

# LIFE IN Estonia

WINTER | 2012 / 2013

**SPECIAL!**  
e-Estonia

**The Estonian  
Tiger Leaps  
Again**

**A Hotbed  
Of Startups**

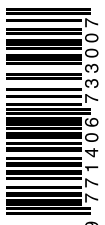
**Ewert And  
The Two Dragons**

**Flavours  
Of Estonia**

**Mike Gault:  
Guarding  
The Cloud**

**Kaido Ole  
Paints Fringe Zone**

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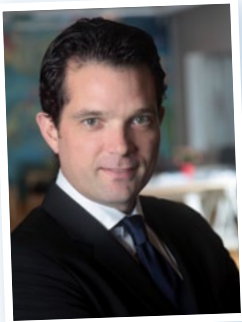
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# LIFE IN Estonia



## COVER

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Photo: Jaanar Nikker

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## New Public Order

You may have heard somebody mention Estonia as a small country somewhere in the Baltics. They may have mentioned the Old Town of Tallinn, a UNESCO world heritage site; it may have been the beautiful girls someone remembered from his last visit; it may have been the trip to some parts of the Estonian countryside that looked like the National Geographic's colourful photos of untouched wilderness.

It is also quite likely that you have heard rumours of a country trying to get its government fully online, their public services all on the Internet, their citizens equipped with digital identities and having everybody connected 24/7. Well, perhaps they found time while enjoying the beautiful landscapes.

This issue of Life in Estonia will try to shed some light on the e-affairs of Estonia. Some myths will be brought to light and looked into. Some new ideas will be shared about what's next. More importantly, this issue will present what the almost-20-year journey of building our e-government has looked like, what we have learned and which ideas are today considered worthwhile spreading around the world about how governments and countries can embrace the new paradigms of the information society.

Recent years have been extraordinarily exciting in the way information has shaped the world. We have seen how social networks and the ICT are capable of changing the political world overnight, not only in countries and governments, but in whole regions. Think of the Arabic Spring events at the end of 2010, which forced rulers from power in at least four countries and caused major unrest in dozens of others. In 2010 Wikileaks changed forever the way governments think about information. Making it onto the "The World's 100 Most Influential People" list in Time Magazine in April 2012, the amorphous hacker movement Anonymous has shown us how vulnerable the world really is in the face of cyber attacks.

At this time, Estonia is in the process of creating a new Information Society strategy. It is a time to peek behind the curtain and see if we can predict what the world will look like in 2020. Maybe there will be moon bases by then, but maybe not. Maybe we will have had a breakthrough in harnessing a new type of fuel source to sustain our ever-growing appetite for energy, but maybe not. Maybe we will have found a way to warp through space-time by then, but maybe not. One thing is certain though – we will all, every one of us, be infinitely better connected and have magnitudes more computing power in our hands by then.

### Andrus Aaslaid

Ministry of Economic Affairs and  
Communications Counsellor,  
State IT Infrastructure



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## 22 Treading In The Cyber World

Cyber defence is gaining more and more importance on the political and military levels. Experts agree that future warfare will not be fought in cyberspace but

cyber will be one of the important elements in future conflicts. The NATO Cooperative Cyber Defence Centre of Excellence, established in 2008, provides education, consultation, lessons learned, research and development in the field of cyber security to NATO allies and partners.

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Guardtime is a company founded in Estonia which provides technology that helps to prove the validity of digital data. Toivo Tänavsuu interviews Mike Gault, the CEO of Guardtime.

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At the end of November, twenty-five Estonian angel investors established an umbrella organisation called EstBAN, Estonian Association of Business Angels. Ivar Siimar, Head of the Association, talks about how the angels aim to “fertilise” the market of seed financing to boost the number of investments made in Estonia in the next few years.



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Estonia has been called a hotbed of start-ups. Life in Estonia presents some of the dozens of start-up companies active in Estonia. Our selection includes start-ups which have already found investors and proved themselves in the market, as well as those which have reached the prototype stage and are waiting for a breakthrough.



## 32 The Way To An Accelerator Through The Hackathon And Extreme Team Building

According to Enterprise Estonia, 10 to 20 new tech start-up companies are set up every year in Estonia, with the start-up community being mostly based in the capital city of Tallinn. Among the focal points of the community is the Garage48 Hub, a community-led co-working space for over 20 companies.

## 35 Business Angel Dave McClure: Estonia Is An “IT-Anomaly”!



This autumn a group of thirty venture capitalists, managers of global technology companies and just plain technology nerds, collectively known as “Geeks on a Plane”, visited Estonia. We caught up with the leader of “Geeks on a Plane”, Dave McClure, in order to ask him a few questions.

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The Estonian IT programme Tiger Leap is probably known all around the world. Having been involved in the programme from the word go, Linnar Viik, today a lecturer at the IT College, is the right person to explain the nuts and bolts of the programme.

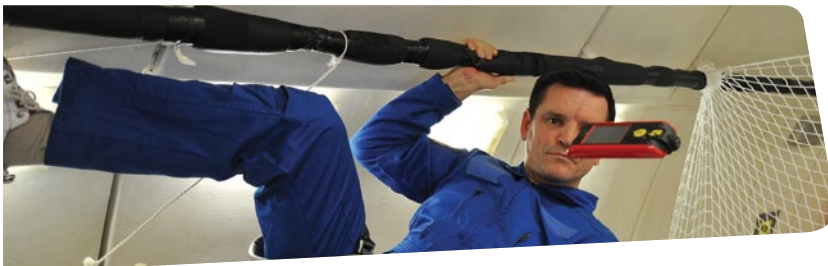


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The Estonian IT College is a private, non-profit, higher educational institution established in 2000. Get acquainted with the leading IT institution of applied higher education in Estonia.

### 42 Estonian eTiger Goes Global

Estonia is globally known as a country with a highly developed IT infrastructure. Understandably, IT-related curricula are the most popular in the country. The Tallinn University of Technology is taking advantage of Estonia's e-state competency and experience, and teaching it to approximately 15,000 students. Now it also introduces global e-state technology in Silicon Valley and Shanghai.



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Space is no longer a privilege of world powers. Some of the most exciting and ambitious projects in Estonian science have to do with space conquest. Life in Estonia introduces the three which are closest to take-off.

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In 2012 Estonian film celebrated its 100th anniversary. Although Estonian films rarely earn the grand prize at the world's big film festivals, Estonian cinema is still viable and new filmmakers graduate from the Baltic Media and Film School each year. Recently, the school moved into a distinctive, futuristic building. Get acquainted with the curricula and programmes of this international media school.



### 51 PORTFOLIO Kaido Ole – A Pedantic Rebel

Kaido Ole is a man in demand. He is a painter and a thinker, a teacher and a performer. No other artist has put on such vigorous exhibitions in Estonia.



### 64 The Must-Have Souvenir From Estonia

The indie-folk-rock band Ewert and the Two Dragons is a living example of how dreams tend to come true when you hold on to them very tightly. In October, they signed a record deal with the legendary Sire Records, which thirty years ago made Madonna famous. The band has taken Estonia by storm and has just returned from its first tour of the US and Europe..

