

# LIFE IN **Estonia**

NO 45 | SPRING | 2017

**Digital  
EU Presidency**

**Let's Clean Up  
The World**

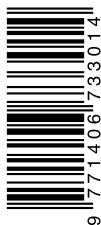
**Estonia Races To Space**

**Children Of Freedom Preserve The Heritage**

**Erika Ilves  
Aims  
At The Moon**

**Estonian Design  
Goes Global**

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land & people | state & society | economy & business | technology & innovation | culture & entertainment | tourism



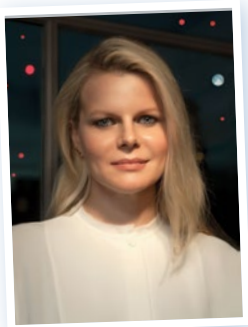
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# Estonia Enjoys Successful First Membership Year at European Space Agency

## LIFE IN Estonia



**COVER**  
Erika Ilves

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The first year as a full member of the European Space Agency (ESA) has been very busy and promising for Estonia. The achievements to date and continuous great results speak for themselves.

Estonia became a full member of ESA on September 1<sup>st</sup>, 2015. This was preceded by almost a decade-long accession process, whilst within five years, Estonian companies and research institutes participated in 27 ESA research and development projects. As a result of those projects new jobs were created and companies raised investments. In addition, students of Estonian universities built, and in cooperation with ESA, sent into orbit the first Estonian satellite ESTCube-1. Today Estonia contributes 2.5 MEUR annually to the ESA budget – 0.9 million funds the ESA research programme, and 1.6 million is spent on the optional Earth remote sensing and technology development programmes.

In 2016, Estonian companies and research institutions received nine ESA contracts. The projects were divided equally between companies and research institutions and included development work for software and space equipment. This demonstrates that the Estonian technology sector is diverse and able to fulfil space industry requirements.

The ESA functions on the principle of the so-called industrial return. Each member state has the right to receive contracts at least in the sum paid into the ESA budget. According to ESA statistics, Estonia's return coefficient to date is 1.09, which means that our companies and research institutes have brought back 109% of the money invested in ESA by the state.

Those good results are linked to the high level and quality of the projects from Estonia, which has also been acknowledged by ESA experts. The Estonian Space Office by Enterprise Estonia has also played a role in providing training, contacts and study trips to the Estonian space industry and science community.

The close cooperation between Estonia and ESA is set to continue over the coming years. This year the ESA business incubator will be launched in Estonia and negotiations are ongoing for Estonian participation in the digital development programme of ESA as an organisation. In addition, various events promoting space applications as a benefit to society will take place in November in Estonia during the Estonian presidency of the EU.

Estonia's economic success as a small country is largely dependent on export. Fulfilling ESA contracts can be considered an institutional export for which ESA membership serves as the precondition. This is not an easy way to increase export, but it is an unavoidable one if our aim is to create a knowledge-based economy. Fulfilling ESA contracts is a sign of quality and helps open doors to new high tech markets.

**Madis Võõras,**

Head of the Estonian Delegation to the ESA



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Erika Ilves, cofounder of <sup>Off</sup>World, doesn't let herself be limited by the size of planet Earth while there's a whole universe out there. <sup>Off</sup>World is developing a robotic workforce that can settle the solar system.



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Let's Do It! is a civic-led mass movement born in Estonia in 2008. About 10 000 tons of waste were cleaned up by 50 000 people in five hours. The news went viral. By the end of 2012, the network had spread to 96 countries. The next World Cleanup Day is scheduled for September 15<sup>th</sup>, 2018, and will engage people in 150 countries to organize massive cleanups.



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When searching for success, few people start by looking into their past, but that's exactly what gave Adam Rang – the founder of Rang Media House – the edge he needed to take his startup from idea to flourishing business in just over a year.



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#### INNOVATION

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Estonian company Skeleton Technologies will make more energy-efficient satellites. Aside from aerospace, Skeleton's ultracapacitors are used in sectors as diverse as motorsports, heavy industry, maritime, renewables and grid.



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ABB opened for business in Estonia twenty-five years ago and has continued to grow. Bo Henriksson, Managing Director of ABB Estonia and Baltics, says that the great reputation of ABB Estonia has created opportunities for the entire group.



### 47\_ **AEGAON Watches – a Quest of Character against Luxury**

Most premium watch brands of today seem to communicate through two popular lifestyles – the luxury lifestyle full of glamour and expensive things or the modern lifestyle full of travelling and special moments. Aegaon, the first Estonian watch company, has set its focus on the individual and has succeeded.

#### CREATIVE ESTONIA

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Kamille is international in many senses: her father is Egyptian, her mother's ancestors come from Poland; she has studied in the USA and lived in Switzerland where her husband comes from. Kamille sees it as her artistic task to go in depth into the secrets of life. She paints her models larger than life, in a direct and indirect sense of the phrase. Those are close-ups of life, details magnified to monumental dimensions.



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Mart Avi admits that his music traverses all genre borders. In 2016, Estonia's most influential end-of-year album list, compiled by 55 music critics and melomaniacs, featured an all-time high percentage of Estonian music: Mart virtually killed them all – ending up at #2, just behind Bowie's Blackstar.



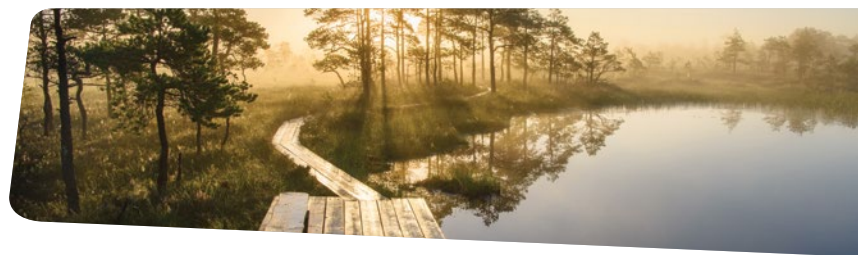
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For the first time ever, design from Estonia has gone into mass production and is conquering the streets worldwide. Meet the folding electric scooter Stigo, designed by Matti Õunapuu.

#### TOURISM

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The 12<sup>th</sup> Youth Song and Dance Celebration will take place in Tallinn in the summer of 2017. Around 30 000 choir singers and dancers represent a new generation – 'children of freedom', who were all born after Estonia regained its independence in 1991. One of them is composer Rasmus Puur (25), the author of the concept of this year's Song Festival.



### 74\_ **Unique and Magical Places to Stay in Estonia**

Estonia is one of those places where modern culture beautifully mixes with a dose of luxury and uniqueness, where people are still as pure as the untouched nature around them. Here are only a few of the many places to stay in Estonia.

### 80\_ **Events in Estonia: Highlights from April to June**

The late spring and summer season in Estonia is the perfect time to enjoy not only world-class sports events but also big international music events. Take a look at the highlights in the coming months.



ESTONIAN PHILHARMONIC CHAMBER CHOIR



# Chief Conductors

**Estonian Philharmonic Chamber Choir 35**

**Tõnu Kaljuste – Requiem & Miserere**  
Schnittke Requiem, Pärt Miserere.  
13.04 at 19 St Paul's Church, Tartu, 14.04 at 17 St John's Church, Tallinn, 15.04 at 19 Pärnu Concert Hall

**Daniel Reuss – Songs of Ariel**  
Tüür, Martin, Escher, Swelink, Pärt, Schnittke.  
24.05 at 19 Church of St. Michael, Jõhvi, 25.05 at 19 St Nicholas' Church, Tallinn

Tickets at the Piletilevi and Piletimaailm.  
[www.epcc.ee](http://www.epcc.ee), [www.eestikontsert.ee](http://www.eestikontsert.ee)

**Postimees**

**EESTI KONTSERT**

Telia SALVA PÄRNU SUNDAMO JAZZ ERFF



# HAAPSALU TCHAIKOVSKY FESTIVAL

28 June – 1 July 2017

[www.tchaikovskyfestival.ee](http://www.tchaikovskyfestival.ee)

facebook.com/haapsalutchaikovskyfestival

**Eesti Kontsert**

**HAAPSALU 1272**



Alena Shkatula

## GISELLE

BALLET BY ADOLPHE ADAM

PREMIERE AT THE ESTONIAN NATIONAL OPERA ON APRIL 7, 2017

Choreography: **Jean Coralli, Jules Perrot**

Choreographer and Stage Director: **Mary Skeaping** (England)

Staged by **Andria Hall** (England), **Marilyn Vella-Gatt** (England)

Conductors: **Vello Pähn, Lauri Sirp, Kaspar Mänd**

Original Designs: **David Walker** (England)

Designs recreated by **Alex Lowde** (England)

Lighting Designer: **David Richardson** (England)

Since its premiere, *Giselle* has inspired generations of choreographers and has become the epitome of romantic ballet. It was immediately declared 'the greatest ballet of its time', wonderfully fusing music, movement and drama. Inspiration for the ballet came from two ghost stories – Victor Hugo's poem *Phantoms* and Heinrich Heine's *On Germany* that were integrated into a mysterious and sublime plot.

A betrayed and broken heart drives the virtuous village girl Giselle to her untimely death. In the moonlit forest, she joins the world of the vengeful spirits of abandoned brides, the Wilis. When Giselle's repentant lover Albrecht visits her grave, only her undying love can save him from the Wilis' bewitching, deathly dance.

The ballet's lively colourful first act and the following 'white' act have captivated audiences for over 170 years. Its charms can be summarised with the words of a great 20<sup>th</sup> century choreographer George Balanchine: 'Like *Hamlet*, *Giselle* is a classic... people go to see *Giselle* and to see ballerinas dance it for the same reason we go to see new interpretations of *Hamlet*... we always discover something in it we had not seen before.'

[www.opera.ee](http://www.opera.ee)





Photo by Siiri Kumari

## INTERNATIONAL DANCE DAY GALA

ON APRIL 29, 2017 AT THE ESTONIAN NATIONAL OPERA

Artistic Director: **Thomas Edur**

The traditional International Dance Day Gala presents **Filipa de Castro** and **Carlos Pinillos** from the National Ballet of Portugal, **Maria Seletskaya** from the Royal Ballet of Flanders and **Alexander Volchkov** from the Bolshoi Theatre in Moscow as well as the best dancers of the Estonian National Ballet and Vanemuine Theatre. The gala features pearls from classical ballets as well as the freshest pieces in contemporary Estonian dance – the world premiere of the duet *Chase* for **Alena Shkatula** and **Denis Klimuk** by Thomas Edur to the music of an Estonian electronic musician Bisweed. **Jevgeny Grib** and **Marta Navasardyan** will dance a duet *Sharps and Flats* to the music of Sasha Pushkin that was created in spring 2016. **Marita Weinrank** presents the solo number *Today I will sing* by Edur and she is accompanied on stage by an Estonian runic song artist Kairi Leivo. You are welcome to celebrate the International Dance Day together with the Estonian National Ballet!



Photo by Rünno Lahesoo

Luana Georg and Sergei Upkin

Danske Bank

Jazzkaar Festival  
21-30/04/2017



### The highlights of Jazzkaar!



April 26th at 9 pm at Vaba Lava  
**STEVE GADD** (USA)



April 29th at 7 pm at Vaba Lava  
**TIGRAN HAMASYAN** (Armenia)

Tickets from Piletilevi ticket offices and [www.piletilevi.ee](http://www.piletilevi.ee).  
Ticket information +372 666 0030 and [piletid@jazzkaar.ee](mailto:piletid@jazzkaar.ee).  
[www.jazzkaar.ee](http://www.jazzkaar.ee)



EstiPäevaleht







## President of the Republic of Estonia **Kersti Kaljulaid** Introduced the Estonian Digital Story to the German Association for Small and Medium-Sized Businesses

From the left: President of the BVMW, Mr. Mario Ohoven, former State Secretary at the Federal Ministry for Economic Affairs, Mrs. Dagmar Wöhr, Federal Minister for Economic Affairs and Energy, Mrs. Brigitte Zypries, President of the Republic of Estonia, Kersti Kaljulaid, former Federal Minister for Economic Affairs and Labour, Mr. Wolfgang Clement, Chief of Staff of the Bundeswehr, General Volker Wierer

On February 13<sup>th</sup>, over 3400 German entrepreneurs, top politicians, ambassadors, as well as representatives from science and culture gathered in Berlin for the annual meeting of the German Association for Small and Medium-Sized Businesses.

When discussing the future of economy and entrepreneurship, the most prominent topic is digital transformation. President of the Republic of Estonia Kersti Kaljulaid, who was one of the keynote speakers at the annual event, stressed the importance of digitisation in overcoming the challenges facing small and large corporations.

'Estonians value convenience and have therefore adopted publicly offered services that simplify everyday life. Estonians are also smart enough to realise that these services save them time and money. I believe that Germans are no different from Estonians.'



Photos by Christian Kruppa and Michael Königs



'Zero bureaucracy is a public good, so no one needs to invest by themselves into it. Social change you gain is not only directly measurable in money, but it will also change the way people see modern technology,' said President Kaljulaid.





## Startup Statistics of 2016

# Taxes Paid, Funding Raised, Popular Industries and More

According to Startup Estonia, a governmental initiative for supercharging the Estonian startup community, there are currently a little over 400 startups in Estonia and roughly 90% of them are in the very early – prototyping, seed – or early stages of development. Estonian startups are a heterogeneous bunch and cannot be defined by a ruling industry. The most widespread, common keywords are “IT services” and “B2B”, which are rather vague. However, four somewhat more prominent categories do appear:

**Hardware** – startups such as Starship Technologies, Click & Grow and Skeleton Technologies;

**Developer Tools** – the likes of Testlio, Plumbur and Zereturnaround;

**Collaboration & Productivity** – Pipedrive, Toggl and Weekdone among others;

**Fintech** – the most successful of these include Transferwise, Monese and Pocopay.

### Fuelling the Economy

By the end of Q3 2016, Estonian startups had already paid the same amount in employment taxes to the government as they did for the whole of 2015. All in all, the startups’ tax contribution grew from 21 MEUR in 2015 to 28 MEUR in 2016.

The number of people employed in Estonian startups is growing rapidly and reached 3500 people by the end of 2016. Comparing this number to the year before, startups attracted an additional 1000 people to join them in 2016. The general rule of thumb shows that 3/4 of all people employed by Estonian startups are employed in Estonia, meaning approximately 800 of the new jobs were created in Estonia and 200 outside the country.

Today, 5% of Estonian startups account for 50+% of the jobs and 3/4 of all tax contributions. The biggest employer is **Transferwise**, who has 600 people on their payroll altogether, 400 of which are in Estonia. Followed by **Pipedrive** (240), **Adcash** (200), **Zereturnaround** (170) and **Creative Mobile** (100).

### Investments

Altogether, Estonian startups have raised 370 MEUR during the last 10 years with more than 80 percent of it from foreign investors. 2016 turned out to be a record year with 102.5 MEUR being attracted by Estonian startups. The average deal size of the 40 deals recorded in 2016 was 2.5 MEUR. Taking a closer look, the biggest contributor, Transferwise, raised 48 MEUR in 2015 and 23.5 MEUR in 2016. The end of the year displayed huge investment activity with **Starship Technologies** raising a historically massive seed round (16.5 MEUR), Pipedrive attracting 16 MEUR and **Monese** raising 9.4 MEUR. Most notable initial rounds in 2016 were done by **Shipitwise** (357k EUR), **Leapin** (200k EUR), **Globalreader** (165k EUR) and **Transferfast** (150k EUR).





## People – Biggest Asset and Cost

The main cost for startups are expenses related to employment. Both **Skeleton Technologies** and **Scoro**, who raised considerable amount of capital this past year, said that they are using the investment for product development and hiring new people.

'We use the investment for expansion, both in terms of production, such as opening a new production plant in Germany, as well as operational costs. We are currently in the process of hiring 20 new people for 13 different positions,' said **Oliver Ahlberg**, the COO of Skeleton Technologies.

With Estonian startups growing, the need for talent is becoming more important than ever and to address this need, a Startup Visa programme was launched in January 2017.



## Estonia Welcomes Startup Founders and Talent

On the 18th of January 2017, a new Startup Visa programme was initiated by the local startup community, Startup Estonia and the Estonian Ministry of Interior, allowing non-EU nationals to come and work for Estonian startups, relocate their existing startups or found new ones in Estonia on preferential terms.

In order to qualify for the preferential terms of the startup visa, startups must fill out an application detailing their business and team, which will then be evaluated by a Startup Committee consisting of members of the Estonian startup community. In the case of a positive decision, the founders will have a choice between applying for a one-year visa with the option of extending it for another year, or a permit for startup entrepreneurship for five years.

The programme has seen a highly successful first month with over 50 applications received from more than ten countries. The biggest interest for the programme so far is from Ukraine, followed by Russia, Belarus and India.

The first foreign employees have already been successfully recruited and have arrived in Estonia. One of the first foreign employees to arrive was an Indian software engineer who was welcomed by the team at Shipitwise, a full-service shipping platform startup. 'The easier the access to smart and motivated people, the more competitive we are on a global scale,' said **Ragmar Saksing**, the co-founder of Shipitwise, on the importance of the Startup Visa.

The terms and opportunities available through the Startup Visa program can be found in more detail on Startup Estonia's webpage <http://startup-estonia.ee/visa>.





**Latitude59** – the flagship startup & tech event of the world's first digital society takes place on May 25<sup>th</sup> to 26<sup>th</sup> 2017.

The event will bring forward inspiring discussions on digital society, business and government. Latitude59 will host international experts as well as entrepreneurs regularly taking advantage of fully digitized business procedures sharing their ambitions and experience.

The conference will also peek into the future of **fintech** from the perspective of both old and new banks as well as entrepreneurs in the digital asset business.

Be ready for the good, the bad and the ugly truths about **startup-corporate collaboration**, acquiring possibilities and processes. The discussions will also touch upon what to expect from **genome-based treatments and virtual reality solutions in healthcare**.

For the first time, Latitude59 will have a whole series of awesome stories from experienced startup founders – both the triumphs and epic failures.



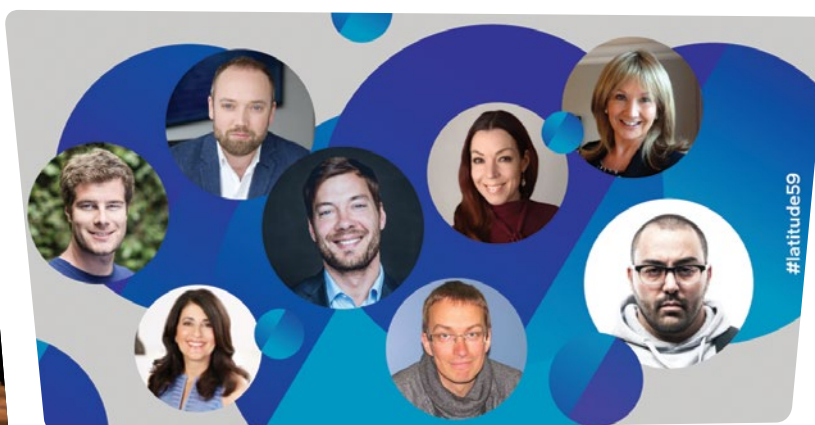
Latitude



# Latitude59 Welcomes You to its Epic 10<sup>th</sup> Anniversary



Speakers include **Cathy Rodgers** (IBM), **Jon Von Tetzchner** (Vivaldi Technologies), **Taavet Hinrikus** (TransferWise), **K.P. Reddy** (The Combine), **David Farmer** (Coinbase), **Ahti Heinla** (Starship Technologies), **Kaidi Ruusalepp** (Funderbeam), **Eric Migicovsky** (ex-Pebble), **Ruth Amos** (University of San Francisco), **Barbara Ficarra** (Sharecare), **Andrew Thompson** (Proteus Digital Health), **Chris Kelsey** (Cazza). And this is only a little more than the tip of the iceberg!







