

Nordic countries in particular have invested a lot in the development of their cuisines and take a highly professional approach to international competitions. Chefs and their teams train like professional sportsmen. Others in the industry must be aware in order to remain competitive.

The Bocuse d'Or finals will be held in Lyon, France from 29th May to 2nd June 2021. Twenty-four of the world's best chefs will prepare their dishes in the hometown of the legendary Paul Bocuse. Hopes are high for the Estonian team. Demjanov points out that the European competition is of such high level that other regions of the world will be hard-pressed to shake the European teams in the finals.



Dimitri Demjanov, head chef of Estonia's oldest fine dining restaurant, Gloria:

"Gloria can't offer take-away service. Our doors remain open in Tallinn's Old Town while we have cut costs to the maximum to survive the winter. We are happy that our efforts have been noticed in Europe and America with two recent awards for food and ambience."

www.gloria.ee
www.facebook.com/gloria1937
www.facebook.com/bocusedor.estonia



Photos by Angus Foreman

Peter Ferry, a tech entrepreneur and the Honorary Consul of Estonia in Edinburgh, owns the data platform company Siccar, which simplifies citizen interaction with government services in the UK and between companies. It was his close ties with Estonia that triggered this digital revolution.

Honorary Consul's tech initiative digitalises British governments

By Katre Pilvinski

In 2016, Peter Ferry's **Siccar** [previously named Wallet Services] won a CivTech challenge for the best cyber idea in Scotland. CivTech is the Scottish Government's accelerator, which has a focus on solving the challenges of public sector organisations through innovation. When Siccar won, the company set a goal to bring blockchain innovation to Scottish business and government.

"Citizen interaction with Scottish public bodies is often manual, awkward and inconsistent. This means citizens and business don't enjoy the joined-up public services of top-ranked digitally-enabled countries such those found in Estonia," Peter explained at the time.

The startup, which previously had raised £1.4 million (€1.6 million), announced at the beginning of November that they have received an additional investment of £1.3 million (€1.5 million).

Career at Microsoft

The Honorary Consul's start-up aspirations began through employment with Microsoft. At the start of his career, after studying information engineering and computing sciences he worked for a startup in London and met his future wife Dianne, from Estonia. In a small team of five, he experienced the challenges faced by a fast-growing company for the very first time. When the couple moved to Scotland in 1996, Peter was employed by Microsoft.

The tech giant had hired approximately 20,000 employees worldwide but when Peter joined Microsoft Scotland there were only three of them on staff. By the time he finished at Microsoft about 40 people were engaged in product launches and revenue building. "Microsoft in Scotland was like building a startup," says Peter. And it was a significant part of his career, beginning in his twenties and ending almost in his fifties.

Peter has seen how the tech industry had grown up and, when he moved on, wanted to be the founder of a startup himself, to convert his ideas into success. "This is the first time. I've done this quite late in life," he laughs.

Having close ties with Estonia through his wife Dianne, he was familiar with that small digital society where the residents use their digital identities to vote, sign documents digitally, get digital prescriptions, start businesses and use other public services online. Now he is an Estonian e-resident and has founded a company through e-Residency.

Honour for the digital bond

Peter's connection with the digital nation grew even stronger in 2017 when he was invited to become the Honorary Consul of Estonia in Edinburgh. Among other consular duties, the Honorary Consul promotes digital and industry links between Estonia and Scotland.

For example, last year during the 'Estonia Now' festival in Glasgow, the Honorary Consul and his wife arranged a seminar that was attended by 100 people from the Scottish Government and local businesses. There they learned more about the nature of Estonian digital services and how they came to be. **Linnar Viik**, Estonian IT visionary and one of the founders of the e-Governance Academy, described how Estonian e-services have been constructed from the very beginning. The Estonian e-Residency team explained at the seminar how it was an opportunity for British business people to have a location-independent business still based in the European Union.

Peter admires the technological aspects and the vision of what has been achieved in Estonia.

"In Estonia, there is a system of identity. Whenever you hit the bank or government you use the same identity. These systems don't exist elsewhere in the world. Here we have many repetitive and inconvenient ways to connect with companies and different departments of the government," he explains.