### 68 60,000 People Visit The Estonian Mammoth

An old sports hall in the village of Äksi, near Tartu, got a new life as the Ice Age Centre and became a unique and original tourist attraction. It is a nature study and visiting centre that combines a popular scientific approach to the Ice Age with entertainment.



### 71 Flavours Of Estonia

For the fifth year running, the fifty best Estonian restaurants have been selected. Life in Estonia put five questions to Aivar Hanson, the manager of the contest "Flavours of Estonia". The ranking process of 2012 proved to me more delicious than ever before. And it evoked much more emotion than before. Therefore it must be a good ranking. Bon appétit as you eat your way through this list!

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ORCHESTRE NATIONAL DU CAPITOLE DE TOULOUSE

Eesti Kontsert

**ORCHESTRE NATIONAL DU CAPITOLE DE TOULOUSE**



Soloist **Elisabeth Leonskaja** (piano)  
Conductor **Tughan Sokiev**


*Hector Berlioz. "Le Corsaire"*  
*Robert Schumann. Piano Concerto*  
*Piotr Tchaikovsky. Symphony No. 4*

SUN 17<sup>th</sup> of February 17.00 Estonia Concert Hall

EESTI KUNSTIMUSEUM

**KUMU**


European Museum of the Year Award 2008



**Raoul Kurvitz**  
18.01.–21.04.2013

The exhibition includes the multi-faceted work of Raoul Kurvitz (b. 1961): videos, performances, paintings, installations and much more from the late 1980s to the present day. The exhibition brings Kurvitz's most noteworthy works to viewers, and many of his works are today among the classics of Estonian contemporary art.

RAOUL KURVITZ. MAELSTROM. 1999. ARTIST'S COLLECTION



**Imaginary Spaces and Urban Visions. Highlights of Japanese Animation**  
08.02.–19.05.2013

The exhibition includes original drawings from Japan's most important anime artists and directors. These works, produced between 1987 and 2009, are being displayed for the first time as individual works of art, separate from their role in the production process of the films.

KOJI MORIMOTO. IMAGE FROM EXTRA. COPYRIGHT BY STUDIO 4°C, ReS RECORDS AND SONY MUSIC

**KUMU ART MUSEUM**  
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Phone +372 602 6000, www.kumu.ee

Open: Oct–Apr Wed 11am–8pm, Thu–Sun 11am–6pm  
May–Sept Tue 11am–6pm, Wed 11am–8pm, Thu–Sun 11am–6pm



## THE PRINCE AND THE PAUPER

World premiere at the Estonian National Opera on 26 January 2013

Music by **Priit Pajusaar**  
Libretto and dramaturgy by **Aapo Ilves**  
Conductors: **Mihhail Gerts** and **Risto Joost**  
Stage Director: **Andres Puustusmaa**

*A tale for young people of all ages!*

The Prince and the Pauper, based on Mark Twain's exciting youth novel, tells the story of the unbelievable adventures of two boys: Edward Tudor, the crown prince of Wales, and Tom Canty, a beggar boy from the London streets.

The leading roles will be played by two of this year's graduates of the Estonian Music and Theatre Academy's Drama School, the twins Märts and Priit Pius.

## TANNHÄUSER

*Grosse romantische Oper* in three acts  
by Richard Wagner

Premiere at the Estonian National Opera on 14 March 2013

Conductor: **Vello Pähn**  
Stage Director: **Daniel Slater** (England)  
Designer: **Leslie Travers** (England)

In 2013, the whole world will celebrate the 200th anniversary of Richard Wagner's birth. "Tannhäuser", was the first opera in which Wagner moved towards music drama. Telling the story of man's struggle towards his dreams and the danger of losing touch with reality, "Tannhäuser" unites the historical with the mythological, creating a world of magical realism common to Wagner's operas. Today the most famous melodies from "Tannhäuser" are the Pilgrims' Chorus and Wolfram's aria.





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## The Latitude59

The Latitude59 Conference is the go-to place for the Nordic and Baltic start-up scene, for venture capitalists and start-ups, in the spring. The conference offers alternative views on what technologies and challenges start-ups are tackling. In 2012, the conference was held for the fifth year, and it is a continuation of the annual conference organised by Enterprise Estonia and the International Technology Law Association in Tallinn, which began in 2008.

The goal of the conference is to bring together innovators and start-up entrepreneurs to meet angel investors, VC partners, lawyers and those supporting the global expansion of innovative companies from countries three hundred kilometres either side of Latitude 59. The focus of the conference is broader than the usual web and mobile start-ups. It elevates and draws wider attention to alternative areas of technology as well: biotech and clean-tech. That differentiates it from the standard start-up conference in the region, providing its audience with broader and more interesting content.

Latitude59 is a partner conference for the Slush and Arctic15 autumn conferences in Helsinki. It partners with Riga Tech Hub, Aalto Venture Garage and Arctic Startup for a wider reach in the region.



## MIT Global Startup Workshop

Tallinn, Estonia. March 25-27, 2013

### What is the MIT Global Startup Workshop?

The MIT Global Startup Workshop is the world's premier workshop dedicated to fostering entrepreneurship by building a global entrepreneurial ecosystem. The Workshop is hosted in a different city around the world each year and brings together over 300 entrepreneurial leaders, executives, next generation entrepreneurs, professors, financiers, and government officials to build connections between cultures, regions, and backgrounds.



### What happens at the Workshop?

This year's Workshop theme is "Unleashing Technological Entrepreneurship". Over three power-packed days, the event will feature stimulating discussions to generate ideas and share best practices while also networking and socializing with fellow attendees. Discussions will be held over themes that are important to universities and to the entrepreneurial ecosystem such as commercializing university research and developing a high effective entrepreneurial ecosystem. Furthermore, the event will explore opportunities in energy, mobile, imaging technologies, personal health, big data, social media, and technology entrepreneurship in emerging markets.

### Why Tallinn, Estonia?

Tallinn was chosen as the location of this year's MIT Global Startup Workshop in order to promote technological entrepreneurship in Estonia and the Baltic and Nordic regions. Estonia is an exceptionally wired country that is poised at becoming a nucleus for technological entrepreneurship in Europe in sectors ranging from Information Technology to heavy industries such as shale oil and gas. The MIT Global Startup Workshop Committee was pleasantly surprised by Estonia's positive outlook and coordinated approach to fostering startups focused on doing business globally. In Estonia, there are more startups per capita than in any other country in Europe (according to WSJ).

Join us in Tallinn 25-27th March 2013!  
Enterprise Estonia is honored to be a partner of the 16th Annual MIT Global Startup Workshop.



Registration is open at [www.mitgsw.org](http://www.mitgsw.org)  
Be informed [www.facebook.com/mitgsw](https://www.facebook.com/mitgsw)  
and [www.twitter.com/mitgsw](https://www.twitter.com/mitgsw)





## CyCon – a Gathering Place for Cyber Defence Experts

The NATO Cooperative Cyber Defence Centre of Excellence organises a conference each year to bring together experts from different disciplines to discuss recent trends in cyber security. The next CyCon will take place 4-7 June 2013 in Tallinn, Estonia and it will concentrate on the use of automatic methods in cyber conflicts.