# Simple Session

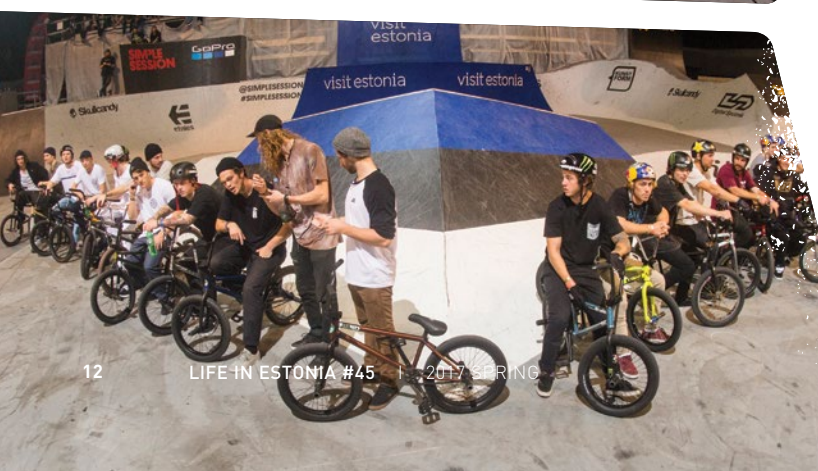
## the World's Most Awaited Action Sports Event in Tallinn



In the world of extreme sports, there is much more to winter than skis, mountains and snowboards. In 17 years, **Simple Session**, a world-famous BMX and skating competition created by Estonians, has grown into one of the brightest stars of the extreme sports sky – heating up Saku Arena in Tallinn in February.

The event was followed all around the globe as top athletes and rising stars from over thirty countries came to Estonia, making it the most international action-sports event in the world.

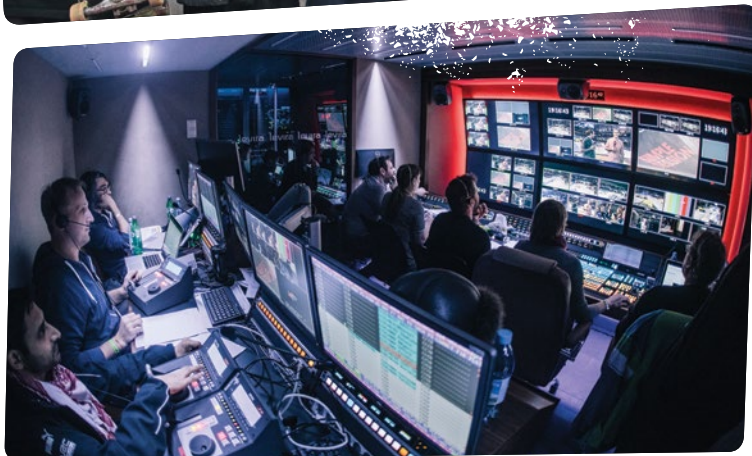
Simple Session is not only one of the most famous extreme sports events in the world as well as the biggest in Europe – it is a global media event that reaches millions of viewers on various television channels. In cooperation with Red Bull TV, the finals of **Simple Session 17** that took place on the 4<sup>th</sup>-5<sup>th</sup> February were televised on a grand professional programme, mostly attracting viewers in the United States, France, Russia, Mexico and the UK. The event also has a large fan base in Brazil.







Two very special medals from the X-Games were added to this impressive list because this year the competition was opened by **President Kersti Kaljulaid** and the youngest ever X-Games double gold medalist, the Estonian freestyle skier **Kelly Sildaru**. Together with the organisers of Simple Session, Kelly and the President opened the giant competition park at Saku Arena, designed by Nate Wessel, the leading ramp designer and builder of X-Games, Red Bull Skyline, Nike Pro and other renowned extreme sports competitions in the world.



Its atmosphere and high competition level has made Simple Session very popular with participants. Over the two competition days, approximately 8 000 spectators visited Saku Arena, including about 100 representatives of the foreign press who facilitated the event to the world in many languages. In addition to the webcast, TV giants like NBC Sports, the Extreme Sports Channel, Eurosport, ESPN, Fuel TV, Fox Sports and MTV have shown the event in Tallinn over the years. For example, the 'Red Bull Signature Series' on NBC devoted a two-hour programme to the Simple Session in 2015, also introducing Estonia as a country to about 120 million viewers. This year the event was also shown in a separate programme by the Extreme Sports Channel.

Simple Session's massive one-off competition ramp has been adapted for BMX as well as skateboarding and, for the second year running, it has been possible to watch demo runs of top scooter riders, an event gathering popularity in Estonia in recent years.

A wild party programme topped every competition day at Simple Session and the general festival spirit was complemented by other events such as the world premiere of the BMX film "Foundation" and a spectacular hockey match between BMX bikers versus skateboarders, organised by Visit Estonia. Since competitors love it in Estonia, two extreme sports athletes won the adventurous prize of a trip to Estonia, which would provide an opportunity to discover Estonian nature and exciting sights. Next summer, the summer competition of Simple Session will take place on the 26<sup>th</sup> of August in Riga.

[www.session.ee](http://www.session.ee)



Now that skateboarding has officially become an Olympic sport, it is worth noting that Simple Session also opened the World Cup Skateboarding season this year. Thanks to great coverage in the USA, Simple Session has become a springboard for many new talents looking to make a name for themselves to go on and participate in the X-Games and other large competitions. 9 competitors and programme hosts of Simple Session 17 this year could boast a total of 45 X-Games medals, including 21 gold medals.





**Erika Ilves is an entrepreneur who does not let herself be limited by the size of planet Earth while there is a whole universe out there. 'For now, we are developing and training our mining robots on Earth. But in less than a decade they will underpin mining operations on the Moon and beyond,' she claims.**

# To the Moon, Indefinitely

By EDE SCHANK-TAMKIVI

2008 Disney-Pixar animation WALL-E takes us to planet Earth in 2805, abandoned by people and covered in heaps of trash. There is only one cute robot left whose job is cleaning up the planet. In real life, we do not have to wait another 800 years to see this happen. Robots like this already exist. And if we treat our resources more reasonably, the picture might not turn out be as gloomy as depicted in the movie.

'Personally, I do not believe we will be running out of resources any time soon. We have plenty of resources on Earth to last us a few centuries,' says **Erika Ilves**, cofounder of **offWorld**, a company that is developing a new robotic work force to enable the settlement of the solar system. But Erika would not want to be among the first humans to set foot on Mars. Before moving people to other planets, it might be wiser to send robots out there.

'Right now on Earth we need about 10 tons of metals, biomass, and fossil fuels per person per year. Even with our resource needs expected to double by 2050, we have plenty of elements including seabed minerals and even fresh water deposits under the ocean floor. We don't always have the technology to access these resources economically or responsibly, but I have no doubt the technology can be developed. Energy is a challenge. Going outside planetary boundaries is a challenge. But again, all of these are addressable. The only justifiable attitude here is that of rolling up your sleeves and solving very real problems that we face,' concludes Erika, who herself has done exactly that.

## Think Big!

The space industry amounts to 323 billion euros a year. In 2015, around one fourth of it was still government expenditure but thanks to Elon Musk's SpaceX and the likes, private companies are rapidly taking over.

Currently the biggest chunk of it goes to communication satellites and the infrastructure on Earth that supports it, but that could likely be overshadowed by other opportunities like space resources, manufacturing and tourism.

'Being able to use lunar and asteroidal resources means we can dramatically lower the cost of in-space transport and make Earth orbit and even the Moon more accessible to everyone, even high school projects,' Erika claims. 'Think of an Estonian school team being able to send their experiment to the Moon. It also means it will be cheaper to build and supply structures in orbit and on the Moon – think private orbital stations you can stay at, micro-gravity labs you could work in, outposts on the Moon you can visit. And perhaps, during our lifetime, we could have thousands of people living on Mars.'

**offWorld** was founded in November 2015 but not much has been heard about the company. The same team of 7 cofounders had been previously working on another space infrastructure project called the Shackleton Energy Company, announcing in 2007 that they would be building the equipment and technologies necessary for mining the Moon and placing a team there within eight years, but failing to do so. 'This was an \$18 billion infrastructure program, so a mission impossible in terms of raising the funds,' Erika explains now. 'And yet, we managed to put together a global consortium of top tier space contractors, secured interest from multiple governments and secured our sovereign partner in Dubai. So we did come shockingly close to pulling the thing off.' Yet, this time they want to be sure to show results first.

Before aiming at the Moon, they are developing mining robots for a terrestrial mining client because 'it is the best place to develop and mature our mining system'. It also happens to be a large market that can support investment into the development of such a system.









Erika at Big Red dunes in Sharjah, UAE – the closest we can get to a Martian landscape on the Arab Peninsula.

Just like in WALL-E, the robots look like boxes on wheels (or tracks or legs, if necessary) and have robotic arms with different tools for different tasks. They can be built up of 10x10x10cm modules. Currently they are still in the prototyping-phase and operate in a simulated mine environment but will hopefully be ready to hit real mines in two years.

These small robots could evoke a big leap forward in the industry that currently employs about 20 million people around the world, in both open pit and underground mining, using technology that is at least a century old. 'The current technological paradigm in mining on Earth relies on heavy machinery, human labour, drill and blast bulk mining. We can't export this way of mining to the Moon.'

### Unlocking One Challenge after Another

Having been to underground platinum mines, Erika describes them as the toughest places for humans to work on Earth: 'These mines are dark, low, hot and smell of ammonium. I spent only a few hours there but I was already struggling to breathe. The workers however spend 12 hours down there and I could not believe that we still send people to work in these conditions in 2017. Half a million people get sick every year working in the mining sector.'

So <sup>Off</sup>World has a solution to let the robots do the hard work for people and have people working in command and control centres on the surface instead. If a conventional small diamond mine employs 500 people today, it would only need 50 in the future, plus around 3000 robots. In other words, that would mean that 90 percent of the current work force would be laid off.

'But that is only half the story – the other half is that there are thousands of ore bodies around the globe that cannot be mined today because there is no economically viable way to do so. Our swarm mining robots would make mining these ore bodies economically viable and open up a whole new inventory of mineral deposits. That would mean new human jobs where there would otherwise be none. I can't tell exactly what the net effect on employment in the mining sector would be – we have not run the numbers on this yet. We won't be displacing 90 percent of the workers in the mines that we start. In many new mines, we would be creating new jobs.'

The mining robots are only 50-100kg, so hundreds of them could be sent to the Moon. 'For starters, launch capacity of our rockets is the first bottleneck. No local human labour is another. So we have to rely on small, modular, highly redundant robots with a high level of autonomy.' With different subsystems inside each same-size block with a standard interface, the robots would be able to assemble themselves.

It's unlikely that once the robots are on the Moon and asteroids and have assembled factories that there would be a necessity to send the "production" back to Earth. 'The only things that we will be sending to Earth is communications signals and maybe beaming down solar power,' Erika explains. 'If we find products that can only be manufactured in micro-gravity environment, we would bring those down. Other than that, I currently don't know of any commodities that we could get from space that we would not be able to get cheaper on Earth. Helium 3 extracted from lunar regolith is often touted as one such commodity for use in fusion reactors but we need to first build commercially viable fusion reactors before we can seriously have that conversation.'

The main question here is obviously funding. 'When it comes to development of space infrastructure projects, the markets themselves, not just technology, need to be created. To deal with this, our master plan is to first develop our universal robotics platform for the mining sector on Earth, then use that platform and money to jumpstart operations on the Moon. In other words, we will underwrite Moon activities ourselves, without relying on external investors. That's why serving the mining sector on Earth is critical for our offworld plans. And it puts us in control of our destiny.'

A lot is changing in the space industry every year. Even 1-2 years ago, remote sensing and satellite constellations were the big rage, with lots on interest in commercial space startups. This year we are already seeing the first signs of consolidation in that space. Only in the first quarter of 2017, there have been four acquisitions in this field. So it is a big deal that <sup>00</sup>World has a five-year development agreement with their mining client. They work in cycles of 3 months to unlock the next challenge. In May, they will be presenting their masterplan and vision to a small audience in Canada but in June they will be "coming out of the closet" at NewSpace, the big startup conference of their sector.

And last, but not least, <sup>00</sup>World has also hired their first Estonian employee in Tartu, who is in charge of machine learning.

## Not a Rocket Scientist

Erika's story seems to defy the myth that in order to have prospects in the space industry, one should be at least a "rocket scientist" by training. 'Rockets are just a transport segment,' Erika laughs. 'They are important but we need a wide spectrum of skills and sectors to enable space settlement. Two of my cofounders are literally rocket scientists, but one of them is now working on developing small form factor mining technologies, the other is looking at integration of off-the-shelf innovative technologies into our system. So they aren't even working on rocket engines. Five of my cofounders are aerospace system engineers, the other two are lawyers by education. What we all have in common is a strong *why* and a drive to pick up new domains fast. In the last 12 months, we have all had to learn terrestrial geology, rock mechanics, machine learning and robotics. As Nietzsche once said, "he who has a *why* to live for can bear any *how*".'

Erika herself is one of the two lawyers in her company. She studied law in Tartu University because back in 1995 when she graduated from high school, there were only two "reasonable" options for further studies: law or economics. 'I chose law because economics was too easy. I had always loved maths and physics, so law was a completely new experience.'

Photo by Jim Keravala

Erika in an underground Platinum mine in South Africa while inspecting the operational environment where the robots will be operating within 2 years.





## Australia, Estonia or South Pole of the Moon

But she only practiced as a lawyer for less than a year because it was not quite a fit for her. She had just earned a Fulbright scholarship to do her PhD in law at New York University but decided not to pursue her career in this field and joined a consultancy firm instead. She spent six years at McKinsey, was based in Australia, Singapore, Africa, and learned a lot. She then joined the executive team of a Norwegian public company producing videoconference equipment but that ended up being bought by Cisco. Her next stop was Dubai in a strategy firm solving big scale problems like how to replace income from oil on the Arabian Peninsula with other sources. That logically led to her book, hailed as “an intellectual adventure into the future of our species and an invitation to reach for the stars, literally” by Amazon.

‘At the time, we had a boutique strategy consulting firm Executive Office,’ Erika tells the story. ‘We always argued for removing the distinction between corporate strategy and corporate responsibility, and building companies and nations that from the outset contributed positively to the arc of human history as an integral part of what they were about. This always led to conversations about the most important global challenges facing humanity. Most of our clients at the time asserted that the most important issue was climate change. My co-founder and I got curious how people knew this was the most important issue. Had they looked at all other global issues? We were determined to answer those questions for ourselves (and thereby make sure that we personally were spending our own lives on issues that actually mattered), we started doing research in our spare time. That effort evolved into a book and an app, and a Kickstarter project and a collaboration with 150 volunteers.’

So the space is no longer an abstract idea but rather a collection of actual locations like the Far East or Australia. ‘We don’t use the word “space” anymore as we are looking into specific areas like the low Earth orbit, the South Pole of the Moon, or Mount Sharp on Mars – these are all different places with very different environments.’ Also, people working in the field, while referring to going to other planetary surfaces to stay, no longer use the paternalistic term “colonise” but “settle” instead.

For now, Erika herself has settled down in London with her family (and to those who always keep asking, she assures them that she is not related to Toomas Hendrik Ilves). <sup>off</sup>World has offices in Pasadena, USA, and in Vienna, Austria, and obviously she still has to travel a lot but she does not really mind. She will still make time to come to Estonia at least once a year. Last time she was here as the inspirational speaker at the Entrepreneurial Awards Gala last October. Prior to that she attended the Latitude59 conference in May and was blown away by the bustling local startup scene.

‘The fact that we have survived as a nation in that small dark corner of the world is a miracle,’ Erika told Rainer Sternfeld in his podcast “Global Estonians”. ‘It’s not only about the future of Estonians but all the people of the world. It’s all about the perseverance. We will need a truck load of that to be able to settle space!’

As she always introduces Estonia as a “small and fearless” country to those who have never heard of it, she also encourages Estonian companies to benefit from the “space race”: ‘There is no reason why Estonian companies could not be part of the commercial space ecosystem, pushing the final frontier. There are plenty of opportunities but (1) you need to be able to imagine things that are not there today and (2) find a way to pay the bills while you are developing a new technology or application.’



# A Place for Independent Minds: Estonia's New Brand Concept

**Estonia.ee – the country's official gateway page – focuses on three core themes: digital society, a clean environment and unspoilt nature, and smart people.**

By SILVER TAMBUR

Nation branding – measuring, building and managing the reputation of countries – is still a developing field in which experts are searching for the right answers, sometimes through trial and error, sometimes learning from the best.

As in many fields in the last 26 years since Estonia regained independence, the country has had its fair share of experience in both. Occasionally, the Estonian people find that tried and tested foreign experience is beneficial, at least to get the ball rolling – but then the local independent minds tweak the existing rulebook and find a way of their own.

Estonia's still developing a new branding concept and the whole process behind it is the epitome of this national mind-set: listen to what the others suggest and advise but ultimately find your own distinctive way.

## The Search for New Branding

The new web platforms came about from practical need – various institutions and entrepreneurs complained for years that the way Estonia was officially presented abroad needed improvement.

In a study conducted in 2014, Enterprise Estonia (EE) questioned almost 500 top managers and CEOs of Estonian companies and asked how many of them had used the 'Welcome to Estonia' logo when selling their products or services in foreign markets. The results were not exactly cheerful – only four percent had used it in the past and just two percent continued to use it. 50 percent of the entrepreneurs said that a thought-out Estonian brand would be helpful.

'The "Welcome to Estonia" logo was introduced in 2002 and was used by the tourism sector. Since then our country has made a considerable leap. Estonia has focused on export in recent years and our exporters need to feel comfortable when presenting their companies abroad. You cannot necessarily sell products with a logo that invites tourists to visit our country – even if it has warm underpinnings,' says **Piret Reinson**, who has led marketing at EE since June 2016.

Hence, the search was on for something new. After first there was a stillborn attempt in 2015 in which EE initiated a public competition to find a new logo and branding style (the competition drew 650 submissions – none convincing enough), EE started again from scratch. This time, the task was not to find a logo, but to create a new gateway page – a kind of visit card itself – and a coherent branding toolkit.

'Our task was to create a digital environment that takes into account the interests of Estonian tourism and the public sector as well as our exporting businesses – and that includes exporting our culture,' Reinson explains.

## How to Distinguish?

EE assembled a professional team to meet their aims called the **Estonian Design Team**, or **EDM**, to find something more quintessential – what are Estonia and the people who live here about and how do we digitally communicate that.





'Branding is a complex process – there is no one solution or miracle logo that would be one answer for all,' **Alari Orav**, the team leader at EDM, says. 'The international image of Estonia has formed on the basis of the remarkable and not so remarkable developments in our country. It is this image that shaped our approach towards the new branding.'

Orav says that over ten people were directly involved in working out the new concept; approximately four hundred contributed with additional input.

The new web platforms that were launched in January 2017 are the fruits of their labour.

Estonia.ee – the country's official gateway page – focuses on three core themes: digital society, a clean environment and unspoilt nature, and smart people. Brand.estonia.ee is essentially a toolkit, containing useful thoughts, tips and tools for everyone who wants to share something about Estonia with the world – mainly useful for tourism and the public sector.

The new digital gateway, minimalistic in design and strikingly blue, greets people with the slogan, 'Estonia is a place for independent minds', elaborating that it's a 'country that extends beyond its borders; here bright ideas meet a can-do spirit'. The independent spirit is further amplified by another slogan, 'we always find a way'.

The prevailing intention is to highlight a society that uses digital means to complete many tasks, and in the process draw attention to Estonia's international e-Residency service. Secondly, it places importance on showing what matters most for ordinary Estonians – the fact that wherever one lives in the country, they're never too far from the forest or unspoilt nature. The ultimate aim, Orav points out, is to show that these two are somewhat combined – the less time you spend on tedious daily duties, the more time you have for leisure or the outdoors.

'Estonia is already well known enough as a digital society – hence our emphasis on this topic. When it comes to our nature, such as forests and bogs, it is not as widely acknowledged – but looking into the future, we believe that the appreciation of unspoilt nature will become globally more important,' Orav says.

The idea to accentuate the can-do attitude in the country was actually recommended by people outside the core team – the concept that was backed by some of the non-native Estonians. 'There was this notion that you can get things done in Estonia,' Orav explains.

The assumption that Estonians are individualists is not an alien concept to anyone who knows the country well or has spent some time here – it also helps to explain the preeminent motto, 'Estonia is a place for independent minds'. 'We don't like when we are ordered around. The fact that we have coped under – or fought against the foreign powers – has made us very independently minded. Naturally, the downside is that we quite often struggle to agree amongst ourselves – nevertheless, we try to portray a certain stubbornness in a positive way with our new concept,' Orav describes.