Peter saw the ease with which people can interact with the government in Estonia. "I wanted to bring that simplicity to the older and more complex environment we have in the government institutions of the UK," he elaborates.

This is how the tech entrepreneur started converting his ideas into success. Four years ago, he founded the data platform company Siccar, thus achieving one of his aspirations. He and other founders of the startup realised how technology could offer the same simplicity and care as the Estonian model for information flow between organisations. That is what really inspired them.

"We make use of blockchain technology to make things simpler for citizens and keep them in control of their sensitive information. We found our first customers in the Scottish public sector and are now expanding to other industries," says Peter.

The startup, which has a staff of 10, has been working on application processes for licences permits and entitlements.

"Citizens can provide information and this information can be validated by authorities. We make it easier for government authorities to work together to make citizen services more joined-up," Peter says.

New ways of sharing data

Information handling works differently in manufacturing than in government. Industrial organisations need to share information, to collect detailed manufacturing records, but also want assurance that their data can't be accessed by competitors. Siccar technology allows these companies to stay in control of their confidential data but share verified records between appropriate parties.



Dianne and Peter Ferry

"We provide encryption and manage disclosure. We send and encrypt information in such a way that only intended recipients of this information can decrypt it and it can't be passed on to a third party. Our platform allows those organisations to work together in ways they couldn't before," he says.

In most cases, Siccar's customers tend to be working in the supply chain where they have to collaborate on a particular task. One such example from the tech company's portfolio is a project, focused on the manufacture of high value assets in the oil and gas industry, and requiring the secure sharing of data along complex supply chains of companies. Siccar's system allows manufacturing records to be generated and assured collaboratively, enabling high integrity of record keeping and making the supply chain more efficient.

"We provide the infrastructure that allows this information to be shared and for the whole chain of custody of the data to be certified," Peter explains.

In relation to their future plans, Siccar wants to support development which has the biggest societal impact — for instance in health and social care for vulnerable citizens, and supporting university students.

"Really, wherever there are situations where it's difficult for government departments to interact to deliver the best services to citizens," says Peter.

Siccar offers safe infrastructure that allows these processes to be streamlined and exchange required data using digital signatures. "This is the process that most Estonian citizens are used to because they have a single system that they can rely on. But those systems and trust don't exist in all industries and countries in the world," he acknowledges.

Meeting people

Peter's wife Dianne works in the tech industry too, having an HR role in a startup company in Edinburgh. "When we have time off then we issue passports," says Peter.

The couple really enjoys meeting people, hearing their stories and helping out when things go wrong, for instance, when assisting the occasional Estonian tourist who loses their passport.

"It's fascinating when you are interested in politics and how the state and businesses interact internationally," Peter says. "It's hard work but we never have a dull moment," adds Dianne, the Consular Secretary.

Although it's sometimes challenging, Peter and Dianne agree that they feel privileged and honoured to provide consular services to Estonian citizens living in Scotland. Even more so, they've especially appreciated meeting interesting people like Estonian president Kersti Kaljulaid, former president Toomas Hendrik Ilves and Scottish First Minister Nicola Sturgeon through their consular work.

Events calendar: Highlights from January to April
Life in Estonia recommends



Egypt of Glory: Art from the Nile Valley
1st of January — 21st of March @ Tallinn

Estonia's first major exhibition of ancient Egyptian art features objects that are thousands of years old from one of the world's most important ancient Egyptian collections: the Museo Egizio in Turin, Italy. The Kumu exhibition features 200 items from the rich heritage of the Land of the Pharaohs. These include coffins, mummies, magical amulets, various funerary offerings and sculptures. On the one hand, the items tell the story of the ancient Egyptians' world and, on the other, each is a work of art.

kumu.ekm.ee



Winter Night Song Festival
23rd of January @ Otepää

Estonians love singing and music and, this year, they will meet again in the winter capital, Otepää, where the VII Estonian Winter Night Song Festival 'Winter Horoscope' will take place.