### Why such a topic?

As the modern society becomes increasingly dependent on information technology, it also becomes more sensitive to cyber conflict. One way forward is through systems that require less, if any, human oversight to operate. This can already be seen in the expanding use of sophisticated models and algorithms in network traffic analysis and correlation, cyber attack detection and classification, cyber asset vulnerability analysis, prediction of potential future attacks, and planning and generation of counter-attacks. The current approaches, which are mostly based on low-level data analysis and fusion, will likely evolve into approaches based on the cognitive analysis of cyber conflict situation awareness and decision support. The methods of automation in cyber conflicts are closely tied to the models of cooperative man-machine user interfaces that form the basis for integrating the machine and human intelligence in cyber conflict.

This event, just like the previous conferences, is a mixture of law, policy, strategy and technical presentations from a wide range of speakers from all over the world, representing the business, governmental and military sectors.

CyCon 2013 will be conducted in technical cooperation with the IEEE Estonia Section.

For more information, please go to [www.cycon.org](http://www.cycon.org)



## The world of European innovation – European Innovation Academy

The academy, this year located in the heart of Estonia Tallinn, utilises this inspiring environment to unleash the entrepreneurial potential of young change makers by building on top of their collective intelligence to co-create new ventures and stimulate innovation.

Attracting the world's brightest students and young entrepreneurs. Focused on triggering the participant's creative capabilities; perfecting their pitching abilities and placing them in a stimulating international environment where they will get inspired to achieve greater things. That's what European Innovation Academy is all about.

Students equip themselves with knowledge on how to build a venture from the ground up, focus on customers, markets and the speed of iteration. European Innovation Academy is becoming the next breeding ground for international start-ups, bringing together all stakeholders involved in the entrepreneurial process. Leading in the fields of Innovation Management and Entrepreneurship, the European Innovation Academy evolved to the most recognized high-quality training program in Europe with an annual development of several successful start-ups and educating high-potential entrepreneurial-minded people. This course provides a combination of academic and professional expertise on the operation of the world's most innovative companies.



### Practical Information

The European Innovation Academy invites participants twice a year. A short crash course will be provided during the Winter Session, from 21 to 27 January 2013, and a longer more intensive course during the Summer Session, from 1 to 26 July 2013. The course will be held at the Centre of Technology at Tallinn University of Technology.

More information: [www.innovationacademy4.com](http://www.innovationacademy4.com)  
[info@innovationacademy4u.com](mailto:info@innovationacademy4u.com)  
[www.facebook.com/innovationme](https://www.facebook.com/innovationme)





## Estonian President to Lead EU Cloud Computing

**President Toomas Hendrik Ilves is set to head the European Union's cloud computing council, which aims to develop cross-border digital public services in the public and private sectors**

Ilves was invited to chair the Steering Board of the new European Cloud Partnership by the European Commission's digital development commissioner Neelie Kroes.

"Leading the council is a great opportunity for Estonia to have a role in shaping the course of Europe and to work in cooperation with visionaries and technological leaders such as Amazon, Ericsson, F-Secure and Telefónica Digital. Cloud computing is the today of information technology, it is important of us that the whole Europeans data was under the European rules and control," Ilves said in a press release.

The Estonian president said one of the challenges ahead is skepticism toward digital public services, including cross-border services, as well as security and interoperability of applications.

## ProgeTiger takes coding to each and every schoolchild



In September 2012, the Tiger Leap Foundation brought to life a new programme targeted at schools. The programme ProgeTiger enables pupils of all grades to learn about coding and the creation of web applications. "Pupils' interest in using contemporary technologies has grown from year to year. Yet, as the school curriculum has expanded, the number of computing classes has decreased. The ProgeTiger programme creates the preconditions to turn pupils from software users to software creators," explained Ave Lauringson, Head of Training at the Tiger Leap Foundation. "Coding comes as an addition to the field of robotics, which we have supported for a few years already." The initiative by the Tiger Leap Foundation is supported by various technology companies.

After their class teachers had undergone training, the first ones to start coding lessons were primary school pupils. In 2013, coding clubs will open to the middle school and gymnasium levels. "Schools are showing great interest in ProgeTiger. In addition to schools, parents have contacted us through school councils that wish to introduce coding

"The risk is that Europe will adopt the solutions of the previous generation, which are not secure and are likely to reduce, not increase, people's trust of digital services. For example, the username/password solution might be favored over a pan-European electronic ID card," Ilves said.

He added the widespread adoption of cloud computing, along with changes pertaining to necessary data protection and digital content rights, would establish the prerequisites for a common market of digital services and e-trade development in Europe.

"The primary beneficiaries would be the citizens of the European Union, small and medium sized companies, and government agencies on every level. Service providers for network and data centers and software companies would also benefit from this," Ilves said.

The council led by President Ilves will also include several connoisseurs and spokesmen of the field, including the former Hewlett-Packard CEO Léo Apotheker, F-Secure Corporation CEO Christian Fredrikson, Ericsson CEO Hans Vestberg, Amazon Vice President Werner Vogels, CEO of ATOS Thierry Breton, and Dassault Systèmes CEO Bernard Charles.

In November, TechCrunch, a web publication that offers technology news and analysis, as well as profiles of start-up companies, products and websites, highlighted this year's most innovative people in democracy. In the category of Titans, Toomas Hendrik Ilves was awarded 3<sup>rd</sup> place, after Barack Obama and Google founder Eric Schmidt on the following basis:

.../President Ilves presides over the most technologically advanced democracy on Earth: citizens vote online, enjoy universal access to medical records, and can perform most government services without leaving their laptops (Estonians filed their taxes online long before it was popular in the U.S.). So impressed with Estonia's track record, the European Union now consults him on how to rework its own fledgling attempts at an electronic medical system.

clubs and studies in their schools," said Lauringson. She added that coding will probably not be taught in all of the 500 secondary education schools in Estonia, as the courses are voluntary. The courses offer schools the opportunity to diversify the number of extracurricular activities offered and to supplement what is offered in the school curriculum.

The Estonian project has received a vibrant response in foreign media, starting a discussion on teaching coding in secondary schools elsewhere in the world. For example, The Guardian asked its readers whether the UK should follow Estonia's example, a question which received a positive response from 70% of the respondents. An article posted in the technology blog venturebeat.com asks in its title who will win the brainstorming session in which all first grade pupils are studying programming, and then provides the answer: "It is Estonia!" The author finds that the Brits are paying too much attention to teaching literature and they are not preparing youngsters to be competitive in the world, which is becoming increasingly digitalised.

The topic was also aired in the technology section of the Washington Post, where it was found that, although not everybody needed to become a programmer, the ability to learn a coding language would become essential in the near future.

## Estonian scientists discover depression-related gene

**It was a step further in determining the causes of depression when scientists at the University of Tartu described associations between LSAMP gene polymorphisms and emotional disorders.**

According to Eero Vasar, Professor of Physiology, exploring potential relationships between polymorphisms in the limbic system-associated membrane protein (LSAMP) gene and mood and anxiety disorders began in the early 21st century, when the first studies looked at anxiety-related genes in the brains of laboratory rats. The tests involved confronting rats with the scent of cats in order to find out which genes were linked to increased anxiety in the rats. The gene identified was LSAMP, which is very similar in rats, mice and humans.