## Surprising Facts

Estonia's new page also draws the spotlight to previously unknown or little known facts – such as that there are 2222 islands and islets in Estonia; that 22 percent of the land is covered by swamps and bogs; Estonians hold 133 000 documented folk songs; or that there are over 190 nationalities living in the country.

Perhaps the most unexpected is the assertion that 60 of the 65 glacial erratic boulders of northern Europe lie in Estonia – 62 known boulders greater than 30 metres in circumference.

Domestically, the new branding concept's association with boulders raised many eyebrows – it doesn't prominently feature on the new estonia.ee site itself, but rather on the brand.estonia.ee toolkit platform. According to Reinson, the boulder as a branding template was an accidental find. 'When we were searching for fascinating facts for the new gateway page, we discovered that Estonia has more glacial erratic boulders than any other country in Europe. There was previously this criticism that Estonia's image is too boring and that perhaps there is something peculiar missing – and we thought, these stones are cool as image templates, so let's use them!'

Orav says that despite the criticism at home, the largest branding blog in the world positively highlighted the use of boulders. 'We can always argue whether something is right or wrong – but it doesn't do any harm to have something unique either. For example, Finland emphasises the Northern Lights in their branding. Saying this, we never intended to use a boulder as a logo, but simply as one of the design elements. The new gateway page, its colour and visuals are the main elements.' He doesn't rule out, however, that years down the line, people will have embraced the boulder imagery and think that it wasn't a bad idea after all.

The branding concept also introduces a brand new font called 'Aino'. It was designed by Estonian type designer **Anton Koovit**. Another aim of the design team is to place more emphasis on the letter 'e' in the name 'Estonia'.

AINO  
headline

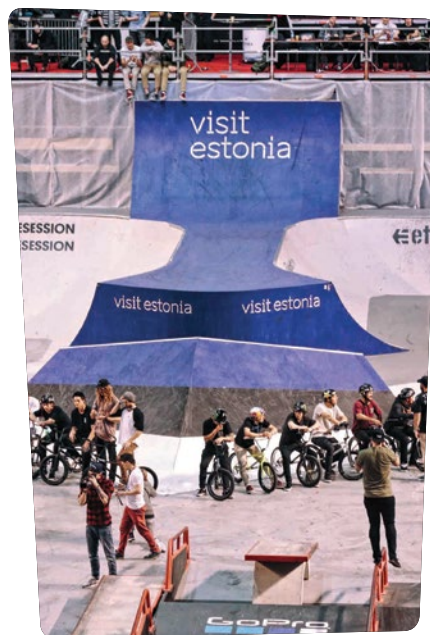
AINO  
regular

AINO  
bold

smartest, cleanest,  
bravest, strongest,  
coolest, clearest, busiest,  
weirdest, simplest, fastest,  
deepest, happiest

explore estonia

WELCOME!



efficient  
egalitarian  
empowering  
e-residency  
expanding

efficient  
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efficient  
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## Still a Work in Progress

The new branding and the estonia.ee page is still very much a work in progress. The design team has taken some of the criticism on board – for example, adding more cheerful pictures and videos to the site, since many thought that the first impression was rather gloomy.

Reinson and Orav explain that the team is constantly looking for ways to distinguish Estonia from other countries and that inevitably means doing things in a different way – and not always as the country is perceived locally. There is also an international survey that aims to find out what people in different countries think or know about Estonia – one doesn't have to explain to Finns where Estonia is situated; but the same cannot necessarily be said about some far-flung country in Asia, for example.

'Now the real work begins. The success will be evident only after it all comes together as envisioned and Estonia's international reputation goes up,' Reinson concludes.



Let's Do It! in Kosovo

# Estonia Leading a World Cleanup Day – Staying Stubborn and Uniting People

By HELENA LÄKS

In Nigeria



‘No country stands alone,’ goes the refrain of one of the most popular Estonian songs of the last century. The song, written in 1987 by Alo Mattiisen and Jüri Leesment, was born as part of the resistance to the opening of large phosphorite mines in Estonia’s Virumaa region, which turned out to be a success and encouraged and motivated Estonian masses to ditch the fear of the Soviet regime. Not only that: it also gave back faith to Estonians in the power of collective action carried out by consenting individuals (as opposed to the regime-imposed collectivism). You have probably read or heard that we, Estonians, sang ourselves free; well, it wasn’t all that simple, but indeed – this regained faith brought the whole nation together to sing for a better tomorrow and a country free of foreign oppression. So you might see why Estonians find their song festivals pretty epic (they are massive!), and by epic, amongst other things, I mean something you don’t hastily compare other things to. Now let me introduce you to **Let’s Do It! World** – a civic-led mass movement born in Estonia in 2008 and epic enough to be compared to our song festivals. To date, Let’s Do It! has engaged over 100 countries and about 17 million people to clean up illegal waste, making it one of the fastest growing environmental movements in the world. And the ambition doesn’t stop here: the movement has scheduled **World Cleanup Day for September 15<sup>th</sup>, 2018**, planning to engage people in 150 countries to organize massive cleanups on the same day.



## Not an Environmental Movement

It is no news that illegal littering is a worldwide problem. In 2007, a small group of people approached tech entrepreneur **Rainer Nõlvak**, introducing their idea to solve Estonia’s illegal waste problem in about five years with the help of volunteers. Nõlvak was very much aware of the problem: ‘I’m a solitary type of a guy and I like to wander around in the forest. At some point I started noticing that I’m no longer alone in the woods – there was a remarkable amount of car tires, dressers and plastic bags. This combination felt violent. I thought that I should make one effort to change this – if this doesn’t help, I guess I have to move to Mars.’ He agreed the problem needed to be tackled, but his response blew everyone away: ‘Stop, we will do it, but we will do it in just one day!’

And they did it. Estonia was cleaned in just five hours. ‘True, something like this had never been done before and at the beginning we had no idea, how to do it. However, we were certain this can be done,’ Nõlvak recalls. After all, *talgud*, a form of communal work which brought voluntary helpers together to get some bigger farm works done, was once hugely popular among Estonians.



In order to clean up about 10 000 tons of waste, 40 000 helping hands were needed. However, as in most countries, waste management laws would normally not allow volunteers to handle waste. Nõlvak admits: ‘Yes, 50 000 people effectively broke the law about handling waste. We could have been arrested but I told the ministry: “If you don’t want to help, we can leave all the collected rubbish in bags outside your building”.’ The ministries and municipalities were convinced, quite soon becoming one of the biggest partners of the action.

Altogether more than 500 official partners were engaged. There were competitors working side by side, not making a fuss about the fact that their rivals were also involved. ‘We were told that at some point we were like the mafia – nobody would say “no” to us,’ Nõlvak says.

The news about Let’s Do It! went viral and circled the world. ‘After the first cleanup event, we put a video up on Youtube with a good and special energy. People around the world started writing to us, asking if they could clean up their countries too. We told them of course!’ Eva Truuvverk, one of the idea’s originators, recalls. The global request resulted in a new project called World Cleanup 2012, an initiative that called all the countries in the world to clean up within one year. The people who started the Let’s Do It! action in Estonia, undertook a new challenge to keep Let’s Do It! World going. By the end of 2012, the network had grown to 96 countries. Currently Slovenia holds the participation record in Let’s Do It! – almost 14 percent of the entire population participated in the cleanup day. That was just the start, because the same initiating group now leads Slovenia towards Zero Waste, a systematic change that will reduce production of trash close to nothing. According to Zero Waste Europe, the world’s first Zero Waste capital city will most likely be Ljubljana. The Let’s Do It! initiative has started a long-term change and has grown into much more than just one event celebrating volunteering.

As Let’s Do It! is fighting with the planet’s trash problem, it makes sense that it is often referred to as an environmental movement. Rainer Nõlvak somewhat disagrees: ‘Let’s Do It! is not an environmental movement. We are about changing the behaviour of people.’ The latter is essential for reaching the point where it’s possible to keep the world clean after the clean-ups. This means a lot of educating, lobbying, programming, (re)designing, networking... On the road towards that goal, Let’s Do It! refrains from shaming and shocking, believing in empowering instead, using waste mapping data, engaging professionals of various fields and giving a platform for people to share their experiences.





In India

## World Cleanup Day – Celebrating Humanity

The event for World Cleanup Day will be exceptional for two reasons. For one, for the first time in history, all the world's trash will be visualized on one global world waste map and secondly, 5 percent of every community is called to participate in cleaning it up.

'The problem here is that people are adapting. We are good at that. As we speak, billions of us are adapting to life in trash. Once they adapt, they forget about clean nature. They don't dare to dream of clean. Many of us have already forgotten, perhaps. To change all that, we don't have too much time,' Rainer Nölvak said at Let's Do It!'s Clean World Conference in Tallinn this January. Breaking the destructive habits and creating better ones only gets harder, so it's important to act asap. World Cleanup Day takes place on September 15<sup>th</sup>, 2018 – why not earlier?

The Let's Do It! model, briefly, is made out of four ingredients: team building, cooperation with a wide range of partners, waste mapping and communication. Even though the model itself was already established back in 2008, its application throughout the entire network takes time. From that standpoint, the 15<sup>th</sup> of September 2018 is approaching very quickly.

To make a global event with such an ambition happen, there is a need for a strong global partnership between various networks, NGOs, as well as people who want to stop the waste pollution and throw-away mind-set. Let's Do It! World is an accredited member of the United Nations Environment Programme, working closely with Zero Waste Europe, the International Solid Waste Association, JCI and many others. It is just a start and Let's Do It! activists are actively looking for new partners around the world.

## E-state and World's Waste

One of the main focuses this year is technology: to fully understand the scope of the trash problem before the big World Cleanup Day, the entire world's waste needs to be mapped, using modern technology and volunteers for locating and mapping the trash. The software for creating the ugliest map ever will be released around autumn 2017.

Estonia, the birthplace of many technology startups like Skype and Transferwise, offering e-Residency to foreigners who want avoid bureaucracy and use Estonia's famous e-services, is a suitable place to create this kind of a technical solution. This solution could be used by municipalities, companies, other NGOs and many others. 'To date, there's no clear understanding of how much illegal waste is out there. All we know is that waste pileup has already created alarming problems with the spread of diseases, floods, pollution of drinking water, killing of fish, birds and animals, and even people,' comments Eva Truuverk.

Communication activities are planned mainly for 2018: this is when the whole world will be invited to join in World Cleanup Day and take real action.

'The plan is to start cleaning up in Japan at 10AM, then move around the world with the sun. The last place to clean up is Hawaii. For 2019, the plan is to introduce the idea of "keep it clean" to potential partners – governments, corporations, citizens – so that other world cleanup days won't be necessary any more,' explains Eva Truuverk.

A lot is going on in the world right now, the majority of it rather negative. During these difficult times, humankind could use something positive and downright epic to feel united. Why not give Let's Do It!, this huge movement, with its stubborn Estonian roots, fighting against nothing and no one except trash, a chance to bring us all together. After all, "No country stands alone".



In Russia





# Trash-to-Trend Fashion with Upmade Software

By ANN-MARII NERGI

Estonian fashion designer Reet Aus and her team have a very straightforward plan – to save the world from textile waste by selling data-based software to fashion brands.





'Since 2002, all of my collections have followed the principles of upcycling – a process which brings leftover materials back into the production cycle with the help of design. I was (and still am!) so excited about the possibilities of upcycling that I enrolled in a doctoral program and began working on my dissertation entitled "Trash to Trend: Using Upcycling in Fashion Design",' says sustainable designer **Reet Aus**. In four years, she has taken her passion to the next level and created software which enables brands and manufacturers to apply industrial upcycling methods and turn textile leftovers from cost to value. **Upmade** software has already been noticed worldwide – this year it was one of the finalists of The Ecolab Award for Circular Economy Digital Disruptor. The jury of this reputable competition explained their choice, saying that this software really has the potential to make production of globalised mass clothing more sustainable.

Upmade is a production and design method that can be implemented with the help of software. The software itself won't solve the problem, but it creates the opportunity to receive information about the volume and material of leftover textile from production. For example, the software makes it possible to predict how much will be left over from a certain volume of jeans going into production. 'The Upmade software uses algorithms created by us, which is our main know-how. The software helps us to share our knowledge in the best possible way. It is the first level of value creation,' explains **Marko Kiisa**, Manager of Upmade.

But the reduction of waste is not only achieved on the basis of information – someone needs to create new garments out of leftovers, someone has to sell them in order to demonstrate the effectiveness of this approach in financial terms and not just in terms of environmental

sustainability. As cynical as it may sound, large fashion retail chains have never been concerned about the mountains of waste they have created in developing countries – dealing with this problem is only seen as an additional cost and therefore there is little interest in solving the problem. The factories of developing countries have no choice but to literally leave tons of textile leftovers "behind the building" in a pile.

'Many brands want to do the right thing, but if that is something one has to systematically spend extra money on, it is just left out of the business plan,' admits Kiisa. This is where Upmade comes into play – the software enables designers to think about what to do with specific leftovers, in other words, to turn waste into money.

How to make designers and producers aware of the software, while at the same time profiting from Upmade? What is the business plan of Upmade? 'First and foremost we are approaching the headquarters of fashion brands, because they hold the keys to solutions. Garment producers who are under contract cannot produce clothes for another brand from the leftovers of a third brand, at least not at the industrial level. Our software offers brands the opportunity to get rid of their own waste, by creating products which will bring additional profit. And we will earn from the additional revenue they make,' explains Marko Kiisa. To producers/factories, Upmade offers the chance to get rid of textile waste systematically by producing upcycled garments and profit rather than disposing of material bit by bit or throwing it away. Each producer who starts to implement Upmade technology will receive a special certificate. The Upmade certificate confirms that the producer is capable of industrial upcycling and follows specific social and environmental criteria.





Photos by Laura Kallasvee

Reet Aus' own fashion label Up-Shirt includes T-shirts with an upward pointing arrow, which are made of leftover textiles. These shirts save an average of 91% of the water and 87% of the energy used in production and create 80% less CO<sub>2</sub>. Under the label Reet Aus, she also produces tops, business shirts and jackets for women on the principle of slow fashion. Those clothes are the proof of the concept of Upmade technology. They demonstrate the capacity of the technology as well as financial viability for large corporations because the model is simple to scale up. 'Since completing my doctoral studies, I have been applying my research to the real world. In 2012, I began cooperating with Beximco, one of the biggest apparel manufacturers in Bangladesh. In my collections, I implement upcycling in the early stages of the mass production process. This has improved efficiency and reduced environmental impact – each item we produce this way uses, on average, 70% less water and 88% less energy compared to regularly mass-produced items,' says Aus.

Currently, three producers have Upmade certificates – Kishor Export in India; one of the largest factories in Southeast Asia – the above-mentioned Beximco in Bangladesh; and the Estonian shirt producer Sangar. Beximco is also a member of the ILO (International Labour Organisation), meaning they are regularly audited for their employees' working conditions, salary levels and social guarantees.

A fourth factory, in India, is set to join the ranks soon and negotiations are ongoing with many other producers. The whole process of waiting for a larger fashion brand to experience the "click" moment and start thinking of upcycling as part of their business strategy takes time.

## The difference between upcycling and downcycling

### WHAT IS THE DIFFERENCE BETWEEN UPCYCLING AND RECYCLING?

In general, there are three terms used when talking about the waste hierarchy.

**Reusing** describes practices when, for example, a glass bottle is used again for the same purpose – or when objects are used repeatedly for their intended functions, as in the case of all common second-hand stores.

The other two terms – upcycling and downcycling – go under the umbrella word Recycling.

**Upcycling** means that, rather than transforming a material, it is given a new quality or value through design – which is what I do.

**Downcycling** covers the transformation of potentially useful material into another product through the use of energy or resources, like plastic bottles that are downcycled into another form of plastic of lesser quality.

These terms are often used in the wrong situations. Furthermore, calling downcycling upcycling gives the product more value in the waste hierarchy, downcycling consumes more energy. The most sustainable approach is of course to reuse products in their original functions. This is followed by upcycling, which is the most ethical method of recycling – for example, making new clothes from old ones.

'Several large brands are currently focusing on post-consumer waste because the consumers are here in Europe and North America. We see those volumes and we are demanding solutions. But we do not see the production waste created in third world countries and hence we are unable to demand anything. It just demonstrates the complexity of the problem,' explains Marko Kiisa. At the same time, the problem starts with the lack of know-how or the lack of will to make use of leftovers whilst designing or producing clothes.

'I can give an example about real production data – one global fashion brand orders 250 000 male shirts from a single factory every month. According to Upmade's calculations, we could produce up to 25 000 additional upcycled shirts from these textile leftovers. That would reduce leftovers by more than 50%. And this 10% of additional production is where Upmade can also earn revenues from its technology.'



**When looking for success, very few people start by looking into their past, but that's exactly what has given Adam Rang – the founder of Rang Media House – the edge he needed to take his startup from idea to flourishing business in just over a year.**

# Rang Media House Built on Strong Estonian Foundations

By ROBYN LAIDER / Photos By ATKO JANUSON

## An Estonian Past

Rang Media House's founder, Adam, comes from a background that includes a different Baltic nationality on each side of his family – Estonian on his father's side, and Latvian on his mother's. Both of his respective grandfathers fled from Estonia in 1944 before being settled in the UK: 'After the war, my grandfathers lived in displaced persons camps until the UK gave them refuge. They were moved to a steel town called Corby that needed manual labour, so there's still a big Estonian population there today.'

Unfortunately, Adam's Estonian grandfather passed away before he was born, but Adam's father – who felt very close to his Estonian roots, was a strong source of the wonder Adam had with the country growing up. He tells me that, 'When I was a kid, Estonia was like a mythical, far away, fairy-tale land. It's incredible how much progress has been made since then and I love living here now. Estonian freedom looked almost impossible when my grandfather died so I hope he can see how successful the country has become and the fact that there's now a business here with his name on it.'

## Shaped by his Own History

With a lot of international experience in his own right – Adam went to the University of Cape Town before becoming a staff reporter for the Cape Argus Newspaper, until eventually moving back to London to work as a News Consultant for Mischief PR and a Communications Associate for BAE Systems. It was during this time that, knowingly or not, he moulded his vision into what Rang Media House would eventually become.

In his own words, Rang Media House 'makes and distributes web content. It's marketing, but it has to be entertaining and useful so we make it to the same standards as journalism. The aim is to create content that people actually want to consume and share, rather than boring adverts.'

## An Incredible Launch Pad for Growth in Estonia

Rang Media House is unique when compared to a number of other startups; it allowed Adam to make a big leap from working for someone else to starting his own business all in one go. After quitting his day job in the UK, he was originally only focused on Estonia as an additional market to the UK, seeing Estonia as a great location for growth and a path for expansion into better international networks.

However, it became clear very quickly that the Estonian market should be the exclusive focus of his business.

After starting the business at the end of 2015, Adam took a month-long trip with the purpose of building networks with Estonia in January 2016. However, with the success he had on the trip in terms of building contacts and business connections, it was only two months later that he found himself making the permanent move here.

From there, it was like a lightning strike. The business is now based at Lift99 in Telliskivi Creative Hub and specialises in digital services. Among some of his clients are TransferWise and Toggl, not bad for just having started the company only a year ago.









Adam and his company have already been featured in a number of local and international media sources, but he says the ultimate compliment is when former President Toomas Hendrik Ilves tweets their content. Additionally, in regard to the work he does, he says, 'the interesting thing about it is, watching people share what you've written and seeing their comments. Seeing debates. When you can start a debate and people are proud to associate with the work you've created by sharing it themselves. That's what makes me proud.'

### Estonia Just 'Gets it'

All of these mentions are just part and parcel of the message he's been telling companies for years, and the reason his services are so important – 'in the past few years, audiences have moved online and now get much of their information from social media feeds and search engine results. That's where the eyeballs are going, so that's where Rang Media House focuses on distributing marketing messages. Adverts don't work as well online so we need to think like journalists to create interesting content instead'.



So, after having started and grown so quickly I'm super curious about Adam's plans for the future of his business, luckily he indulges my curiosity and tells me:

'We support really great clients here in Estonia, most of whom are focused on serving location-independent entrepreneurs, so what's important now is to grow with them. I think it's always better to get more work from existing clients as you prove your value over a long-term period, rather than starting too many new relationships. I think location-independence is one of the most important trends changing the way people live and work around the world. Estonia is leading that change by providing e-Residency and cross-border digital services like TransferWise so it's a huge honour to be here helping them create a more borderless world.'