The growing interest over the years shows that the Winter Night Song Festival has won its place in people's hearts. Traditional campfires are lit in the park of Otepää Culture Centre. Everybody is welcome to come and sing along.

Talveöölaulupidu



Alutaguse Ski Marathon
12th — 13th of February @ Alutaguse

The Alutaguse Marathon is part of the Estoloppet series. The marathon is in the classic style with distances of 20 km and 40 km. This ski race has become increasingly popular over the years both with the locals and skiers from abroad. The ski tracks traverse the area covered by the Kurtna Lakes, Estonia's largest lake system. This year a night marathon will be held for the first time as well.

www.estoloppet.ee



Tartu Ski Marathon
21st of February @ Otepää

Tartu Marathon is the largest ski marathon in Eastern Europe, which brings together nearly 10,000 participants each year. The Tartu Marathon tracks are located in beautiful Southern Estonia and offer a choice between 63 and 31 km distances. Foreign visitors have said that this trail is one of the most beautiful and interesting in the world. Tartu Marathon is part of the international Worldloppet cross-country skiing series. A global virtual race is scheduled a week before.

www.tartumaraton.ee/en
Tartu Maratoni Kuubik
tartu marathon



Estonian Independence Day
24th of February @ All around Estonia

Independence Day is a national holiday in Estonia marking the anniversary of the Estonian Declaration of Independence in 1918. Each year February 24th is marked by fireworks, concerts, a parade of the defence forces and a presidential reception. It has become a tradition that each year the parade of the defence forces takes place in a different town in Estonia. Children and adults can admire military units and enjoy the music of the Band of Defence Forces, Police and Border Guard Orchestra, and the United States Air Force Band. Following the parade, the Estonian president, Kersti Kaljulaid, will give a televised speech and bestow state decorations on guests of honour at the National Day reception.

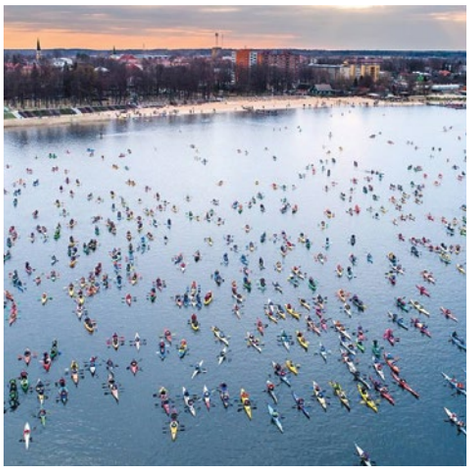


Black Food Festival Tallinn
10th of April @ Tallinn

The Black Food Festival is coming to Estonia again. Having set out its stall in Berlin, London and New York over the last 12 months, the festival is coming to the Põhjala factory in Tallinn. The aim is to open the door to culinary creativity and experimentation and to do so under the umbrella of an enjoyable city festival. Taste-wise, there'll be something for everybody!

www.blackfoodfest.ee
Black Food Festival Tallinn
blackfoodfestival

Events calendar



Võhandu Marathon
17th of April @ Võhandu River, Southern Estonia

One of the world's toughest and most beautiful canoeing marathons will be held in Southern Estonia. 100 kilometres of interesting — and at times extreme — river navigation will provide an excellent opportunity to see wild nature of Estonia.

www.vohandumaraton.ee
Vohandu Maraton
vohandumaraton



Jazzkaar Festival 2021
16th – 25th of April @ Tallinn

The largest jazz festival in the Baltic States will offer concerts all over Tallinn. This 10-day festival features the hottest international and local jazz talents and fills the entire city with great sounds and activities.

www.jazzkaar.ee
jazzkaar
jazzkaar



Haapsalu Horror and Fantasy Film Festival (HÕFF)
30th of April to 2nd of May @ Haapsalu

A three-day independent film festival focusing on the best genre films from recent years, exploring the darker and stranger side of cinema: from fantasy to horror, forgotten classics and special retrospectives to extreme films.

www.hoff.ee
Haapsalu Õudus- ja Fantaasiafilmide Festival (HÕFF)

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