Although rats are social animals and it is possible to draw some parallels between these behavioural tests and human behaviour, tests to create transgenic rats with the gene turned off have failed to date. Therefore, scientists turned to mice, whose way of life and the way they socialise is very different to that of rats. The mice whose LSAMP genes were switched off were incredibly calm. Hence, the studies with mice demonstrated reduced anxiety.

"They reminded us of hippies who were always in a good mood," said Vasar. "They lacked aggression and their anxiety was significantly lower. In tests, where normal mice began to swim like mad in order to save their lives, the experimental mice also swam, but seemed to really take their time. We cannot draw direct links between human and animal behaviour, but the experiments with mice do point us in a direction where we can carry out further research," said Vasar.

In the latest study, the scientists looked at whether the LSAMP gene linked to anxiety in rats and mice can be linked to depression and anxiety disorder in humans.

A research project carried out at the Clinic of Psychiatry of the University of Tartu Hospital studied 591 patients suffering from depression and panic attacks. Three hundred and eight-four healthy subjects were recruited through a newspaper advertisement. "We established a clear relationship with depression. But the link with panic disorder and LSAMP was not as obvious," explains Vasar.

Different versions of the same gene can either increase depression or offer protection from it. The healthy subjects had an equal number of the gene versions that raised the risk of depression and those protecting from it. The patients had a higher number of the gene version that increased the risk of depression.

"We plan to take our research further and study patients suffering from schizophrenia next. Some mechanisms between these two very important psychiatric disorders – depression and schizophrenia – may be rather similar," explains Vasar.



CLOUDMORE

## Market leading European cloud service provider to open a development centre in Estonia

Cloudmore, the market leading cloud service provider in Europe, has selected Estonia in addition to Spain, Ireland and Poland to be a location for one of its development centres. Cloudmore's decision to open its development centre for accelerating innovation in Tallinn was encouraged by the 'value offer' about Estonian advantages compiled by Enterprise Estonia.

Cloudmore collected plenty of information about different countries before making a decision in the favour of Estonia due to the accessibility of a qualified workforce, economic stability and potential partners.

"Estonia won because the country's business culture resembles the values of Cloudmore and the offer was clear and understandable, not to mention the fact that a flight from our head office in Stockholm to Tallinn lasts less than an hour which makes it very convenient," said Executive Manager of Cloudmore, Michael Wicander. "We have already started with enlarging the team of talented software developers. Our aim is to really expand in Estonia in 2013," Wicander continued

Cloudmore enables businesses and organizations to make a smoother transfer to cloud computing. Founded in 2004, the company came onto the market in 2007. It employs 21 people and is represented in Finland, Sweden, Norway, Great Britain and Ireland. Over 5,000 organisations currently use the patented IT-management platform provided by Cloudmore together with customer support and training.

Cloudmore assists end-user companies to start using IT-models based on cloud computing and simplifies the introduction of models received from leading sellers and service providers in business activity, by linking appropriate services and making them available to end-users via a wide network of advisers.





# Encounter The Seven Wonders Of Estonia

Text: **Rein Sikk**, journalist, Eesti Päevaleht  
Organiser of the competition "Wonders of Estonia"

The "wonders" selected by the people included a boiling well, an ancient crater and a contemporary museum.

In summer 2012, Estonia joined the honourable list of countries and locations which can boast of their own seven wonders. The list is extensive, including Russia, Canada, Columbia, Ukraine, Thailand, Wales, Florida, Egypt, Poland, Serbia, India and Spain. The Finno-Ugric world, with 25 million inhabitants, ranging from Hungary to Siberia, has also found its wonders. The competition to find the wonders around the Baltic Sea has just been completed, and one of the wonders selected is the Old Town of Tallinn. As recently as 2007, the new Wonders of the Modern World were chosen including: Taj Mahal in India, Chichen Itza in Mexico, Christ the Redeemer in Brazil, Colosseum in Italy, Great Wall of China, Machu Picchu in Peru, and Petra in Jordan.



Why do we need the Wonders of Estonia? It is, after all, just a gimmick. Such thoughts were expressed by sceptics last spring when the daily newspaper Eesti Päevaleht and Enterprise Estonia announced the competition. The organisers found that, despite the typical modesty of Estonians, we would benefit from casting a bolder and broader look at our own country to find something special about it. Therefore, the question posed was: "Which seven special, brilliant and yet-to-be discovered symbols are there in Estonia in 2012 without which our view of Estonia today would be incomplete?"

### **Conflict brought fame**

First place among the Seven Wonders of Estonia went to .... a boiling well. People who hear about it for the first time usually refuse to believe

it. But it is true: after a heavy downpour, a well situated on a farm in northern Estonia starts to spout water and flood over. This does not happen quietly: the water spurts out, creating a hill of water above the well. According to a legend, there are witches in a sauna under the well beating each other with birch branches. Thus the name the Witch's Well.

The witch's well starts to "boil" when the water flow in the underground Tuhala River is at least 5,000 litres per second. Scientists claim that the well is one of the most unique natural phenomena in Europe because of the way the water pressure builds up in the underground river.

The events of the past few years have definitely helped to make a wonder out of this miraculous well. In particular, there were plans to open a quarry in the area. The miners ignored the warnings by geologists that such activity would destroy the unique well and endanger the ground water level. The protest has become entangled in a legal process but the importance of the well as a wonder has grown.

Representing the winner, Ants Talioja, Manager of the Tuhala Nature Centre, said that he was hoping to win. "The Witch's Well as a Wonder of Estonia offers an opportunity to appreciate the public interest in this marvel of ancient nature. The 'boiling' of the well is a natural miracle which cannot be brought about by humans. But mining in the nearby area may destroy this miracle," explained Talioja.

### **How the wonders were selected**

Everyone was able to nominate candidates via letter, phone, e-mail or website. Specialists from Enterprise Estonia and the daily Eesti Päevaleht made a selection from all the nominees.

For ten weeks, ten nominees per week were put up for election on the website. The three with the least number of votes dropped out and were replaced by three new nominees.

Altogether 18,491 votes were cast for the 37 wonders which participated in the competition, and 5,057 of the votes were cast in the last round.

### **A richer Estonia**

Representatives of all of the finalists considered it essential to acknowledge the beauty and values of Estonia. "It is a great idea to introduce the places and activities which we have, but which many people still have not seen. We saw once again how rich and diverse our small country is," said Enn Raadik, Head of the Western Region of the Estonian Road Administration, who is one of the initiators of ice roads, another wonder which was selected. "People in Estonia can now better appreciate our natural and man-made marvels," explained Raina Hani, Manager of the Visitor Centre of the Piusa Sand Caves, a former sandstone mine.

As an organiser, I felt the enthusiasm of the Estonian people as they searched for their wonders, and as they wrote or phoned me with their findings. This was patriotism at its best. The best acknowledgement of this enthusiasm came from the message that the previous summer a group of campers had taken along a list of all the thirty-seven entries to the competition and had discovered Estonia in a new way by personally visiting each one of them.