As a final note, when looking back at Rang Media House's beginnings in the UK, Adam is very forthright when comparing the opportunities Estonia has provided:

'The opportunities I've had in Estonia, I don't think I would have had anywhere else in the world. Estonia was the best place to start this company. London has 10 million people, but it's actually more difficult to get to know people in big cities where everyone feels anonymous. Estonians are well connected so it's easier to meet the right people and figure out how we can help each other, especially as Estonians are so straight-talking too! For Rang Media House specifically, there's a lot of demand for English web content because Estonia has so many digital service providers that want to reach global audiences.'

Additionally, Adam now serves on the board of the British-Estonian Chamber of Commerce in order to help more companies in both countries connect with each other.

'Estonians are really good to work with because ... they just get it. When it comes to the stuff we are doing about digital content, when it comes to new ideas, Estonians just get it and embrace new ideas. Whereas in the UK I had a hard time just convincing people that web content could be more effective than traditional advertising.'

'I have one regret about quitting my job to start a business and move to Estonia – I should have done it sooner,' says Adam.

For more information on Rang Media House, the companies they work with and services they provide, check out their website at [www.rang-mediahouse.com](http://www.rang-mediahouse.com)



A portrait of Luukas Ilves, a man with dark hair, wearing a dark suit jacket over a blue sweater and a white shirt with red buttons. He is standing in front of a blurred city street at night with bokeh lights.

# Estonia – the Digital Presidency of the EU Council

Estonia will take over the rotating presidency of the European Union Council on the 1<sup>st</sup> of July 2017. Among the top priorities for the six-month stint at the helm of the EU will be the digital development of Europe.

**Luukas Ilves**

The counsellor for digital affairs at the Permanent Representation of Estonia at the EU in Brussels



Video projection dome

**Luukas Ilves (29) is the counsellor for digital affairs at the Permanent Representation of Estonia at the EU in Brussels. First of all we asked him to frame the situation and challenges the EU is facing in this context.**

'Digitisation is changing every sphere of economic and social life – and we are really only at the beginning of the process. This is a tremendous opportunity. The solutions to the really hard problems, the dilemmas we don't yet know how to solve, will come from digital disruption: lowering our carbon production, ensuring health in old age, sustaining the European social model, safeguarding our citizens. But digital disruption can also affect political systems that are well functioning and accountable and economic models that bring great value to people.

The challenge for every part of the world is how to win from the upsides and minimize the downsides. And that is also what Europe really has to do now.

Europe is still the world's second largest economy. But it's important to say "still", because looking at the growth rates in China, South East and South Asia, there is nothing to guarantee Europe's role as a leading economy as it was in the second half of the 20<sup>th</sup> century.

European countries lead the world in terms of digital innovation, internet connectivity, e-commerce and e-government. The problem is that we don't get the same multiplier effect in a lot of digital categories that we do in other parts of the economy within the single market, because many restrictions still apply within the EU. What we can do in Brussels

is to make sure that we give our companies the same home field advantage that you have in China or the US – instant access to a market of 500 million people.'

With the reputation of Estonia as a digital "Musterschüler" of Europe, the expectations certainly are high that at least some of this digital enthusiasm will spill over on the rest of Europe.

Luukas Ilves is hopeful that the presidency will have an impact:

'The core job of the EU Council presidency is to run the legislative process in the Council, where Member States negotiate on proposals that become EU law. Things don't happen overnight: EU law-making needs to take everyone's views into account in order to agree on common rules for EU countries and 500 million people.

We have a wide range of legislation on the digital economy in the pipeline. Two years ago, the Commission proposed the Digital Single Market strategy, a large package of new and revised EU rules designed to make sure the EU single market works as well in the digital economy as it does for cars or food. The (previous) Slovak presidency of the Council and now the Maltese presidency have already reached some early successes, finalizing an end to roaming charges in the EU (which will take effect on June 15 of this year) and guaranteeing consumers access to streaming videos and music when they travel.

Some important parts of the Digital Single Market will remain for us to finish or at least get as far as we can. In addition to updating Europe's





Self-driving bus

## A chance to showcase digital tools in action

'We want to showcase what digital tools can do in practice. As part of the presidency there will be thousands of people coming to Tallinn. We are planning to have **self-driving buses** to move people from the town centre to the presidency venue to showcase what autonomous vehicles can do. This is all in a testing phase today but is going to completely revolutionize logistics within 10-15 years. It isn't just about saving a little bit of money. If you have self-driving vehicles in traffic it becomes safer, environmentally friendlier, faster.

Also we plan to set up a **video projection dome** in the EU Council building in Brussels. There you will be able to see 360-degree immersive videos of events taking place in Tallinn or have a meditative break while enjoying the nature of Estonia. With this dome we can show how we can overcome physical distance by using technology and bring people together.

We are also in the process of building a **web portal** which will include a set of digital tools to help organize presidency events in a paper-free environment. Furthermore, our visitors will be able to use a digital guide solution to visit the sights in Tallinn.'

telecommunications, copyright and broadcasting rules, we are also working on quite a lot of new legislation to make e-commerce work better (covering geo-blocking, VAT, contract law, and even parcel delivery!). There will also be legislative work on cyber security and electronic privacy.

It's hard to predict right now what our own exact accomplishments will be. The presidency is built on teamwork, not just during our six months but also with the previous and following presidencies. Right now, the Maltese presidency is showing how a small country can do a really good job in building compromise.

But the Presidency is not just about negotiations, it is also an opportunity to draw attention to our political priorities. It probably surprises no one that, as a country, we have our own broader vision of how Europe could really benefit from the digital revolution. This is our chance to leave a positive imprint on Europe.

The Estonian take is that we need to embrace the digital revolution across the board. Changing telecoms or copyright rules is really necessary but we also have to look at how digital affects transport regulations, rules on health care, foreign policy etc. – there is no single area of life that is not affected by digital today. We want to pull this together in the core idea that free movement of data should be the fifth fundamental freedom of the EU.

To support this idea of a fifth freedom, we will look at some questions in particular:

First, rules on data localisation. In a single market it doesn't make sense to have rules that say you need to store data in a particular country. If a company operates and offers services across Europe then they should be able to choose where in Europe they keep their data. We are going to show some political attention to this question.

Second, we will look more broadly at how the data economy is really going to work in the 21<sup>st</sup> century. Data is the new oil or the currency of the digital economy (pick your favourite metaphor!) and the big economic question of the 21<sup>st</sup> century. Everything we do uses a lot of data and produces a lot of data. You can create a huge amount of value from analysing big data and offer new interesting services. We want to put the individual at the centre of the data economy – to be able to realize economic value from the data, hold the ownership and control over how it's being used.

Also, cross-European cooperation on e-government is a deep passion for us. The practice is still very different across Europe and it's not as easy to deal with different countries. The idea is to go into specific policy areas and try to make it better across Europe with some simple steps like accepting the digital signature or how we deal with data and documents. We are going to use the presidency to organize events on this, to have political discussions on this, and to look at how we can make EU legislation more e-government friendly.

We want to show not just in words but also in our deeds how being more digital can benefit Europe, both through legislation and how we do business.'

# From the Russian Capital Moscow to Tallinn, the Capital of Estonia

By MARIKA MAKAROVA

**They came to Estonia two and a half years ago. They are Serge Chuzhanov, his wife Anna Rubinshteyn and their two sons. Now they like it in Tallinn so much that they wouldn't mind staying for good.**

It was the end of 2014. The head of the Moscow office of an IT company called Parallels Inc., headquartered in Seattle, USA asked its employees which of them would like to move to Tallinn to work at the newly opened branch of the company. It did not take long for Serge and Anna to make up their minds. 'Although it was quite an unexpected offer, it took us only about an hour to discuss with each other the pros and cons of the opportunity to move, to work and live in another country. In the beginning of 2015 we were here in Estonia, in Tallinn,' they both recall laughing.



## An Easy Decision

Serge works as a programmer at Parallels Inc. and Anna is the owner of the dance school RubyAir. They had previously never been to Estonia and did not know much about local life. Enterprise Estonia and the company Move My Talent – an entity providing a smoother and easier experience for companies and people getting settled in Estonia – helped them with visas, work permits, and finding a new place to live. The rest they dealt with themselves. They found a suitable rental apartment and a Russian-language school for their 10-year-old son as well as a Russian-language kindergarten for their 4-year-old toddler.

It has not been difficult with language either. Since most of the staff at the Tallinn office of Parallels comes from Moscow, the working languages are English and Russian. Conducting business at public institutions is easy in Russian and English, although both of them have taken Estonian courses and Anna said a few words in Estonian every now and then during the interview. 'I came to another country, I speak Russian and the locals can speak Russian with me. That's incredible,' says Serge gratefully. In addition to language courses, Anna has also taken private Estonian lessons but claims that Estonians speak so fast among themselves that it is impossible to understand them. It is better to watch TV, as they speak more slowly and clearly. But with just a little language practice – it is easy to get by in Tallinn in English and Russian – she says her ability to read Estonian is better than her spoken level.

## Moscow versus Tallinn

Wasn't it a shock to come from Moscow with 20 million inhabitants to Tallinn which has just 444 000? From metropolis to a boring 'village'? 'My first thought was where are all the people,' laughs Serge and then adds in a more serious tone: 'It is calm and peaceful here. There are no traffic jams, the streets are clean. Boredom comes when you have nothing to think about. I am never bored – we programmers have a world inside our heads, more so than on the outside. Anna knows more about local life than me as she is more active socially.'

Anna, an educated philologist of Malaysian language, says that she was totally amazed in the first few days at how simple and convenient paperwork is in Estonia. 'E-government is an amazing thing. Everything is done very quickly,' she praises.

For her, moving from a large city to a smaller one has been a journey in itself. 'I started to see things differently. Life in a huge town like Moscow does offer many opportunities, but it also leaves people without many important things. My day in Tallinn seems to have more than doubled in length. I didn't know what to do with all the time at first,' she laughs.

Thanks to small distances, no time is wasted in transport or in traffic jams. This means more family time. And that is a great advantage for Anna. She can even let her older son go on his own to do a spare time activity because everything is just a short walk away from home. A luxury not really available in a big city.



## No Rush to Get Back to Moscow

Here in Tallinn Anna made the decision to follow her childhood dream and dedicate herself to dancing, as well as becoming self-employed. She had done some dancing in Moscow (in addition to her daytime job) but that came at the price of less time with the family as the training was often in the evenings and performances on weekends.

The entrepreneurial woman has founded her own dance school in Tallinn – RubyAir which offers training courses in Aerial Yoga, Aerial Acrobatics and Pole Fitness. She has taken some special courses for dancers and teachers and has, as an aerial dancer, received awards from international competitions. 'I like aerial dance, which is not really dancing in its traditional meaning, rather it is a mix of dancing and gymnastics,' she explains.

In comparing people's behaviour, both confirm that people in Russia are more open communicators, but here people are much more polite. People don't push around, cars give way on traffic crossings. Serge recalls that when he went back to Moscow for the first time after having been in Tallinn for a year, it took some getting used to. Not that much had changed in that time. But he had changed. 'You wouldn't believe how many people with angry faces I saw on the street there! I have never experienced that here.'

Anna, whose social circle is larger than Serge's thanks to dancing, adds that she sometimes feels an 'emotional vacuum'. People here do not easily make connections with strangers. Even local Russians are more closed in nature. 'If you get to know someone at a training course in Moscow, it is not uncommon to go grab coffee together afterwards. Here you can know someone for half a year but you don't just easily start to chit chat.'

Both confirm however that neither of them wants to return to Moscow as life is better, calmer and friendlier in Tallinn. Therefore they know they made the right decision two years ago to come to Estonia. Anna adds: 'I think if you want to do something new in your life, you need to take the first step. Moving is not a bad option. I recommend everyone to do it when they have the opportunity. If you stay in the same place, your life is not likely to change.' Serge also recommends that people go see new places and new challenges and test them out.

Artist's impression of ESTCube-2 by Taavi Torim and the ESTCube team

# Turning Theory into Practice: The Short Story of the Estonian Space Race

By SVEN PAULUS



Sometimes it is only by standing on the shoulders of giants that allows one to see further. Estonia is home to great minds who have shaped space science as we know it today. The last decade has witnessed a real boom in cosmic matters: the country is a member of the European Space Agency, Estonia has sent its first nano-satellite into space and is using the latest knowledge to boost the space-related industry.

If you could travel back in time to the year 1987 in Soviet Estonia and ask kids about their common dream, most probably any boy would have answered that his biggest wish was to become a cosmonaut like Yuri Gagarin, who was the utmost hero of the era. Sure, local scientists had taken part in the Soviet space race since the sixties and, at the same time, these kids had their hands and mouths filled with a sweet and sour marmalade called "Kosmos".

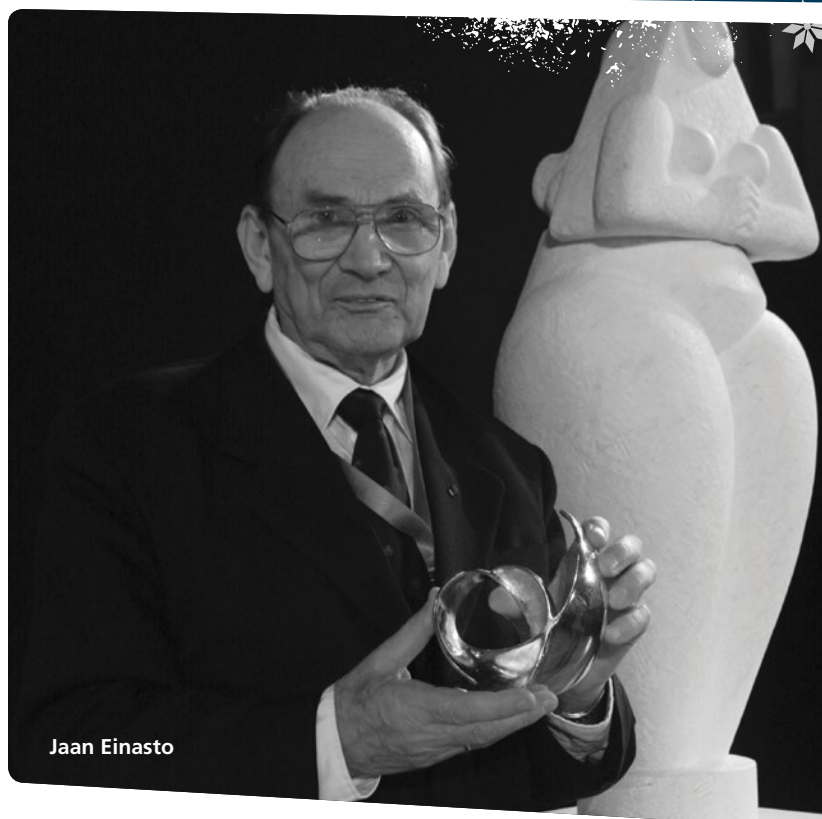
The producer of this well-known product was a factory in Põltsamaa, which provided innovative tube-food for Soviet cosmonauts. Funnily, decision-makers in Moscow were concerned about the Estonian language text written on the packages. 'The men in the space are distressed enough and now they have to read German letters,' officials said, ordering the aluminium tubes to be painted plain white.

But before Gagarin took off with Vostok in 1961, a long path of complex theories about space had to be written down. Some remarkable chapters of cosmology, replete with German influence, were put in black and white in the university town of Tartu. Since its opening in 1810, Tartu observatory, led by **Friedrich G. W. Struve**, became the most important observatory in the Russian Empire.



## The separation of the Milky Way from Andromeda

'Today every expert on the field gives recognition to the historical achievements of Tartu astronomers,' says **Elmo Tempel**, senior researcher at Tartu Observatory (TO) and Estonian Space Research and Technology Centre. He refers to **Ernst Julius Öpik**, who determined the distance between Earth and Andromeda nebula back in 1918 and provided substantial evidence for galaxies existing beyond the Milky Way. With this breakthrough he preceded the American astronomer Edwin Hubble.

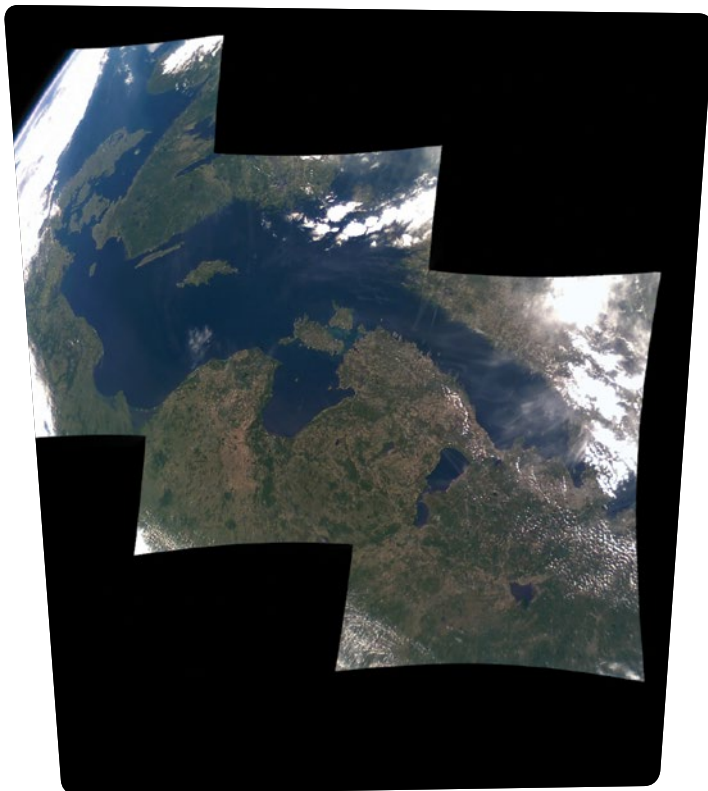


Another name Tempel wishes to emphasize is **Jaan Einasto**, an astrophysicist, whose team made a paradigm shift by discovering dark matter and the honeycomb structure of the universe. 'In scientific terms our most important results are from cosmology, founded by Öpik, and from remote sensing of the Earth, which was founded by **Juhan Ross**,' says Jaan Einasto, who at 88-years-old is still a very active scientist and a living example to many.

Tempel, who carries on their legacy has been the laureate of the Öpik stipend twice and received the Estonian National Science Award in the field of exact sciences this year. He focuses on galactic filaments, which are the largest known structures in the universe. The pursuit is to fully understand how filaments affect the observable properties of galaxies. On top of that, Tempel's work has helped to decipher how galaxies spin and grow.

'We have to combine the knowledge of cosmology and particle physics to study the character of dark matter,' says Tempel, who considers space science to be a driving force behind the development of technology. To gather the knowledge into one place the Estonian National Institute of Chemical Physics and Biophysics together with TO and University of Tartu (UT) founded the Centre of Excellence "Dark Side of the Universe" in 2016. The institution maintains close cooperation with the European Organization for Nuclear Research (CERN).

**Martti Raidal**, the leader of the centre, stands among the most cited Estonian scientists in the world. He says Estonians are participating in the CERN CMS experiment contributing to particle physics, while researchers from TO are taking an active part in the European Space Agency (of which Estonia has been a full member since 2015) missions and initiatives and plays along in the refinement of data algorithms for satellites such as Gaia, Planck and EUCLID.



## Pioneers in Earth Observation

'This year our remote sensing scientists celebrate the 35th anniversary of the book by J. Ross "The Radiation Regime and Architecture of Plant Stands". This is considered a classic work all over the world in the field of radiative transfer in plant canopies and in other branches of plant optics,' says **Anu Reinart**, director of Tartu Observatory. She adds that the book has inspired and influenced distinguished scientists over the decades and defined the theoretical bases for Earth Observation as we know it today.

The competence and international network of young scientists like **Jan Pisek**, **Kaupo Voormansik**, and **Riho Vendt** gives Estonia a solid role in participation with the EU programme Copernicus, but also helps to win ESA procurements. The team of TO space technology labs is now leading a consortium of five European partners, including enterprises, but also the famous National Physical Laboratory in the UK, to provide methodology for reference measurements of Copernicus Sentinel satellites.

## Up and Up, No Matter What!

With the creation of the nano-satellite **ESTCube-1**, UT and TO along with their many partners became a true success story, accomplishing the dream of conducting the first Estonian space mission. The project cost around 100 000 euros and ESTCube-1 was the first satellite in the world to attempt to use an electric solar wind sail.

In May 2013, after six years of development by over a hundred students and scientists, this 1 kg satellite flew into space. Being part of the Estonian Student Satellite Programme, the aim of ESTCube-1 was to popularize science and engineering among students. It served as the basis for 48 research projects, five doctoral theses and has generated six spin-off companies to date.

The best image of Estonia taken by the first Estonian satellite ESTCube-1, taken at 13:01:40 on April 28th, 2014.

'ESTCube team supervisor **Mart Noorma** did a fantastic job with the students,' says Estonian Academy of Sciences member **Ene Ergma**. The long time astronomer hints that creating nano-satellites is currently really hot stuff: 'Estonian students could be very successful in this field.' Luckily, the motivation of the youth has skyrocketed: the first satellite is now followed by ESTCube-2 and 3 projects that are led by **Andris Slavinskis**, the new leader of the TO space technology department, whose doctoral thesis was based on ESTCube-1 developments.

In 2014, Tallinn University of Technology (TUT) established **Mektory Space Centre**, where more than 15 academic supervisors and 40 students from various disciplines are involved in the Nano-satellite Programme. 'We want to develop the university's competence in aerospace technologies, making TUT better known on the playground. Our business-related fields have so far been remote-sensing technology and image processing,' says the head of the centre **Rauno Gordon**.



While participating in various ESA projects, company Reach-U has created close collaboration with Mektory and TO. Reach-U is one of the most outstanding Estonian location based solutions, GIS and cartography company. 'Lately we have focussed on forest monitoring to determine the characteristics and changes in the forest,' tells **Mattias Renel**, satellite remote sensing specialist at Reach-U.

Since scientists at TO are experts in the remote sensing of vegetation, inland water and atmosphere, researchers at UT and TUT use the satellite for marine monitoring. 'The satellite data helps to map ice conditions, thus ships can navigate better and save on fuel. It is useful for weather forecasting and maritime spatial planning,' says senior research scientist at TUT, **Rivo Uiboupin**. His colleague **Tiit Kutser** from UT adds: 'This is how we can detect oil spills, monitor potentially toxic algal bloom formations and movement, etc. It makes studying the surface of the Baltic Sea more convenient and cheaper.'





## Space Science Serving Society

The Estonian Agricultural Registers and Information Board is about to test the same technology this summer. 'We get an operational overview of Estonia's total grassland area and can easily check whether hay has been cut or not,' says **Kai Raudvere** from the agency. She hopes the step motivates supported owners to take better care of their agricultural land, as the information will be publicly visible on the web. She also sees the potential to export the modified application to other countries as well.

This application is an excellent example of how internationally published research results will become useful products for the public sector. The pilot project for this is carried out by TO's young radar remote sensing team led by Kaupo Voormansk; the main part of the software development is done by CGI Estonia. This company has also recently won contracts from ESA to create more user friendly and faster solutions for satellite image processing.

Martti Raidal gives two examples of how space-tech has shaped our lives. In 1989, a British scientist Tim Berners-Lee invented the World Wide Web at CERN and one of the early implementations of the mutual capacitance touchscreen technology was developed at the same place in 1977. 'Who would imagine life without these devices and especially without the web, which has changed our world even more than inventing the wheel?' asks Raidal. He is hopeful that Estonia will join CERN: 'This would open doors for our companies, which would then get access to technology and procurements.'

It is well-known that Estonian high-tech companies perform very well at the world level. This was proven once again by the startup Skeleton Technologies, founded in 2009. Two years after it started the company became a supplier to ESA. 'There are few developers and manufacturers of high quality super-capacitors and Skeleton had a clear advantage in mass and volume, allowing the same amount of power to be held with in a volume 10 times smaller than the competing solutions,' said CEO **Taavi Madiberk**, revealing some secrets of how the local engineering geniuses outperformed the high standards set by ESA.

*This article was supported by the European Union Regional Development Fund through the Estonian Research Council.*

## Tartu Observatory as a seedbed for new scientists

**Heli Lätt**, Tartu Observatory Visitor Centre, head of department

To popularize space science and technology, the TO Visitor Centre offers active learning programs for middle and high school students as well as for the continuous professional development of teachers, while also organizing various science based events. Our start in 2013 was met with very positive feedback from teachers and today many schools visit us on yearly basis.

We host different teachers from various areas; we educate teachers on space-related topics in general, while also trying to link information to their specific fields. Our centre is visited by more than 6000 pupils and 1000 adults annually. Occasionally high school students also visit us to pursue their research projects or to see how our scientists work. I believe that broadening the minds of the youth is the most important thing, after the success of ESTCube-1 and Estonian membership in ESA we have seen space topics become popular in our society and I think this has worked out really well.

But space is not only popular in Estonia. The new European Space Strategy that was made public in 2016 demonstrates that space technologies, data and services have become part of the daily lives of European citizens. And Estonia has significant role in it.





Estonian company Skeleton Technologies will replace space satellites with more energy-efficient ones. Aside from aerospace, Skeleton's ultracapacitors are used in other sectors, such as motorsports, heavy industry, maritime, renewables and grid.

# Skeleton Technologies Has One Goal – to Save Energy

Taavi Madiberk





Oliver Ahlberg

Skeleton Technologies is among the hundred most influential companies on the Global Cleantech 100 list offering innovative and clean energy solutions. For the second year running, key people behind the company are ranked by Forbes among the thirty most successful young leaders in the world. The company has been shortlisted for the BusinessGreen Technology Awards and named Estonian national champion at the European Business Awards 2016. The company is also going to open a production facility in Germany to increase its production capacity tenfold. Millions and millions of euros were received through several investments during last year. All of that is only a fraction of the achievements that this Estonian company has accomplished.

'Awards and being shortlisted for achievements is definitely not an aim in itself,' says **Oliver Ahlberg**, the Co-Founder and Chief Operating Officer at Skeleton Technologies. 'Our goal is to help our clients save energy and if this is considered so important that we happen to win an award every now and then it's great. So getting onto the list of Global Cleantech 100 two years in a row is great and confirms that the activities of Skeleton have a global perspective.'

This year a record number of companies – 9 900 from 77 countries – applied to the prestigious Global Cleantech 100 ranking. The list, which only includes a hundred companies in the end, is made up of key players in the field of innovative, clean technology, whose activities are predicted to significantly influence the world's development in the next 5-10 years. Like Ahlberg says, the Cleantech jury believes in Skeleton for the second year in a row.

After years of research and development, in 2009, young entrepreneurs **Taavi Madiberk** and Oliver Ahlberg decided to take the technology created by Tartu scientists into production. Today, the company Skeleton Technologies is proud to call themselves Europe's leading manufacturer of ultracapacitors. Ultracapacitors are high-power energy storage devices with more than 100 times higher power density for more than a million life-cycles, compared with the best battery technologies.

Last year Skeleton Technologies managed to receive a 13 million euro injection, led by the Malaysian venture capital fund FirstFloor Capital with additional investments from Estonian companies UP Invest and Harju Elekter. The company has also attracted large support from Enterprise Estonia.



## Ultracapacitors vs batteries

A battle as old as the technologies themselves: ultracapacitors and batteries rule the energy storage industry, fighting for a place at the top. Batteries, as the older and more established technology, wear the crown, but ultracapacitors have taken huge technological leaps forward in the past decade, and are now closing in and overtaking batteries in effectiveness in many areas of energy storage. Compared to batteries, ultracapacitors are an extremely safe way to store energy. Will Samsung turn to ultracapacitors to power the next generation? No, because batteries have high energy density, which makes them great for applications such as mobile phones. But the reason that ultracapacitors are significantly safer than lithium-ion batteries has to do with the fact that lithium-ion batteries contain lithiated materials and a flammable electrolyte that combusts when exposed to ambient air and humidity.

This was followed by the great news in 2017 that the European Investment Bank will support the Estonian company by giving a 15 million euro loan at favorable conditions. The loan has a European Strategic Investment Fund (EFSI), also known as the Juncker Plan, guarantee. Together with previously attracted capital, the total sum of financing for Skeleton Technologies is 41.7 million euros – a result which not many companies can boast. The company is developing at a rapid speed and has no lack of ambition. The funds are meant to bring graphene ultracapacitors from high-end sectors to the mass market, while moving higher up the value chain with turnkey energy storage solutions. The EFSI-backed financing will allow the company to better serve its customer base, which includes German automotive manufacturers, leading global engineering companies and the European Space Agency (ESA). The latter is one of the rarest clients a company can have. The cooperation between Skeleton and the ESA goes back some years already. 'It is already our third continuous project with the European Space Agency and it is going really well. According to current plans, we will test our ultracapacitors in space in 2018,' says Ahlberg. This means that Skeleton could replace some of the batteries currently used in satellites. Ultracapacitors are 60 times lighter and 30 times more efficient than those batteries. 'This deployment will provide an extremely high profile showcase for our technology's capabilities. At

### Ultracapacitors and batteries differ in one significant way:

ultracapacitors store energy in an electric field while batteries store energy through a chemical reaction. Now, if you just need to power your flashlight, you can buy a set of Alkaline batteries and go on your merry, well-lit, way. But if your application requires something more sophisticated, it's vital to understand the benefits of each technology.

### Ultracapacitors are what's known as *fast energy storage* and:

have high power density, meaning they can provide very high currents charge and discharge very quickly have a lifetime of over 1 million charge-discharge cycles are significantly lighter than batteries have high tolerance for extreme temperatures don't contain harmful chemicals or toxic metals.

### Batteries are known as *slow energy storage* and:

have high energy density, meaning they can operate for a long time charge and discharge slowly usually have a lifetime of about 2000-3000 charge-discharge cycles operate poorly in very cold and very warm temperatures contain toxic and environmentally harmful chemicals.

the same time, we see rapidly increasing customer traction and a growing order book down on the ground, from the motorsport industry to renewable energy applications.'

Speaking of servicing customers in the German automotive industry, Skeleton's main operating market is Europe and many clients are based in Germany. Skeleton's sales team and production unit are based in Großröhrsdorf, near Dresden. The company plans to open a new production unit for the mass production of carbon electrodes. Nearly 60 new jobs will be created there by 2019. 'Saxony has a highly developed industrial infrastructure and skilled labor force because it is home to various high tech production facilities, for example Globalfoundries, which produces semiconductors. It should also be mentioned that the Saxonian Development Bank already approached us in 2012 and offered a 50 percent grant to cover the capital costs of setting up the factory. This is a significant sum, indeed,' says Ahlberg. Although the factory is quite automated and only approximately ten jobs are needed for operations, Skeleton will hire people in Germany for other positions, such as sales people who will deal with the transportation and automotive industry. The main focus of the production unit near Tallinn, Estonia is for R&D and pilot production.



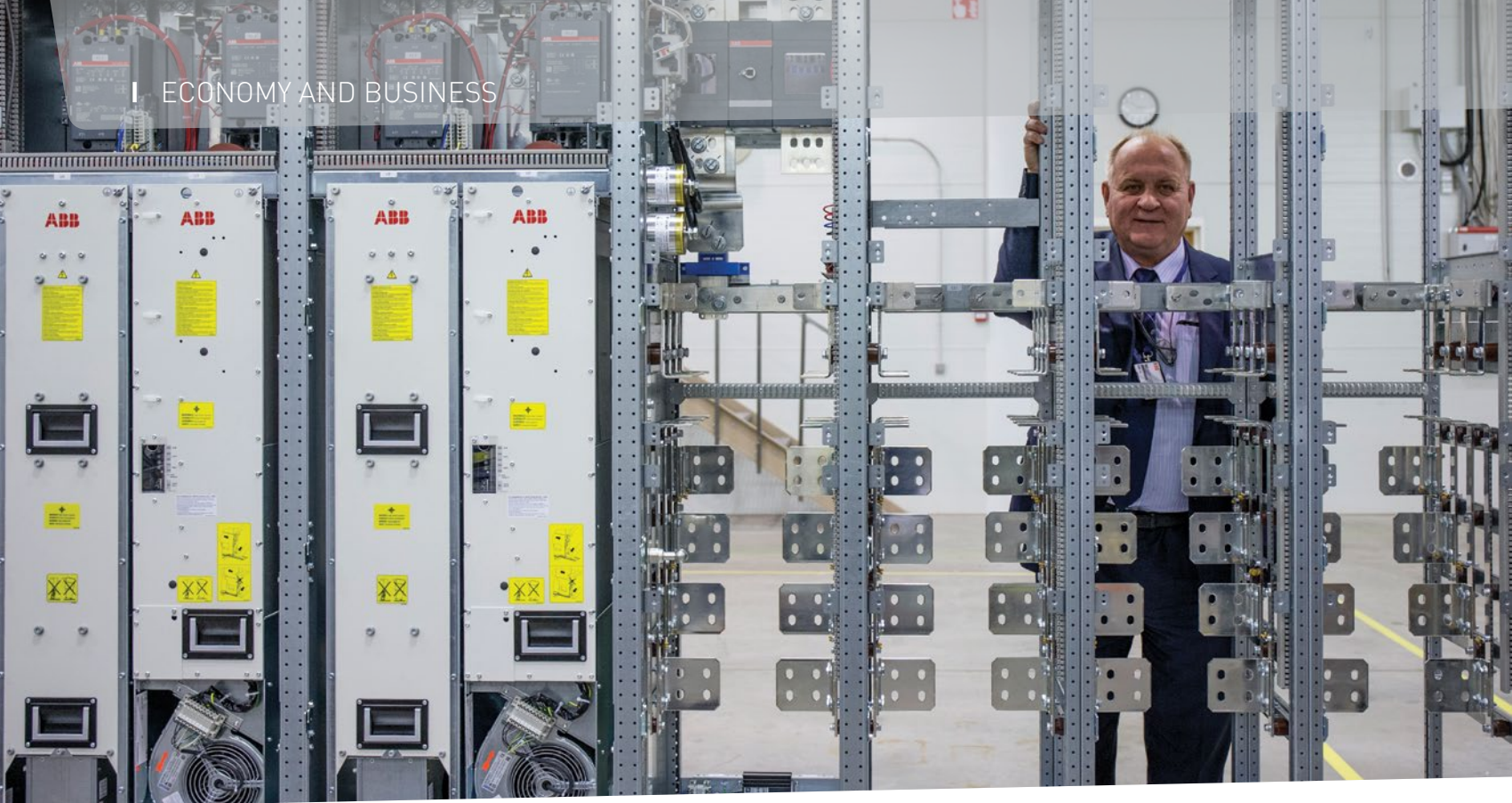
ABB opened for business in Estonia twenty-five years ago and has continued to grow over the years, currently employing over 1000 staff in its company campus in Jüri, in the vicinity of Tallinn. Last autumn the company opened its regional business service centre in Tallinn. Bo Henriksson, Managing Director in ABB Estonia and Baltics, says that the great reputation of ABB in Estonia has created opportunities for the entire group.

# Bo Henriksson: The Great Reputation of ABB Estonia Creates Growth Opportunities

By HOLGER ROONEMAA







**In terms of Estonia's recent history, ABB is a significant company. It was one of the first corporations to come to Estonia after our restoration of independence in 1991. Do you still recall how it came about?**

Indeed, we registered the company on the 31<sup>st</sup> of December 1991. Some foreign investments had already come to Estonia back then, but we were definitely one of the first large corporations. I started here in April of 1992.

**How much of a risk was it back then to come here with a company to such an unstable country? The years 1991-1992 were critical years in Estonian history – the question in the air was will we make it as an independent state or not.**

Percy Barnevik, our CEO back then really wanted to expand to Eastern Europe. ABB started in Poland even earlier than in Estonia. In Russia, which was still part of the Soviet Union, ABB had an office but no production unit. When the Soviet Union collapsed, we got the order that we would now expand to all these countries. I had a connection with Estonia already as I came here for the first time in 1989. So I got the offer to go and establish the company in Estonia. This is how it all began. We hired engineers and started to sell gradually. Together with a joint company with Harju Elekter we began to produce in Keila and export to Finland. Back then ABB was also active in the field of air handling and we also began to produce those appliances. In 1993, we started wholesales and service business a year later. We continued to expand. In the beginning of 2000, the production had grown so large that I decided we needed to build a proper new factory. This is when we invested in Jüri. At first we established the motors and generators factory and, in 2005,

the drives and renewables factory. In 2007, we added the compact substations factory. Then came the economic crisis, which really had a big impact on us. From 2009-10, things picked up again and as we would have needed to grow the production area in all factories in Estonia and as our office was based in Tallinn, we decided to establish the entire campus in Jüri. Currently we employ over 1,000 staff in Jüri and operate an area of 50,000 sq metres. But there is still room to expand.

**The development of ABB in Estonia has been very dynamic. Have the decisions to expand been part of a longer-term strategic plan or have they been prompted by circumstances?**

It really has been dynamic. We have expanded the motors and generators factory three times and the drives and renewables factory also three times. Everything is dependent on need. If there is a need to grow production, because demand is up and the business is doing well, then we do it. If the conditions are the opposite, we cut down. In those business areas decisions are made on a global level. As we have demonstrated good indicators and enjoy a good reputation, we are usually able to do more in Estonia.

**When you came to manage ABB in Estonia in 1992, could you have ever imagined the situation 25 years later?**

Definitely not on such a scale. Before coming to ABB, I also worked for a production company. It started off as a family business and one of the founders of ABB, Asea, bought it. When I came to Estonia, I had a concrete vision and goals of what I wanted to do. That prescribed continuous growth and this is what we have been doing.





## ABB in numbers

132 000 employees  
33.4 billion dollars worth of orders in 2016  
1.5 billion dollars in R&D investments in 2016  
50% of turnover linked to energy efficiency and renewable energy

Photos by Sven Arbet / Scanpix

### **These days it is not so common for one person to remain as the head of a company of such proportions. How have you managed to do that?**

In fact, I was in Estonia until 2000 and when the expatriot managers of Latvia and Lithuania left their posts, there was the question of whether the companies of the three countries should be united into a Baltic structure. I felt that would work well and we would be able to make the three countries cooperate. This is what we started to build in the summer of 2000. I then moved to Riga for a couple of years. So I have not been in the exact same post for the entire time. Changes are what give energy. The next interesting step is the opening of the ABB regional business service centre at Ülemiste City business campus. I have had quite free hands. When you have the ideas and you manage to sell them to the group, you have the freedom to act. You need good arguments.

### **What does the Estonian branch mean for the entire ABB corporation?**

We form about one percent of the entire corporation. Currently we have perhaps slightly more than one percent of employees. We are below one percent in terms of turnover. We run many activities but the turnover per employee is low. It is large in terms of motors and generators but in terms of drives we only have the assembly plant. In strategic terms our importance has always grown. Jüri is an important production unit for the ABB group. The regional business service centre only employs brains and hands – we produce services.

### **What does the Ülemiste service centre do?**

It's a back-office: finance, human resources, supply chain management. Just three years ago we had a small service unit for the Baltics in Estonia.

Finland had one for Finland and Sweden had one for Sweden, and so on. The trend in other companies has been to move back-office services to places with cheaper labour costs. ABB used to have 68 such shared services centres all around the world and then the plan was made to only keep six global level service centres. Two are totally global in nature – in Poland and in India. Then there are regional centres, one of which is based in Estonia.

### **At the time of opening the service centre, I had talks with Estonian politicians and officials working in economics, and they were really pleased with us bringing the regional centre into Estonia. It was considered very important for Estonia – a symbolic step even. What were the arguments in favour of bringing the service centre to Estonia?**

I was linked to this decision in a way, promoting it within the group. ABB Finland also supported us. It is also easier for them to have a regional centre nearby. Labour costs are definitely an argument in favour of Estonia. We also already had an efficient service centre. We managed to convince them that the labour force is highly qualified, people have good foreign language skills etc.

### **How is it working so far?**

Currently the centre employs 230 staff and this year we will add another 100. It surprises me that we have had no problem finding people. Some employees must speak Finnish, Swedish, Norwegian, Danish, Russian, Latvian and Lithuanian and, of course, English. And we have managed to find almost all the people in Estonia. It is only during training days that we have had some help from abroad.