# The Seven Wonders of Estonia 2012



## Tuhala Witch's Well - bubbling mysticism

When people unfamiliar with Estonia are told that we have a well where the water boils, they usually just stare in disbelief. The surprise is even greater when they are shown a photo or visit the location themselves. During the "boiling" period, there are 20,000 visitors to the Witch's Well.



## Kaali Lake - home of the big bang

Seven thousand years ago a meteorite weighing forty-six tons landed on Saaremaa, causing a natural catastrophe and kicking off generations of legends. Today, there is a lake covering the landing spot, which is visited by 70,000 people every year.



## Road Museum - special life of the ordinary road

Full of things to see and touch, the modern, moving and beeping Road Museum in southern Estonia offers the history of human inhabitation through the story of roads, starting with footpaths and ending with modern flyovers and intersections. The museum's success can be attributed to the fact that it offers attractions to everyone, from babies to grandpas.





### Ice roads - longest in Europe



In especially cold winters, when the sea ice is thick, six official ice roads are opened between western Estonia and the islands – their total length can exceed 80 kilometres. Nothing of the kind exists elsewhere in Europe. The Estonian ice road wonder has attracted visitors from as far away as Australia and America. 55,663 cars travelled on the ice roads in the winter of 2011.

### Six million Estonian nature enthusiasts

In 2011, Eesti Päevaleht also selected seven Estonian symbols which can be used to introduce Estonia to our own people as well as foreign visitors. The most important Estonian symbol became “nature cameras”, which provide an online view of Estonian nature. For example, they make it possible to view how wild boar are fed in the winter or how baby eagles are born in their nest. During the year, nature cameras received six million visits from 150 countries.

See more: [www.looduskalender.ee/en/](http://www.looduskalender.ee/en/)



### Orissaare stadium - oak tree at the football ground



A football stadium with a 500-year-old oak tree growing in the middle of the pitch can be found nowhere else in the world. But the sportsmen of Saaremaa consider it normal. When they built the stadium, the locals felt sorry for the ancient tree and they decided to keep it. Today, it enables young footballers to execute perfect kicks with an intervening tree bounce.



### Northern yard of the Hermann Castle - golden Swedish times



In the easternmost town of the European Union – Narva – there is a castle where people live in the year 1700. The Northern Yard of the Narva Hermann Castle, which has been open for six summers, is an attempt to restore the lifestyle of handicraftsmen back then. It is a bustling nest of handicraftsmen, where different products are made without the help of electricity or modern equipment.

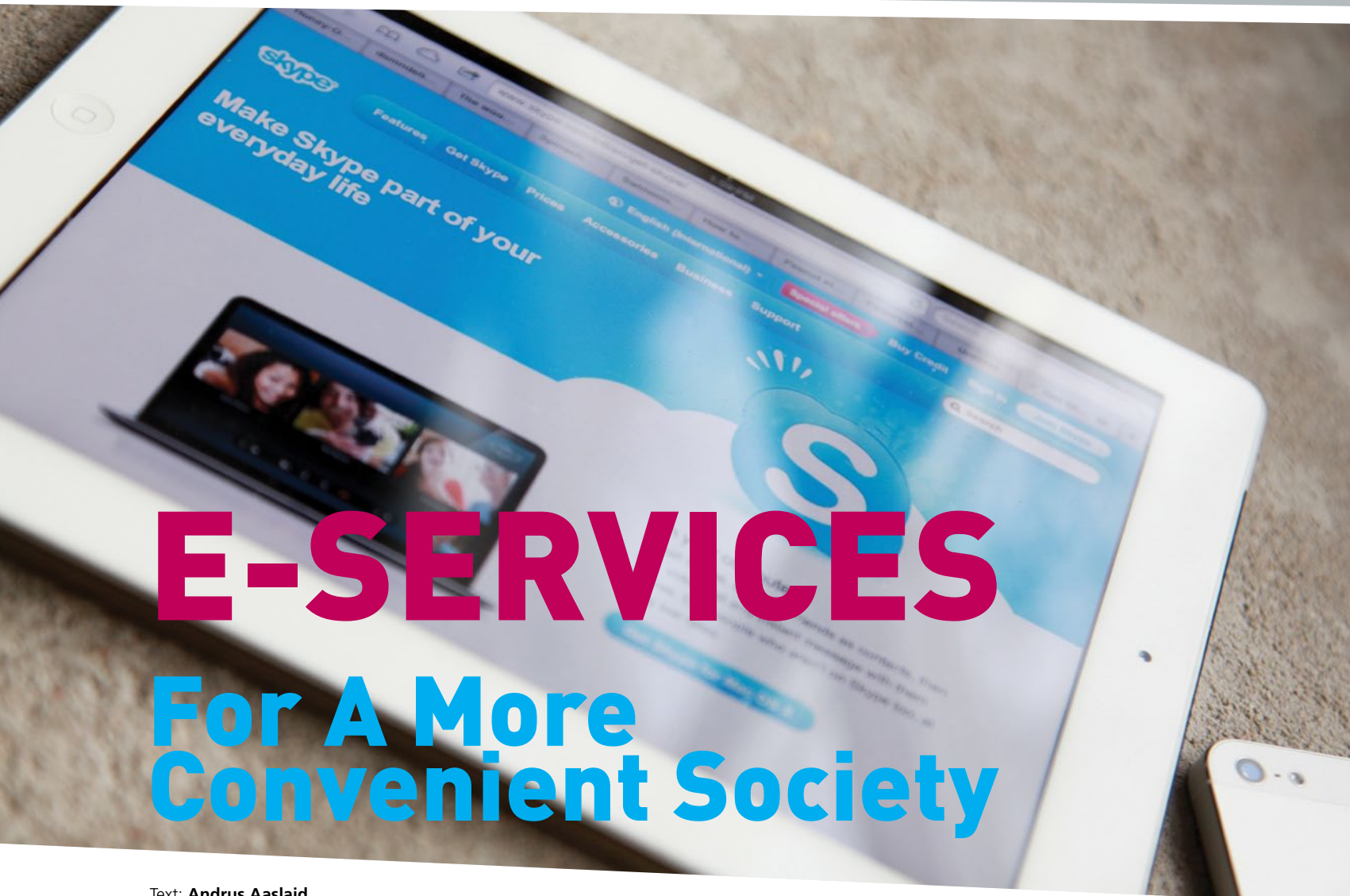


### Piusa caves - return of the underground



The sandstone mining for the glass industry which began in Võru County in 1922 left behind 30 kilometres of mining caves, which are up to 14 metres in height. The caves, which had become dangerous due to the threat of caving in, got a breath of new life when the visitor centre and viewing platform were opened. Thousands of bats reside in the caves in winter.





# E-SERVICES

## For A More Convenient Society

Text: **Andrus Aaslaid**

Ministry of Economic Affairs and Communications Counsellor,  
State IT Infrastructure

### What will governments and public service look like in 2020

Estonia has been a leader in providing e-government services for almost 20 years. We have had incredible luck in developing our country at a time when many exciting technologies have emerged. As ICT has developed, we have also improved our services. It is true what some people say, that our government has grown up with the Internet.