### **The development of ABB in Estonia has been very consistent. What are the next steps?**

It is quite difficult to predict. Development depends on the market. Some things have been added gradually, like the whole development side. In the early 1990s, when we commenced with production, people used to say that ABB only makes simple products and subcontracting. I said we have to start somewhere. It is impossible to have everything ready on location. We have to train people and then put up production. We need to do it step-by-step, getting more complex on the way. This is exactly what has happened. Now we also have a lot of engineering work. Production has increased and the local factories demand R&D.

### **So you are increasing the share of Research & Development?**

It is a gradual process, one cannot start with R&D and then start production. When we began with producing motors and generators, we trained all our staff. The skill did not exist here back then.

### **Are you aware of the growing popularity of global trends regarding renewable energies and energy efficiency here in Estonia?**

This has been one of our most important directions for a long time already. Product development and targets are directed to the goal of being green, energy efficient and environmentally friendly. Those goals have for a long time been part of our everyday business. And we also demand that from our subcontractors.

### **What share of your production is already directly linked to renewable energy?**

A half. And it will definitely grow. The current theme is digitalization. This will take everything onto another level. Component parts have become so cheap that you can install sensors in everything and receive data on the computer. This provides huge opportunities in terms of energy efficiency.

### **Can you give some examples about renewable energy and energy efficiency which you produce in Estonia?**

We produce frequency converters in Estonia. There are three main types of those: those used to regulate electric engines in an energy-efficient way; frequency converters in wind generators which help get energy to the electric grid in the most efficient way; and solar inverters for solar plants. We produce wind generators, diesel generators. The development of compact substations is here. What is unique is our reliability centre where we test appliances in order to make sure they are 100 percent effective and in working condition. It is like a testing polygon.

### **Is the triumph of renewable energy here to stay? Last year was symbolic – in many Western countries, it was just as cheap to produce wind and solar energy as energy from fossil fuel.**

Wind and solar energy used to be expensive. Making the first investment really demanded a huge sum. The gap has been closing and, for example, solar energy which used to be very expensive has really become much cheaper fast. These days we speak about establishing micro grids. It brings great wins. The investment sums are not that large anymore. You can put up solar panels in your private home for 5 000-10 000 euros. So why should I take non-green energy from fossil fuels? There is of course a lot of room for development but people's mind-set is starting to change. Green politicians have of course been active for a couple of decades, but twenty years ago it was very expensive to be green. Normal people could not afford it.

### **So it may soon happen that green energy will be even more efficient in terms of money?**

Absolutely. Energy companies have also become softer as they see they have no way out. It is a good process for us because we also develop network managing systems. Energy companies have to start investing more in those. Before there used to be one large power station. There was the question of how to manage it. Some want to sell energy into the network, others want to buy it. It is a challenge to make the new system work. It is very expensive to build cable networks in comparison to the income that electricity grids would get. The idea is to create islands. If we go 50 kilometres out of Tallinn to a small village, we do not need a cable there. Let them produce their own energy! The main share of energy would come from wind, sun, and land. You can have a spare diesel generator. Ideal!

### **What is the next big challenge in this field?**

Reaching the creation of such energy islands would be a dream come true for our engineers. Having five different production options and to make them all produce and work together. That would be amazing. Energy storage, or batteries, is another question. We build battery containers. There are many places where the energy is very cheap, for example, at night. This is when you charge the batteries. When the energy cost goes up, you can use energy from the batteries. The battery volume is still an open question, therefore, it is currently quite expensive to operate such a system. But also battery technology is developing rapidly. In ten years the world will have changed completely.

### **Donald Trump, the new President of the USA, seems to be a supporter of fossil fuels. How much can that impact on the entire field?**

Only time will tell. I think it might influence something in the short-term, but not in the longer term. On the global level, green energy provides many more jobs than fossil fuel power stations.



Photo by KRISTJAN ODEN

# AEGAON Watches – a Quest of Character Against Luxury

By MARKO PALOVEER

Stepping into the watchmaking business at a time when the world is literally flooded with timepieces may seem like madness or economical suicide to anyone in their right mind. Nevertheless, Aegaon has gone against all odds and succeeded.





## First Estonian Watch Company

There were hints of Estonian watchmaking just before the outbreak of WWII. It is probably the Aegaon guys themselves who conducted the biggest dig into the past to be sure they could refer to themselves as the first Estonian watchmakers. They have even gone so far as to look up the only living successor to Mari Riimaste, who was a known goldsmith and Swiss watch reseller in Haapsalu in the late 1930's. However, according to the grandchild of Mrs. Riimaste, she never designed or assembled any watches of her own nor was there ever an August Riimaste, whose name has mistakenly popped up in some later articles. She had her name "M.Riimaste" and the town name "Haapsalu" printed on Swiss watches in Switzerland; it was kind of a marketing thing at the time. But a mystery by the name of "Eltoona" – a vintage women's watch, still remains unsolved. It only links to Estonian antique sales when googled. The name does have an Estonian feel to it, yet there is no reference to its origin inside the watch itself nor does it appear on the internet. So, until any solid facts or breaking leads emerge, Aegaon will hold its position as the first Estonian watchmaker.

## From King of Rock to Aegaon

The idea of Aegaon was sparked by "The King" Elvis Presley himself merely because he wore a huge wristwatch in the video "Always On My Mind". Much like the "Eltoona", no information can be found on this gigantic timepiece. So, **Janno Roodi**, the creator of the Aegaon watch company set about absorbing all the knowledge available online to realize his own vision of the perfect watch in 2012. It was named "Peacemaker65". With the help of friends **Kristjan Rabi** and **Veljo Viikant**, Aegaon has reached over 80 000 followers on social media has buyers from the U.S to Australia and everywhere in between. While Estonia has become sort of a Silicon Valley of startups, Aegaon has intentionally kept its distance from the movement. Their aim is not to build and make a quick profitable exit. They have politely refused investors, just to be in charge of every decision and detail. Aegaon is also working closely with Tallinn University of Technology on new materials and technologies for future timekeeping.



## PEACEMAKER65 DETAILS

**Weight:** 300g

**Case dimensions:** 65MM x 14,5MM

**Case material:** polished stainless steel

**Optics:** mineral glass

**Water resistance:** 3 ATM

**Strap width:** 30mm

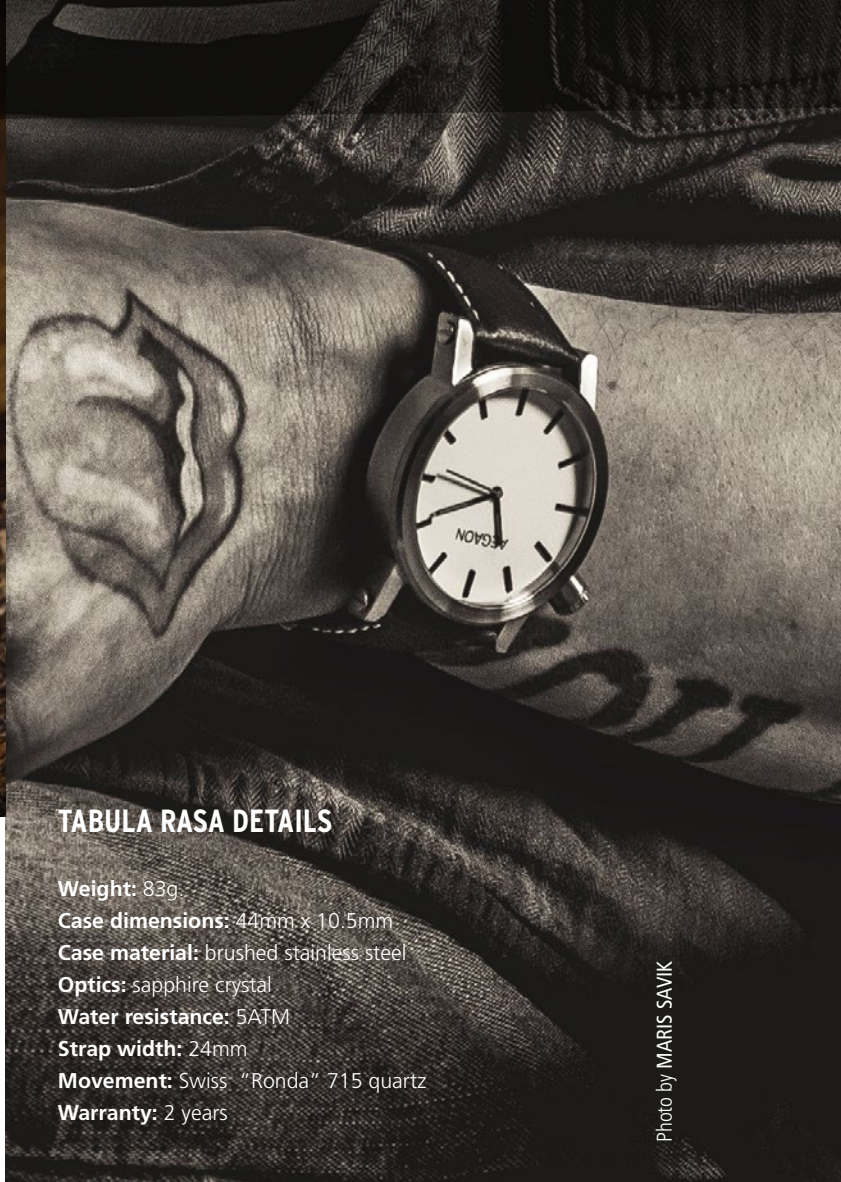
**Movement:** ETA 6497-1 clone, power reserve 50h

**Warranty:** 2 Years





“Tabula Rasa” means “clean slate” in Latin and is also the title of Arvo Pärt’s world famous classical music composition, which makes it a perfect name for their minimal, second design. It is once again Janno Roodi’s interpretation of a classic watch design – an alternative to the conventional classics. The brushed stainless steel casing with its decorative screws leave a certain impression of imperfection. Yet it still looks courteous both with suit and tattoos. Inside the watch you will find a high quality Swiss quartz movement by “Ronda”, that is known for its precision and shock resistance.



## TABULA RASA DETAILS

**Weight:** 83g  
**Case dimensions:** 44mm x 10.5mm  
**Case material:** brushed stainless steel  
**Optics:** sapphire crystal  
**Water resistance:** 5ATM  
**Strap width:** 24mm  
**Movement:** Swiss “Ronda” 715 quartz  
**Warranty:** 2 years

Photo by MARIS SAVIK



Janno Roodi

## Character Over Luxury

Punk stepped into the music scene when rock bands got stuck in their comfort zone and distanced themselves from the crowd, while people were still expecting authenticity and bold experimentation. That is how Aegaon depicts the watch market of today and their role in it.

The “Peacemaker65” is truly an oversized skeleton watch – a combination of man and machine, kind of like Ironman as the Aegaon guys refer to it. As ironic as it may seem, the crude casing of the “Peacemaker65” is manufactured by Eli Engineering – an Estonian company that specializes in drone and weaponry details amongst other things. What comes out of the CNC machine is still quite a rough piece of stainless steel that needs to be filed by hand and polished into the shiny and neat piece it needs to become. It does take a MAN to wear this watch though. It is not something you show off with. It doesn’t give you character, it simply brings it forward, if you happen to have any. In addition to the bold size and look, they have also moved the crown from its common position to the opposite side, facing your arm rather than pushing into your wrist. What is mesmerizing to many is the glass on both sides of the casing that allows you to actually see the windable old-school movement ticking away and peek through your watch at the same time. What’s interesting to know about the movement is that it’s a clone of a famous ETA skeleton that was developed in 19<sup>th</sup> century Switzerland and originally used in pocket watches. Not much has changed about the mechanism since.



Photo by DMACK@World



Ott Tänak



Ants Uustalu

Photo by STINA KASE

## Brand of the Individual

Aegaon is inspired by people who have worked hard for their success and won't stop there. Like **Margus Hunt**, the only Estonian player in the NFL; WRC driver **Ott Tänak** who is not a rally champion yet, but races like one every time; **Ants Uustalu**, a one of a kind chef de cuisine; and **Henry "Genka" Kõrvits** who is seen as one of the last few legendary Estonian artists of the time. The list goes on, but what is remarkable is that you can see all of them wearing Aegaon.

Photo by SIIRI KUMARI



Henry "Genka" Kõrvits



Margus Hunt

Most premium watch brands of today seem to communicate through two popular lifestyles – the luxury lifestyle full of glamour and expensive things or the modern lifestyle full on traveling and special moments. Aegaon has set its focus on the individual. It aims to be your everyday reminder to focus on your superhuman powers such as your talents, dreams, ideas and determination of making it all happen. In other words, to take time for what truly matters to you. Like that lawyer who is also a talented musician. The politician who is also a beloved writer. Or that always busy businessman, who actually has it in him to be a better friend or more caring father to his children, if he would just take the time for it. And here at the end, we come back to the beginning – the brand name. In Estonia, we say "aega on" for "take your time".



PORTFOLIO\_KAMILLE SAABRE



**The Ways of the Heart I** | 200 x 200 | Acrylic on canvas, 2017





**One Story. Two Sides** | 200 x 100 | Acrylic on canvas, 2015









**The Ways of the Heart II** | 200 x 200 | Acrylic on canvas, 2016





**Good Circle** | 200 x 200 | Acrylic on canvas, 2016



**Incomparably Unique I** | 100 x 100 | Acrylic on canvas, 2016





**Incomparably Unique II** | 100 x 100 | Acrylic on canvas, 2016



**The Heart Matters** | 120 x 100 | Acrylic on canvas, 2014





# With a Paintbrush and an Invisible Magnifying Glass – Kamille Saabre

She paints her models larger than life, in a direct and indirect sense of the phrase. At exhibitions, Kamille stands out with minimalist, yet forceful motifs which she presents with a unique approach. Those are close-ups of life, details magnified to monumental dimensions.

By ANNELIIS AUNAPUU



**Incomparably Unique III** | 100 x 100  
Acrylic on canvas, 2016

### Kamille about the lemon painting 'Good Circle' (see p. 55)

*I erase my debt to you and tell you good things.  
This will provide you with the resources to erase  
your debt to your companion, partner, parent, child,  
acquaintance, neighbour, passer-by, salesman. Your  
indebtedness to those who are not like you and who  
say negative things to you. Then we are together.  
Part of the circle of excitement where the everyday  
will not make you older, just more mature; will not  
rob you of your health, but present you with experi-  
ence; will not tire you out, but inspire you; will not  
erase ideals, but supply you with faith and hope.*

## From Fauna to Flora

In earlier years, she often painted the human being, portraying parts of the human body and investigating their nature and idea. Those, too, were large representations in order to make sure nothing essential went unnoticed. Today, she has arrived at the investigation of flora in its endless variations.

Traditionally, the painter sees the world in a visual way, characterised by form, colour and light. But with Kamille this order of importance is changed. Whereas all those attributes can and must be components of any painting, for Kamille it is essential to capture the structure and nature of the piece of reality she depicts irrespective of colour and form. The idea of the creator; the point of what she paints. Above this deep essence, her paintings simply emanate light and colour, life juices flow out in streams and fragrances are sprayed into the air as clouds, brimming with admiration and positivity.

Although the formats of her paintings remain in 'human measurements', what is depicted on them is often magnified twenty-fold. Her florid handling of the paintbrush embodies freedom, although every detail is important as it conveys the idea of the structure of the subject. Up-close the layers of paint and the bold brush strokes are enjoyable, but when you view it from a distance you start to fathom the big and wonderful nature of the subject, sense the pulsation of life in it.

Often she has been clever to paint her image on several canvases and join them later on the wall. It is a somewhat practical approach, making the works easier to grasp, domesticate, transport and exhibit. In contrast to some other artists whose works even art museums have trouble fitting, this just expresses Kamille's understanding and practical

approach to her audience and the future owner of her work. Speaking about her work, Kamille expresses a strong and responsible connection to her community. She does not create from a place of egoism, pouring out her inner battles or depicting the screams of the artist's vulnerable soul. Neither does she just create something without care, without an audience in mind, to the contrary, she claims to want to know where her 'babies' end up – if and who and how they will appreciate and understand her vision.



**Light and Darkness** | 120 x 100  
Acrylic on canvas, 2014



## Kamille's story about the pomegranate painting 'One Story. Two Sides'

(see p. 52-53)

*One night the half-moon announced from the dark sky: 'Don't think I'm just a half. I am not a half. I am never a half. I have been made so that I am always full, even when you can't see it.'*

*I started to look and I saw. I am half of my mother and half of my father. I am half Sahara desert wind and half cold breeze of the North Sea. Half exuberant joy and half ripping hopelessness. Half born religion and half discovered religion. Half yellow sunshine and half rainy autumn days. Half curious child and half bored old person. Half irresponsible artist and half calculating financial specialist. Half understanding mother and half strict father. Half alluring lady and half ignorant village lass. Half visible body and half invisible soul.*

*No. I am not a half. I am never a half. I have been made so that I am always full, even when you can't see it. I have been made perfect.*



**Incomparably Unique IV**

100 x 100

Acrylic on canvas, 2016

**In My Father's Garden**

160 x 100

Acrylic on Canvas, 2016

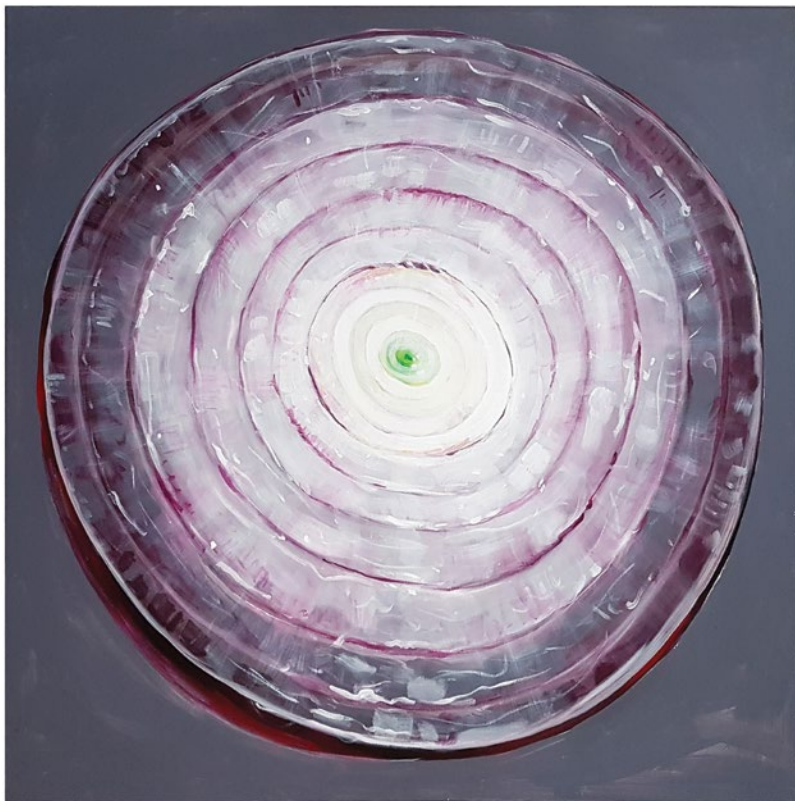
## Frames and Heavenly Light (In Flesh and Spirit)

She is not satisfied with a little, with perfecting small and submissive pictures, capturing or illustrating life. Instead she aims to grasp the whole, to capture the uncapturable. Her works have a life-affirming decorativeness, mixed with cleverness and respect for life.

Kamille does not use frames, but rather seems to look for them in herself. Her paintings do not really need frames; they are stable, painted onto canvas stretched onto a V-frame, perfect in their honesty and sincerity. Only two paintings have been framed as they happened to find themselves in very fine company – at the Tallinn Arts Hall exhibition "Lush and Perishability" at the Kadriorg Palace. In that baroque hall,

surrounded by old Dutchmen, those frame-less canvases would have seemed too naked.

Kamille only paints in natural light. The spacious living room with a glass wall in her white and bright home, also operates as her studio in order to enable her to work there in the early light hours, of which there are not many in winter. In some winters, she says, it is impossible to paint because it is too dark. This is why at one of her exhibitions she included the background and birth stories of her works next to the works themselves. It later turned out that her emotionally imaginative texts were a perfect connection to the viewers as they received much feedback. It seemed that those fragments of thought were important for the viewer and helped them better connect with the background of the images.



**Bitter Sweet I** | 100 x 100  
Acrylic on canvas, 2017

**Kamille's thoughts about the pumpkin painting 'The Ways of the Heart'**  
(see p. 54)

*The thought is born in the heart. Grows. Matures. Ripens into a fruit and goes into circulation. Is handed from hand to hand. Rolls through the lives of hundreds of people. Of close and distant ones. Everyone can take a bite. The bite plants a seed in the heart of the eater. But the fruit of the heart does not get smaller when eaten. It grows with each bite. Until it rolls back to you powerful and ripe. The circle is closed. Everything you push into movement will come back to you. Sweet, sour, bitter or tasteless. Only you know.*

## A Colourful Mosaic of Influences

In many senses, Kamille is international. A mix of Estonian and Egyptian blood flows in her. For a while she studied in the USA (Rhode Island School of Design), and then continued her studies in painting at the Estonian Academy of Arts (graduated in 1995). Searching for herself in the physical and spiritual world, she discovered Christian truths. This path took her to the Swiss Alps where she found fellows and her future husband. Several languages are spoken in her Tallinn home, albeit not equally - her husband and two children prefer to speak German.

At the same time, Kamille has not lost touch with her father's family in the land of the Pharaohs, sometimes visiting it, the social and open communicator she is. One should not look for a direct bloodline between Kamille and her ancestors who crafted hieroglyphs into stone and painted magnificent images on tomb walls, but perhaps her activities include a slight essence of it. Her family members in Egypt are not artists, but specialised in sciences, her Egyptian sisters working as successful doctors, having chosen that way to help people.

Kamille helps people with painting and pouring light and colour onto canvas. By bringing her motifs under the magnifying glass, she alleviates the viewers from having to hold the magnifying glass themselves – they get the perfect experience with their naked eye. And this in a direct and an indirect sense.

Kamille sees it as her artistic task to go in depth into the secrets of life. She appreciates balance and the search for it, likes to communicate with fellow travellers who love to think about how to handle the world, themselves, their families, homes and painting whilst being happy. Her paintings show what Kamille has spotted on her journey, captivating many viewers with their sincerity, strength and love of life.



**Bitter Sweet II** | 100 x 100  
Acrylic on canvas, 2017



A photograph of Mart Avi performing on stage. He is wearing a light-colored trench coat and is singing into a microphone. The background is dark with stage lights and equipment visible.

# Mart Avi Looking for the Future Music

by Maris Hellrand

'If pop music didn't already exist and were invented today, then the outcome would probably sound something like this,' – states the review of Mart Avi's third solo album "Rogue Wave" by Estonia's biggest daily Postimees.



*'Mart Avi's third full-length album "Rogue Wave" sounds like a spider talking in philosopher Bertrand Russell's voice, waiting for you on the kitchen wall for a charmingly debonair and irresponsibly intellectual dialogue.'* – review on Estonian Public Broadcasting (ERR) culture website.

*'In its earnest lust and attempts to call back a human lost somewhere beyond this world, "Rogue Wave" is more alive and eventually much warmer than all these "sincere and immediate" vibrations between the beards and scalps of the countless hipster bards. 21st century folk?'* – 10/10 review in Estonia's biggest weekly Eesti Ekspress.



In person, **Mart Avi** (25) is a lot more humble, open and vulnerable than the raving reviews would suggest: 'I'm a rye-grower's son from Vara village.' Vara is a small village by the lake Peipsi, a rather forgotten place in the far East of Estonia, and certainly such in the early 1990s, when Avi grew up in what was left of a former Soviet collective farm. 'I can imagine that people had this kind of childhood in the 1950s. We only had a black-and-white TV set,' explains Avi who was born just a month after Estonia regained its independence in 1991 – a true child of freedom.

His journey of life shows a remarkable parallel to the young country itself – from the dull and hopeless post-Soviet village to a confident and creative person who has found his calling and dedication through an international experience.

Avi saw his first PC in 2001. Until then his days were filled with wandering around in the deep woods and building huts with friends: 'I was seven when we stayed overnight in the forest with a friend, chopped wood and made fire.' The daily adventures included the abandoned buildings of the Soviet collective farm. 'I even had a lab in the cellar, supplied with test tubes and other utensils by a friend's mom, who worked at a real lab. The cellar also held the old records of the collective farm, among them rows of folders with lists of cattle and pigs.'

Avi belongs to the very first generation born in free Estonia who grew up during the turbulent times of change. 'It was a very exciting time to

be a child. I spent a lot of time with my dad and the workers who were quite heavy drinkers and often used very strong language. I worked along with these guys, helping to clean the rye drying storage.'

But there was always a longing to go further, to get out, to see the whole world: 'It was clear that if I stay there, I'll be sitting next to the village shop with a beer very soon. At the time this all felt quite depressing, now in hindsight it looks like an absurd cosmos.'

## The World Opens Up

When Avi turned 16 his life took a complete turn – moving from the small Estonian village to Luxembourg. That's where the world opened up for Avi – he started buying more records, making friends with other music fans and discovering his true passion. Until then music had been his deep private interest fuelled by British magazines available in the nearest city library. Avi started going to music events and met fellow Estonian Paul Sild at the European School in Luxembourg. Together they started Badass Yuki, an artpop/ indie dance group that has released two well-acclaimed albums. One year spent in Luxembourg was enough for Mart Avi to open the doors to the music world. Upon return he continued to pursue his interest in Tartu. 'I felt a very good drive after this Luxembourg year and was adamant to pursue my music interest including smuggling myself into alternative clubs in spite of still being under age.'





Photo by Tõnu Tunnel

# Tallinn Music Week

27 Mar – 2 Apr 2017

## Tallinn Music Week

27<sup>th</sup> March to 2<sup>nd</sup> April – TMW is an all-encompassing city festival, covering music, arts, design, technology, city space, food culture and various societal issues. Already in its 9th year, TMW is one of Europe's fastest growing city festivals and major meeting points for Eastern, Western and Central European creative communities. TMW is the only festival in the world that hosts a dedicated programme for virtually every music genre, from outsider/underground to chart-pop, including an extensive line-up of classical composers and interpreters.

[www.tmw.ee](http://www.tmw.ee)



## Music is a Game

Avi has no formal music education nor has he learned an instrument. From the first attempts at guitar he quickly moved on to electronic music, now frequently supplemented by vocals or different instruments, all self-taught. 'I have always considered the academic frame of music as something that could possibly be detrimental to my interest...and make it seem all boring. Then and now music for me is a game. It's not a framework with strict rules and codes. Music is an extension of childhood, like Peter Pan. Producing records and performing is not really serious work. It cannot be compared to office or factory work. It's just a game. In a way, through this you can stay young forever.'

Avi, trained as a teacher for special needs, is now working at Tallinn European School as support teacher for kids with autism. He keeps his work as a teacher separate from the music world. Very few at school even know about the music passion of Avi, however these two worlds form a great balance in his life: 'After each day at school I feel that I have loads of ideas and thoughts. The situations with the kids and all the special projects we create together – I have my own games at school as well - all this is a great source of energy that opens and stretches my mind constantly. Just the playful music reality would probably make me lazy. It's great to be dedicated to something that is very rational, real and involves a lot of responsibility. These two aspects of life fit together really well. The need for expression is strong - publishing albums and producing songs is very liberating. I feel emotionally very healthy, it keeps me well balanced.'

*The Edasi.org culture website has loads of praise for Avi's latest album: "Rogue Wave" is a totally fresh breath. This is glamorous pop – in its primeval, not commercial sense. /.../ It recalls some of the most innovative, intellectual synth-pop of the 80s (Talk Talk, Heaven 17, The Blue Nile), and hints on the rampant, quality production RnB of the 90s. There are still other dimensions to access though – from Brian Eno's pre-ambient era works to present-day vaporwave, where the pop of the bygone decades is steamed out, stretched slower, twisted faster and ripped to shreds.'*



Photo by Kris Moor



Photo by Andres Teiss

Avi admits that his music blows all genre borders: 'I always struggle to define my music in terms of genres. I use elements from all of pop culture history – past, present and future. I mix them and combine them. As a person interested in culture you consume music, film, theatre, arts – so it's inevitable that while creating something you'll discover influences of this whole environment. Sometimes there are of course conscious quotes. I don't believe in the concept of inspiration. A person creating something always uses the whole field of information he has been surrounded with during his life. It's a mix of different information that is being combined into new formulas. I don't believe in divine inspiration.'

In 2016, Estonia's most influential end-of-year album list, compiled by 55 music critics and melomaniacs for the weekly Eesti Ekspress culture pages Areen featured an all-time high percentage of Estonian music: Mart virtually killed 'em all – ending up at #2, just behind Bowie's Blackstar. 'Rogue Wave' also won the best electronic album title at the Estonian Music Awards 2016.

Yet, Avi is never content with what he has achieved as a musician: 'One has to keep a certain edge. At the same time I don't have great ambitions. Maybe I need to break out of this. I haven't consciously tried to promote my music a lot. So far I've been riding the wave. Maybe I need a bigger jump at one point.'

*The daily Postimees writes about "Rogue Wave": 'These are some of the most easily accessible Avi tunes ever, that in some parallel universe could be the radio hits of the highest rotation.'*

Avi himself hopes to create a niche for his music one day: 'It's an autonomous stand-alone vocal pop. I would have to build this niche by myself. I have no idea where this is going. It's not just electronic, not just jazz, each album is very different and mirrors where I am in my life at the moment. It can easily happen that in a few years time I'll be part of a niche or a movement that doesn't exist today. And maybe I won't be alone but part of a movement. Today this movement doesn't exist. This could be quite exciting. Future music. Counterculture.'

Ever since 2009, Mart Avi has been part of Tallinn Music Week either as a visitor or a performer with Badass Yuki or with the legendary reverend of leftfield house - Ajukaja. This year, Avi will make his debut as a solo artist at TMW, performing at the festival's opening party and at the showcase curated by Estonia's Üle Heli festival, the British indie label Nonclassical, and Japan Sound Postcard project by BBC 3 DJ Nick Luscombe and film director Neil Cantwell.

'It's a great, fun fair for the Estonian music scene each year. You get a very good overview. It's kind of a small season of its own. The city changes a lot and while TMW takes place it feels like you are in a different city. A lot is going on and it's an exciting time with many exceptional characters dropping by. In the era of post-everything, discussion panels with authors such as Simon Reynolds can be more captivating than some of the music and serve a great need.'



Photo by Vallo Kruuser / Eesti Ekspress

# Estonian Design Goes Global

By ANNELIIS AUNAPUU

Designer Matti Õunapuu creates standard equipment for *homo sapiens*



Photo by Vallo Kruuser / Eesti Ekspress



**For the first time ever, design from Estonia has gone into mass production and is conquering the streets worldwide. Meet the folding electric scooter Stigo, designed by Matti Õunapuu.**

**Stigo** was recently presented to Prince Albert of Monaco at the Monaco Car Show SIAM 2017. The prince who values innovation had especially admired the lightness of the electric scooter.

The folding electric scooter Stigo, designed by **Matti Õunapuu**, speeds up to 25 km/h and its elastic saddle is amazingly comfortable to sit on. The scooter can be folded up in 2 seconds and can be easily taken along like a suitcase on wheels. There are never any problems with parking, as Stigo takes up less room than a footstool. Once charged, the battery lasts for 20 km and the scooter can be recharged from standard outlets. Even when folded, Stigo looks cool – its slim bendy shape combines with an elegant, dark grey metallic surface and a splash of orange to complete the look.

Stigo fulfils one of the basic needs of any human being today – to move through the urban environment as fast and as comfortably as possible without creating environmental pollution. 'Yes Stigo is a totally unique product, one of its kind, which is fully certified and in mass production today. You can probably find similar products on the web (which demonstrates consumer need), but those are all uncertified prototypes which will never make it into mass production because it is extremely difficult to fulfil the requirements for street vehicles,' explains Matti Õunapuu.

## Half a Century of Design Education

The roots of the design are probably in Finno-Ugric soil but everything changed when a new design department, led by Bruno Tomberg, was created at the Estonian Arts Institute. New students who came to change the world were admitted with harsh scepticism – 'forget your dreams of becoming a star, if you're lucky you will be the foundation of a new field' – but there was a passionate, obstinate kind of optimism behind them. Slogans such as 'Less is more', and 'We do not pollute, we improve the environment' were abundant.

The ideology that clearly opposed the prevailing conditions led to the formation of a half-secret united opposing front, whose goal was to improve the miserable Soviet environment. Back then it was crazy to hope that such idealism would triumph. Today we know that only such reckless courage and determinism can lead to the birth of real global design.

Matti Õunapuu stood out from other students with his strong and practical attitude. Whereas most students considered their activities a futurist game, Õunapuu started to open doors in real life. Before the 1980 Moscow Olympic Games, when the Olympic yachting regatta was held in Tallinn, he worked together with the City Design Group, designing exceptional objects. His top design – the base for the Olympic fire – still stands in Pirita.

The Olympic project brought him into contact with the more forward-thinking men at the Tupolev factory. The renowned Russian airplane producer was interested in ordering modern designs for consumer goods. Their collaboration was successful and because the production profile enabled such ambitious designs, the next project scale ranged from kitchen equipment to mobile homes.

By the end of the 1980s, Matti Õunapuu founded the design studio MaDis. In the next few years, twelve talented designers worked in the company, including Arvo Pärenson, Üllar Karro, Heiki Zoova, Hugo Mitt, Raimo Sau, and others.

At the end of Soviet influence, new times brought the designers into contact with the Finnish Helkama Group (a renowned producer of sewing machines and bikes), which also produced kitchen equipment. The fresh fridge and stove design solutions submitted by Matti and his colleagues surprised the Finns, they were presented at trade fairs and received a fair bit of attention.







## Stop Waiting for the Miracle and Start Producing

Just when it all could have taken off, everything went haywire. Instead of blossoming during the early days of capitalism, industrial enterprises started to collapse.

Designers had to look for production opportunities themselves. Using the most affordable production technologies – glass reinforced plaster moulding – Õunapuu started to produce car roof boxes. Suddenly the fashion world was launched and required movable mannequins, so he ended up producing those in thousands. Several companies have made use of his strict designer hand and his practical engineering side. For example, he has designed bathtubs for Balteco using their new technology, and this includes the stunning Pao model.

## How Faith in the Potential of Design Was Born

In 2002, Curonia Research, an Estonian company, presented a medical product on the international arena. Their appliance doc@Home was pioneering, as it enabled patients to monitor their health at home.

Certainly one of the reasons for their success was good design, which was developed in collaboration with Matti Õunapuu. In the following year, experts declared it the best e-health product in Europe. Spurred on by their success, the enterprising people came up with a new idea – to create electric mini vehicles. And they turned again to the same designer. A smart and lucky choice, as it turned out. Today the company Stigo Plc has become unstoppable.

They developed the model for the folding scooter in close cooperation, but it was mainly the designer's self-confidence which helped take the product to mass production. Despite the team's efforts, the product did not want to take off and problems accumulated. However, according to Õunapuu, that is just a normal part of the process. 'It is not the designer's job to create a pretty exterior, but to manage the whole. Ergonomics, functionality and thus also construction and an aesthetic look to tie it all together – that is what results in a product that makes sense to produce,' explains Õunapuu, adding, 'Due to the complexity of the problems you shouldn't immediately hope that your pretty product will quickly find a producer. The internet is brimming with clever solutions, but a production company will only hook onto an idea when it sees profit behind it.'



### The Turning Point

The year 2013 marked a moment for Stigo when, due to a succession of failures and differences in opinion, a decision was taken to stop the project. The designer did not lose hope but built a small army of 30 Stigos and asked some people to test them, in order to identify the last mistakes in the project and to find open doors. And this he found. How then was the team able to reach the unreachable – to start mass production? It was not easy.

Of course they made efforts to find opportunities in Estonia but, even if technically and in terms of skills and materials they could have found a satisfying solution, the costs needed to develop the required production base would not be realistic.

The solution came via a phone call from China. By pure chance, the managers of the large Chinese bicycle producer Ming were looking online for folding electric scooter models and happened to choose Stigo, their final decision was based on the attractiveness of the design – its simplicity, elegance and capacity. Fortunately or unfortunately, everything that would need to have been built in Estonia already existed in China – a huge, experienced, flexible and modern production facility with the capacity of 20 000 bikes per day. Stigo's sales grip today reaches from Malaysia over China to Scandinavia, from the Netherlands over Europe to Spain, and it continues to expand.

Õunapuu is definitely satisfied with Chinese factories and their work ethic. 'The elite of the Chinese industry has long ago struggled away from the reputation of low quality junk producers,' says the designer whilst admitting that there still needs to be continuous quality control.

Although the production of Stigo takes place in China, it is not part of the Chinese economy – it's just the location of the factory. The producer is still Stigo in Estonia who has employed Chinese labour and equipment. Tax on economic activity is paid in Estonia.

'It is not a miracle or an anomaly – the process Stigo has gone through is actually the normal way to do it,' claims Õunapuu. 'Each designer should have more confidence, should be able to find a team and turn a potential idea into a product. Mass production should be contracted where the production cost is most optimal. In this sense, Estonian designers are not worse than any others. There is nothing in the world that cannot be made. One just needs to find the balance between the construction, consumer comfort, cheap production price and a great look. A favourable compromise in these conditions is a precondition for any product and also the most interesting task for the designer – to do it all without slipping onto the path of trivial commercial products.'

Today Õunapuu is tirelessly working on the future model of Stigo. In order to not lose its identity in the global commercial current, he makes sure that each Stigo scooter carries the label "Designed in Estonia". More information on [stigobike.com](http://stigobike.com).

### Single Designer Item versus Mass Production

Art schools usually educate artists to create single artefacts or limited editions. The design department, however, made students look towards the basic needs of *homo sapiens*.


A designer's creative process has to start from point zero. The idea is to understand the need and the whole production process leading to the creation of functional consumer goods – which were very much in demand back then. Gradually the first "designer-like" products from Estonian toy and plastic goods producers started to filter into the depressing Soviet product landscape. Yet in the years that followed it became clear that designers would never be able to cooperate with the local industry.

Today several generations of designers are running on their own steam, uniting in their search for connections and to keep the status quo. In order to survive, they create clever, small items, limited editions of niche products or experimental designs. Desperate times call for desperate measures, as long as the items promote an innovative language of product design form. Will our participation in the language of global design remain a distant dream?

Perhaps not. Because an Estonian designer has created the first consumer product that has gone into mass production and is sold all around the world. Stigo is rolling along the world's design arena.







# Rasmus Puur: Here I'll Stay Song Festival of the 'Children of Freedom'

By MARIS HELLRAND

The 12<sup>th</sup> Youth Song and Dance Celebration will take place in Tallinn from the 30<sup>th</sup> of June to the 2<sup>nd</sup> of July 2017. Around 30 000 choir singers and dancers represent a new generation – 'children of freedom', who were all born after Estonia regained its independence in 1991. Most of the composers and conductors belong to this young generation who now want to give a vow and promise to take care of their cultural heritage under the theme 'Here I'll stay'. One of them is composer Rasmus Puur (25), the author of the concept of this year's Song Festival.

## The 12<sup>th</sup> Youth Song and Dance Celebration

### June 30th

19:00 Dance Celebration,  
Kalev Central Stadium

### July 1st

13:00 Dance Celebration,  
Kalev Central Stadium  
15:00 Folk Music Celebration  
19:00 Dance Celebration,  
Kalev Central Stadium

### July 2nd

09:30 Procession  
14:00 Song Celebration at  
Song Festival Grounds

[2017.laulupidu.ee/en/](http://2017.laulupidu.ee/en/)



Puur's interest in music grew from his long experience as a choir singer. He entered the artistic competition for the concept of the Song Festival right after graduating from the Music Academy. 'Surprisingly, our idea "Here I'll stay" won the competition and now we are implementing it together. I couldn't do it alone, it really involves the whole generation and going through the process together while learning through it and accepting the responsibility for the culture.'