Our last Information Society Strategy document covered the time period from 2007 to 2013 and, with some luck, this document is still valid today. We were able to predict the online connectivity driving the demand for services and the state's role in creating a "user friendly" government. Today, we are in the process of crafting a new strategy, foreseeing the role of ICT up until 2020. The task

is somewhat more complicated than before. Today, it is not about finding e-government solutions to allow for more convenient public service; it is about creating e-services to ensure a more convenient society.

The current models for providing the best possible public service for our citizens have been focused mainly on getting more stuff online faster. Although countries have different approaches to creating e-services for their citizens, the whole concept of being able to interact with your government online is more or less inevitable. At a time when everything and everybody is connected 24/7, there is little doubt that governments have to be also.

Bigger questions arise when we start talking about the citizen's role in connected government. The well-established concept of modern democracy is to work as a representative

system. We elect politicians according to our beliefs. Politicians then run the country for us for a predetermined period of time. During that time, the public has historically had some, but quite limited and somewhat extreme, levers to influence the politicians they put in charge. They can express their opinions publicly. They can try meeting with their favourite politicians in order to sell their ideas. They can strike, and organise meetings and public demonstrations.

However, at the beginning of the 21st century, all these methods are too cumbersome and indirect. We are used to typing whatever we want to know into Google and getting answers instantly. We are used to expressing our views online by just pressing "like" and expecting the other end to get the point. We would like to have our home countries run the same way.





**Democracy in the 21st century is no longer about elections and political manifestos. It looks like the picture below:**



This new public order will pose the greatest of challenges for today's democratic governments throughout the world, both technically and politically.

Estonia has created a superb foundation for really making a difference through ICT. Somehow this comes naturally to the Estonian people, the reasons for which are not yet fully understood. So it is a logical progression to embrace new concepts of how to run a state in the 21st century with the help of ICT. This belief is clearly justified if we look at our recent past.

The first phase of the Look@world project, which lasted from 2002 to 2004, educated more than 100 thousand people, making them computer literate. This was about 10% of the whole population. The main target audience, those experiencing the digital divide, were

elderly people, people from the countryside and everyone else who didn't have access to computers at the beginning of 2000. The result was quite outstanding: it is not entirely correct to say that the digital divide was totally eliminated back then, but we certainly got close.

Education moved hand-in-hand with new e-solutions, whether developed by banks, the private sector or the state, and this was topped off by the Skype success story and international popularity. Add the national digital ID card, which today is in the hands of almost all Estonian citizens, and you get a pretty connected nation, across all demographic groups.

It is now the responsibility of the new information society strategy to find ways to put all of that capacity to work, not only for public administration, but for democracy, the economy, entrepreneurship, education and all other sectors.

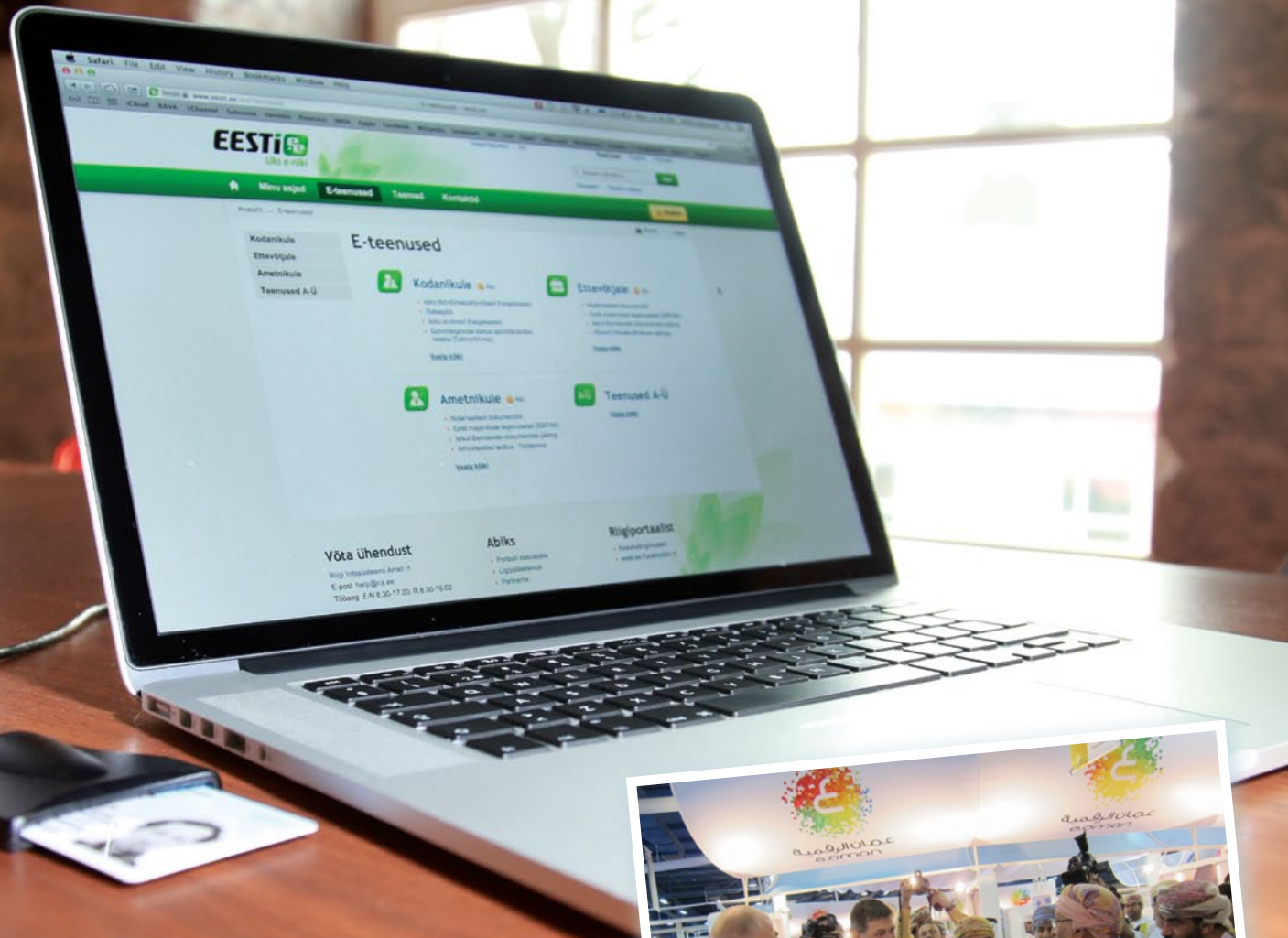
The main tasks in the coming years are connected with ICT's influence on the economy, state and democracy, rather than with ICT itself. We already have a booming start-up scene in Estonia, but e-commerce has to be an integral part of the business strategies of most companies. We do have free WiFi in many places, but there also has to be a 100+Mbit broadband infrastructure throughout the country. Almost everyone uses all sorts of e-services from government in their everyday

lives, but everything has to be mobile and related to social media.

The government have built a lot of new tools for public administration, generating gigabytes of data on a daily basis. However, the data have to be easily accessible for everyone to generate new solutions, applications and mashups. The application side has to become more crowd-sourced. There are a lot of government data centres, but a cloud infrastructure has to be formed sooner rather than later.

And, in planning all of this, cyber security aspects have to be considered in every strategy, initiative and technology deployment. The world is more vulnerable to random attacks than ever before, since almost all aspects of industry, infrastructure and people's lives are now connected. Never has the development of mass-havoc weaponry been so inexpensive as during the current period of cyber warfare.

This situation has become pretty widespread, but certainly not all of these challenges are being addressed by all the countries of the world. During the next seven years, until the end of the period outlined in the new strategy document, Estonia will build capacity in all of these areas. Hopefully, the world will be a better and safer place then. Meanwhile, let's enjoy the wonderful possibilities that we already have today and put them to good use.



# What Does Not Meet The Eye: e-Services For Everyone

Text: **Ivar Tallo**  
Founder and member of the executive Board, e-Governance Academy



Ivar Tallo has been the ambassador of e-Estonia to the world, introducing the principles of e-governance in several countries, including Tadjhikistan and Oman.

When struggling for independence 20 years ago, the people of Estonia were so happy they promised to eat potato skins if necessary. But they soon realised that political independence did not automatically bring economic well-being and a small, natural-resource-poor country would have to find its own way to become attractive. So, as early as 1996, the government decided that it needed to place special emphasis on ICT-related undertakings and announced the first Tiger Leap programme to computerise and connect all schools to the Internet.

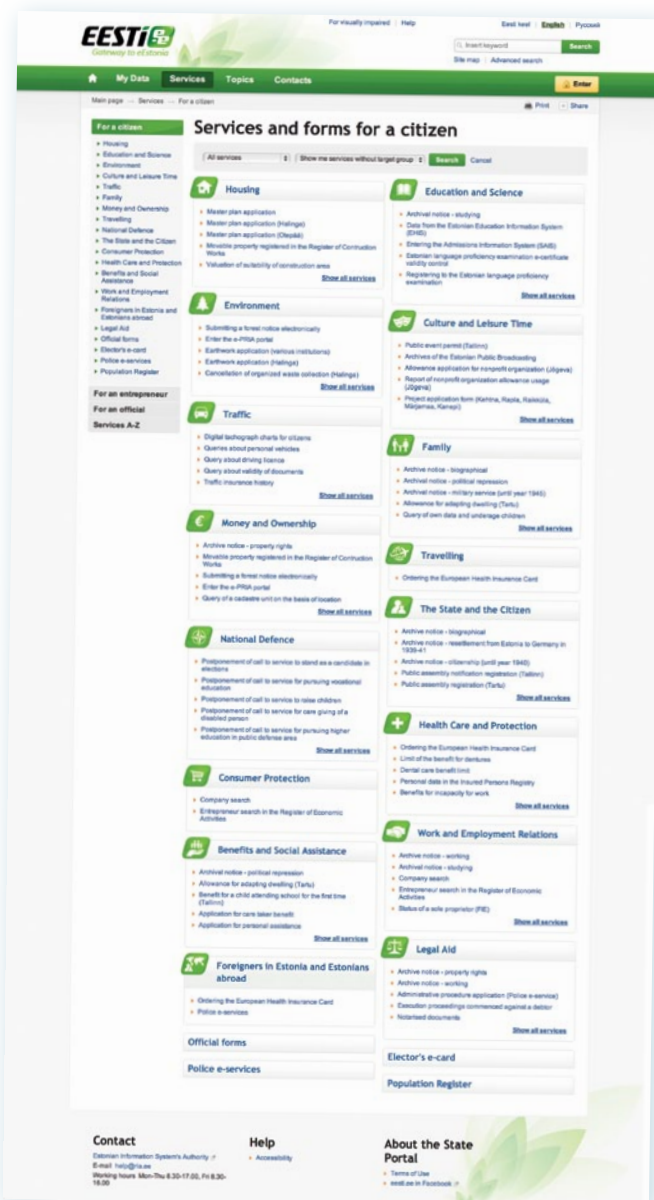
Fifteen years later and, according to statistics, practically everyone under 35 is an avid computer user, and overall Internet penetration is well above the EU average. Of course, people do different things with computers, from gaming and emailing to spending more and more time on Facebook, just like elsewhere in the world. But what makes Estonia stand out is how often people use the Internet for communications with government.

In the last seven years all businesses have paid their taxes on-line. For the year 2011, 94% of personal income tax forms were submitted on-line. A quarter of the votes in the last parliamentary elections were cast over the Internet, not in voting booths somewhere in towns and villages but from homes or on the road, wherever someone has a connected computer with an electronic ID card reader.



All this and much more is possible due to some clever decisions that consecutive Estonian governments have made in building an electronic government infrastructure. All of the databases that government agencies around the world create nowadays are digitalised; nothing surprising there. But Estonia started to connect the government a decade ago, with the Data Exchange Layer we call "X-Road", allowing agencies to use each other's data.

Moreover, our parliament changed our laws so that officials are banned from asking people for information that the government already has.



So, no running around with stacks of stamped papers! When filling in their income tax forms, people get them pre-filled, with all the info that the tax office has about their taxes and deductions, so they need to add only the data that government does not have, e.g. income from abroad. Even more, we do not need to worry about forgetting driving licences or car registrations; the police do not ask for them, as they have 24/7 access to relevant databases.

To deal with data protection concerns, people have been issued digital identification cards, and all transactions over x-Road are possible only through this strong form of identification. Looking back, introducing electronic identity 10 years ago was a really smart move, providing everyone with confidence that the person at the other end would be who s/he claims to be. Of course, one can prove identity with the help of a credit card or via login on Facebook or some other social network. But, in Estonia, official electronic identity provides people with the peace of mind that the digital signature is real and will stand up in a court of law when necessary. Recently, there was a guessing game going on to predict when exactly the 100,000,000th digital signature would be recorded and that happened on 3 December 2012.

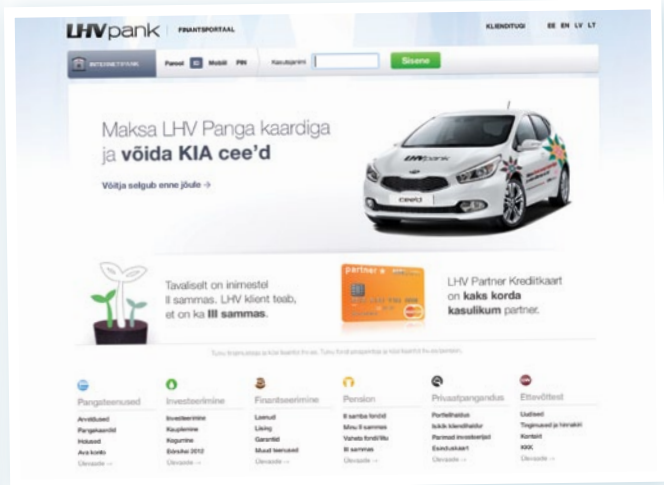


It is also worth mentioning that, since 2007, a digital signature can be provided by mobile phone, and this service is gaining popularity, as people do not need to carry their ID cards and find computers with card-readers.

Governments around the world have been joining the open government partnership and Estonia has done the same. There are a lot of things to do still, but transparency has been a feature of life since the beginning of the century. A multitude of information is accessible, and one can even read and access on-line cabinet meeting agenda and the majority of supporting documentation for government meetings. Of course, for data protection and national security reasons, some information is withheld.