**Can you shed light into the process of joint creation? Now we are already at the finish line of the preparations, the major work has been completed. What did it look like? Usually selecting the repertoire is a first step of each Song Festival. What was your vision and role in this?**

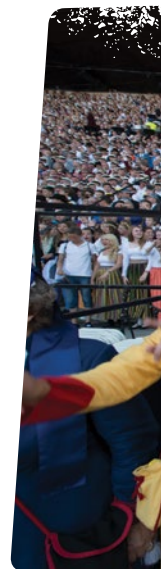
Selecting the repertoire is the most thorough process. Our concept was to include young composers and to have a new piece in each choir category. We had a competition for young composers so that everyone could be part of it. Next to the contemporary ones we have included early compositions by our legendary composers to see how young people thought in different eras. The exciting thing is that many of the Song Festival standards were composed when the authors were very young. Mihkel Lüdigi was 24 when he composed the classic opening song 'Koit' /Dawn/ within only 15 minutes! Enn Võrk composed 'Eesti lipp', the anthem of our flag, at the age of 17. This puts these songs in a totally different context. At rehearsals all around Estonia I have told the singers to keep in mind that these songs are by people younger than me and they are full of youthfulness. They don't have to sing it as some sacred anthem but rather as a celebration full of joy and pride. So it's very interesting to put the classics in a different context.

**What were the criteria for selecting the commissioned pieces?**

First we looked at existing repertoire that would be suitable. Then we discussed what was missing in each choir category – a song with instrumental backing or without, something more boisterous or more thoughtful. Composing for the Song Festival is a totally different process as you have to consider very many restrictions: we have young singers, who need to be able to learn it, so it can't be too difficult, too high, too tiring. Since the process of learning takes a year, it's important that the singers don't get bored after a month. It has to have meaningful lyrics that support the concept of cultural responsibility for our heritage. It was a task with many rules. At the same time the composer needs to keep his unique character.

**What kinds of songs were proposed? What is the language of this new music?**

This new music has a very contemporary sound, very understandable for us today but still clearly rooted in the Estonian musical canon. The selected songs feel like they have always existed. We had very many good entries, way more than were finally selected, just because of the slots and the types of songs that fit in. Just as one can't study to become a Song Festival conductor, it's also not possible to study to become a Song Festival composer. You need experience for this special genre of Song Festival.





### What about lyrics? It seems to be incredibly important for you. How were the lyrics for the newly commissioned songs selected?

The composers selected the poetry. When the competition was announced I went through lots of poems to find the ones that relate to the topic of this Song Festival best. I need the poetry to really touch and move me, to be in the service of the idea, then the music just flows. The piece for joint choirs based on a poem by Anna Haava was born very quickly. It really has a young person's face written all over it – 'we don't want to be a forgotten and silent page in the book of time'. This is a very strong classical text of Estonian poetry that reflects all the big topics and feelings so characteristic for youth. Power, intensity, will, faith – without the doubt that will emerge later in life.

### Does it take guts to dare to work with big classic poetry like that?

When I am face-to-face with the text on my own I don't feel the weight of the responsibility at all. It's my daily comfort zone from where I face the text and have the freedom to let the music happen.

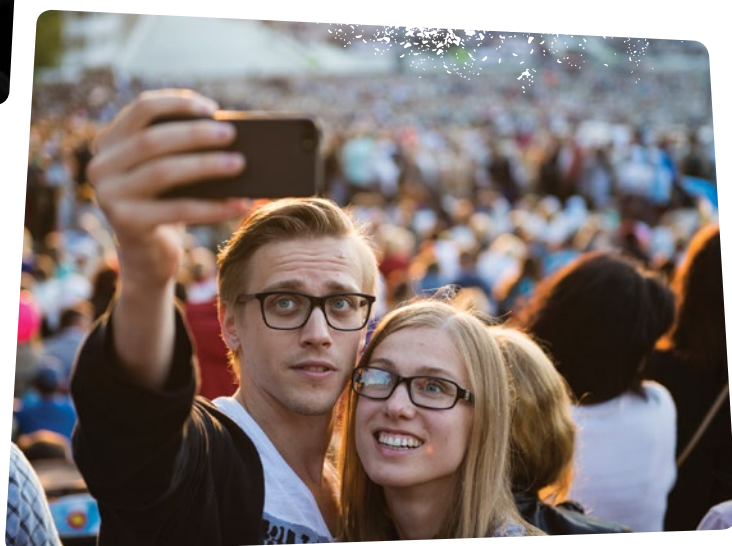


**Conductor Hirvo Surva has explained the meaning of Song Festivals for Estonian music life as being the foundation of the musical pyramid that supports everything else. So when using this metaphor it must be amazing to climb to the top of this pyramid – conducting the most prominent part of the concert, the joint choirs of 30 000 people, who sing your own song.**

This is only possible in Estonia. Every person who does something will be noticed, will not get lost. Every person counts. If you do something with dedication, if it has ideas, thoughts and content, you will be noticed and given the opportunity to do these things. This is probably quite rare. So yes, I can do the biggest musical event of the country immediately after graduating from the Academy of Music. Everyone realizes that we need to keep the connection between generations. The sense of responsibility also comes from the opportunity that the older and more experienced people have given us – just go ahead! They have given us a signal that we are welcome as equal partners, no more children.

**On this background it is may be quite easy to say: 'Here I'll stay' – the theme of this year's Song Festival. The personal experience of responsibility given to you probably makes the choice to stay the only possible one.**

For me this question has never occurred. I felt this sense of responsibility before it was actually given to me. Because here I can do everything I want. I have the possibility to do it with the people I want to. Here everyone is just a phone-call away. It is not enough just to stay here in a passive way though. We also need to do something. This is the hidden part of the message – to keep the continuity of the culture that has lasted many thousand years. We have the duty to keep our face and character while being contemporary and modern in our time. Being open while being ourselves. If we don't pay attention we will lose our character and then there is no need for us to be here at all.



**When composing choir music here the fact that the performers understand your language and your musical roots is an important anchor, in the case of symphonic music this restriction might not apply. The whole world could be your playground.**

I have no ambition to conquer the world. For me it is important that my people here understand my music and enjoy the experience. I understand Estonian instrumental music much better than music written in Germany or France. I have a clearer grasp of it because it was created in the same cultural space, the people have walked the same streets and forest paths like me and I feel it. There is a connection. Maybe we even understand it more clearly in the instrumental music when there is no text, just the feeling.

**We do have composers who are very sought-after worldwide and this shows they can be understood globally.**

This is a true miracle. Veljo Tormis' huge contribution was that his music has set us apart from the rest of the world so distinguishably. Our own voice, our own music. Now our choirs have something to offer to audiences abroad. Also Arvo Pärt for me represents Estonian character very strongly – he is very frugal in his notes and never adds anything beyond what's absolutely needed. I can recognize the sky of Estonia in Pärt's music.



**What is your expectation regarding the Song Festival?**

I haven't really thought about it. Even the first cycle of the rehearsals has been such an enriching experience – to see the whole picture all around Estonia. To see how much people care about the Song Festival, how important it is for the kids, how much effort they have already put into it, how eagerly they wait. This has been so overwhelmingly rewarding already. I'm afraid that after conducting the 30 000-person choir at the Song Festival I won't even remember the emotions afterwards.

**The process is even more important for the participants than the event itself?**

Absolutely. I have had 38 rehearsals all over Estonia in the last three weeks and I was a bit afraid that I'd get tired of speaking about the same things all over. But I didn't – the new audience every time, in a way, cheated me into feeling as if I were telling it for the first time. It has also been a chance to leave the first impression so many times in a row – this will never happen to me again. Every time I can test and take a small risk – who do I want to be today? In the end of course I am who I am. At the beginning it was really hard – to face the hundreds of singers and feel the responsibility. The first time I failed miserably. The next day I had to overcome it and do it all over again. I totally underestimated it. You cannot experience such a big choir anywhere else.

**Going through the process is important so by the end of it you actually know all 30 000 of the singers that you'll meet again at the Song Festival.**

Yes, I actually do remember the faces at the end!

**How do the singers deal with you being part of their own generation?**

It's probably part of the magic and an aim in itself – a festival of youth that we all create together. For the singers I'm more like an older brother. They get the reassurance that it's nothing unachievable to be a composer or conductor – "I could do it!"



Rasmus Puur with the children's choir conductors Ingrid Roose and Janne Fridolin, who all will make their debut at the song festival





# Unique and Magical Places to Stay in Estonia

Estonia is one of those places where modern culture beautifully mixes with a dose of luxury and uniqueness, where people are still as pure as the untouched nature around them. Here are only a few of the many places to stay during your stay in Estonia.



## KAU Manor

Harju County, Triigi Village

KAU Manor, which was originally constructed as long ago as 1241, was taken over by new owners in 2006. The renovation work was inspired by the colorful history of the manor, and the imagination employed makes it stand out from other manors in Estonia. Just half an hour's drive from Tallinn, the manor is the perfect place to escape the hustle and bustle of the city. The manor today is home to a 19-room boutique hotel, the awarded 'Kaheksa Jalga' restaurant, a wine cellar, cigar room, library, private sauna and indoor pool. Its ballroom and other smaller salons make ideal venues for special events. A wide range of public events are also held here.

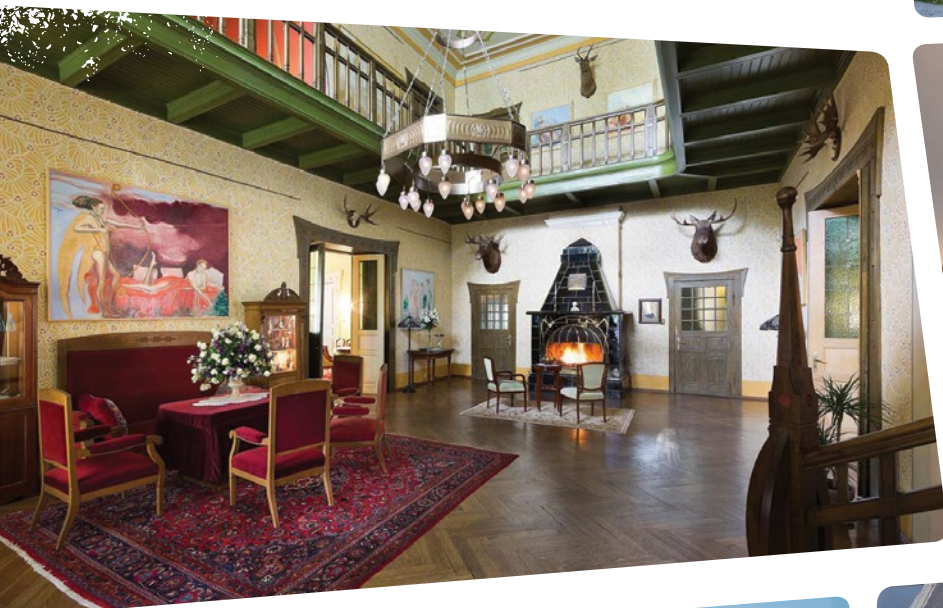




## Villa Ammende - A Luxury Art Nouveau Hotel

Pärnu County, Pärnu

Villa Ammende was completed in 1905 and is one of the best-renovated Art Nouveau hotels in Europe. Villa Ammende offers accommodation to 35 people in 18 rooms. In the Main Building and the Gardener's House, you are going to find luxurious suites and deluxe rooms with unique interior design and original Art Nouveau furniture that offer superior comfort and decadence. The À la carte restaurant, bar and coffee rooms serve carefully selected drinks and food for your enjoyment. If you wish, we can organize various activities for groups at the hotel and elsewhere. Hospitality characteristic of Villa Ammende and the availability of a concierge service complement the impressive environment.



## Muhu Farm Winery

Saare County, Vahtraste Village

Muhu farm winery is the perfect bohemian heaven with an Estonian twist. Offering incredible food and wine (and bicycles to roam around the tiny magical island), this place would make a cute location for a low key wedding or a romantic hideaway.

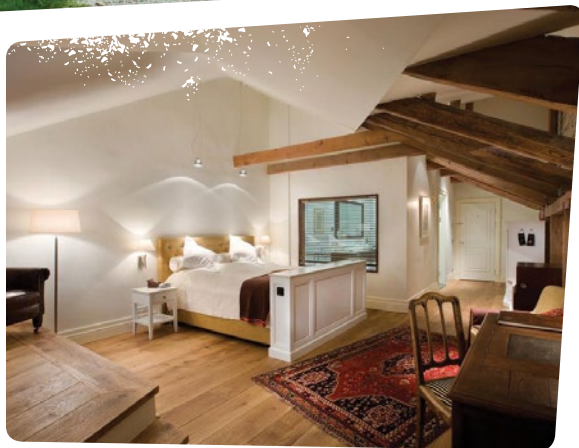




## Pädaste Manor

Saare County, Pädaste Village

The centuries-old Pädaste Manor on the island of Muhu is the only five-star hotel outside Tallinn in Estonia. The fully renovated manor complex has been turned into a luxury hotel and a spa complex. Pädaste offers 24 differently decorated rooms for its guests: starting with cozy rooms in the coach house (Tõllakuur) and ending with stately rooms in the manor house. Although doing nothing in Pädaste is an agreeable and long-awaited leisure to many, there are choices for those interested in some activity. On your request, we'll organize a cycling trip along the coast, a boat trip in the sunset or a picnic on the Island of Love (Armas-tuse saar).







## Orjaku Mõisakoha Holiday House

Hiiu County, Orjaku Village

Another magical Estonian island – Hiiumaa, offers quite an historical site for a stay. Next to the Orjaku Manor House built in 1603, Orjaku Mõisakoha Holiday House offers several traditional Estonian activities – like sauna evenings and making smoked fish. There's nothing more delicious than freshly caught Estonian island fish on toast. The island of Hiiumaa is a gem in itself with its breathtaking nature and locals known for their extremely relaxed attitudes about life and off-kilter sense of humour.



## Ohessaare Windmill

Saare County, Ohessaare Village

This place is truly unique. Offering unbelievable nature-watching in all directions, the visitor gets to stay in a real, ancient windmill – a romantic symbol of Saaremaa. It is located on Sõrve peninsula close to the Ohessaare cliffs where the waves crash against the shoreline and the sun shines for 2200 hours a year.







## Samblamaa Holiday Homes – A Holiday in the Midst of Peace and Quiet!

Lääne County, Rannaküla

Samblamaa holiday home offers a magical getaway by the lake, in the forest and is just a brief walk from the seaside. The house comfortably fits all of your closest nature-loving friends or family members and has the coolest saunas – with a swing in it!

More of these and many other places to stay in Estonia at  
[www.visitestonia.com](http://www.visitestonia.com)



## Canoeing in Soomaa National Park during the Fifth Season

The Soomaa National Park is a bog and swamp abundant area in Pärnu and Viljandi Counties. The most memorable time to enjoy the beauty of untouched nature is during the so-called Fifth Season. During the early spring floods there isn't enough capacity in the river basins of the Halliste and Raudna rivers as well as their tributaries due to the melting snow; water runs into the floodplain meadows and even the floodplain forests. This is an interesting time, the beginning of the water hiking season, when you can canoe through its waters running along roads, through forests, past farmhouses and over fields. The biggest floods are in late March and early April.

Regular canoeing trips are organized every day in the forests, meadows and rivers of Soomaa during the flood period. You can join the guided group at a certain time every day. An instructor always accompanies visitors during the period of flooding to guide you and ensure that your trip is interesting and safe.

Soomaa is a shelter for smaller and larger birds and animals. These forests are home to elk, deer, wild boars, lynxes, wolves and bears; watery landscapes are designed by beavers.



Birds living in Soomaa include grouses and golden eagles; the marsh banks are the playgrounds of the capercaillies, while open marsh fields are filled with the cooing of black grouses. Woodpeckers and many owls can be found in more humid forests. Flood-meadows are home to Charadriiformes, great snipes and corncrakes.

The history of the human population in Soomaa dates back to the Stone Age. The ancient and charming nature of this place is reflected in the traditional aspen logboat, the making of which can be learned in Soomaa.

The Soomaa National Park belongs to the PAN Parks network of protected areas, which focuses on the protection of wilderness.





# Events in Estonia Highlights from April to June

## International Jazz Music Festival: Jazzkaar

21 – 30 April 2017

Tallinn

[www.jazzkaar.ee](http://www.jazzkaar.ee)

Jazzkaar has been the biggest jazz festival of the Baltics since 1990, held in Tallinn, the capital of Estonia. It is a ten-day festival in April presenting the hottest international and local jazz talent and filling the whole country with great sounds and activities.

The headlining act of the spring Jazzkaar is five-time Grammy winner Dianne Reeves.

Jazzkaar has been granted the EFFE quality label (2015-2016) and is among the finest festivals in Europe.



## Tartu Cross-Country Running Marathon

7 May 2017

Otepää

[www.tartumaraton.ee](http://www.tartumaraton.ee)

The largest Baltic cross-country running event, bringing more than 4 000 runners to South-Estonia every year. There are two main distances, 23 km and 10 km; both can be covered either by running or Nordic Walking. The tracks take participants into the beautiful spring nature of South-Estonia.



## Night of Museums

20 May 2017

Tallinn

[www.muuseumioo.ee](http://www.muuseumioo.ee)

Estonian museums will open their doors to visitors for a late evening full of special events and exhibitions, celebrating the Night of Museums across the whole country.



## Tallinn Bicycle Week

1 – 4 June 2017

Tallinn

[www.tbw.ee](http://www.tbw.ee)

Tallinn Bicycle Week is an urban cycling culture festival that sets out to give the streets back to the people and have fun while encouraging a healthy and conscious city lifestyle. Tour d'ÕÖ is a critical mass ride event sprung from the first Tallinn Bicycle Week – an independent initiative for encouraging urban cycling and bike culture in Estonia's capital Tallinn, as well as the whole country, attracting thousands of different cyclists.



## World Orienteering Championships 2017

30 June – 8 July 2017

Tartu

[www.woc2017.ee](http://www.woc2017.ee)

World Orienteering Championships week consists of five championship races to award titles to the best orienteers in the world. It offers an attractive side-programme with concerts and excursions in Tartu, and recreational orienteering races for the spectators and fans.

The first-ever World Orienteering Championships in Estonia is a dream come true for our sports community that gives Estonia a fantastic opportunity to present our hospitality, beautiful nature, hilly terrains and high-level organization to sports fans worldwide.



## Good Food Festival - Grillfest

9 – 10 June 2017

Pärnu

[www.grillfest.ee](http://www.grillfest.ee)

Grillfest is a versatile food festival that invites all people who like to enjoy exciting and delicious food and a good cultural program in beautiful nature and in great company.

The 27 000 sq. meter festival ground is ready to welcome tens of thousands of visitors and the entrance is free for everyone!





## Youth Song and Dance Celebration

30 June – 2 July 2017

Tallinn

[www.2017.laulupidu.ee](http://www.2017.laulupidu.ee)

The 12th Youth Song and Dance Celebration, taking place in 2017, focuses on 'roots', the relationship between the young and their country, culture, and the older generation that provides us with the strength to preserve and pass on the wisdom of our ancestors – our way of being. The song festival highlights the music of the new generation and there are several young conductors in addition to experienced ones. The dance festival is based on the folk tale 'Koit ja Hämarik' (Dawn and Dusk), a story of carrying on lasting values and the responsibility to maintain it. The song and dance festival tradition has been included in the UNESCO intangible culture heritage list.



## Into the Valley

29 June – 2 July 2017

Rummu

[www.musicgoesfurther.com/festival/into-the-valley](http://www.musicgoesfurther.com/festival/into-the-valley)

Into the Valley is an electronic music festival inside a former limestone quarry in Estonia. Set amidst this awesome backdrop, the festival combines cutting edge electronic music with a spectacularly unique location.

Although this is only the third edition, and its first in Estonia, its stages have already been graced by house and techno royalty, with the likes Richie Hawtin, Tale of Us, Dixon, Ellen Allien, Four Tet and a whole host of other underground heroes spinning tracks inside its spectacular setting. Into the Valley still manages to maintain an intimate party vibe, heightened by its impressive sound quality, lighting and stage design. This truly is a festival like no other.

## Tchaikovsky Festival

28 June – 1 July 2017

Haapsalu

[tchaikovskyfestival.ee](http://tchaikovskyfestival.ee)

Tchaikovsky Festival is a brand new classical music festival in the picturesque town Haapsalu. The festival offers classical music concerts by the leading Russian theatre Moscow Novaya Opera in the Haapsalu Castle Yard. The chamber concerts, the thematic walks in Tchaikovsky's paths, the children's concerts and, of course, the Estonian National Ballet's grand open air performance 'Swans' will be performed on lake Väike Viik in Haapsalu.





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