Electronic interaction with the government allows people to participate in the political process. A special government website publishes draft legislative acts and allows people and organisations to comment on them even before they reach the parliament. Of course, not everyone cares in their everyday lives what happens in politics, but electronic services are everywhere. We rarely go to banks personally, as we use

electronic banking, we keep in contact with our children's teachers through an e-School environment and we also look for kindergarten places for kids over the Internet.



The early development of e-banking was probably one of the crucial prerequisites for e-government development, because when people got used to trusting Internet data regarding their money, they also began to trust other data. We don't use credit cards for electronic payments very often; instead, it is cheaper to use direct payment gateways. Our banks have been promoters of e-developments in Estonia in a big way, supporting such digital divide bridging initiatives as "look@world", which has trained 100,000 people in the basic use of computers and the Internet and later repeated that type of training for ID-card use.

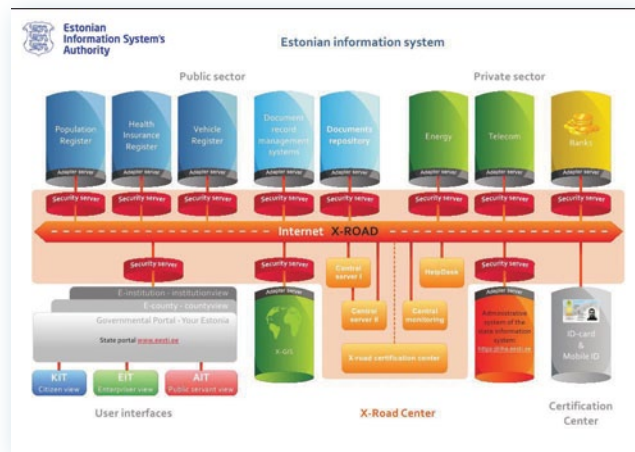


Two rather interesting systems are being developed for healthcare. We have got rid of prescriptions on paper, as doctors issue them over the Internet and people can just show their ID cards and pick up medicine in any drug store. This is especially convenient when somebody is chronically ill and, while previously it was necessary see a doctor every time to get a new prescription, now it is possible to just call your doctor and get authorisation to buy the required drug. And, if people are too ill to do it themselves, they can authorise someone else to buy drugs for them. To do so, one needs to log in to one's digital medical file system, find the authorisations page, and enter the personal identification code of someone whom you trust to bring you the drugs. In addition, there are a lot of other ways to make choices about life and death situations; namely, you can indicate whether you are willing to become an organ donor after death.

But the key part of the e-health system is really that your medical data is in digital form and you can allow doctors to access them whenever necessary. For example, you go hiking on our islands, break your leg, it is fixed and you go home; if you want your doctor to see the x-rays, they are immediately available. No need to carry all the paperwork with you. Someone not used to this might wonder how Estonians can trust such delicate info to the web; it is because people have control over it, they can close off their data to doctors and choose an option that can be accessed only if there is an emergency. Or if someone absolutely doesn't want any doctor to see his file without authorisation, even that is possible (although it might not be the smartest option). People in this system control their own data, and not doctors or the government.



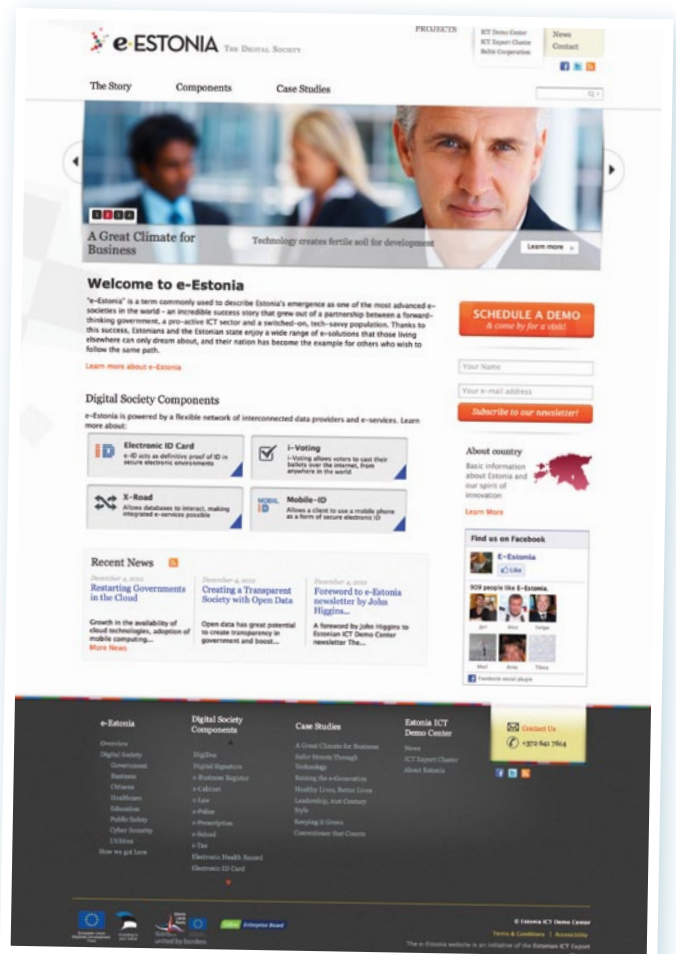
The Estonian government and Estonian companies are also actively promoting their experience creating our smart e-solutions and have offered to develop them elsewhere. A number of countries have been intrigued by the x-road solution, and it has already been implemented in Azerbaijan.



Estonian President Toomas Hendrik Ilves – who as an ambassador of Estonia to the United States was one of the authors of the original Tiger Leap idea – has been asked to head the EU Steering Board of the European Cloud Partnership, which has a mandate to promote cross-border digital public services. We think that people all over Europe and throughout the world should be able to enjoy the personalised and hassle-free electronic services that we have in Estonia!

You can read more about e-Estonia at [www.e-estonia.com](http://www.e-estonia.com)

All this has given Estonia a positive reputation regarding e-matters and has made e-Estonia something of a champion of government modernisation. Ten years ago Estonia's lessons on building e-government were the reason the UNDP and Soros Open Society Network financed the creation of the e-Governance Academy. After the first cyber war in 2007, NATO opened a cyber security research centre in Tallinn, and just recently the EU located its IT agency's headquarters in Tallinn.





Text and photos: **Kristiina Pennar**  
/ Public Relations (NATO CCD COE)

# Treading In The Cyber world

It has become somewhat fashionable to talk about cyber defence and cyber security these days. This is not a surprise if you consider the impact the Internet has on our everyday lives and how a loss of connectivity may seem like a violation of basic human rights for some. If you look back at the recent past, a lot has happened in regard to the Internet and its security, which is clearly connected with the fact that cyber defence is gaining more and more importance politically and militarily.

Experts agree that, although future wars will not be fought in cyberspace, cyber will be one of the important elements in future conflicts. Surprising as it may seem, this is one of the areas where every person with a computer or a smart-phone may have a role to play, because our everyday skills (or the lack of them) can be used for both good and bad.

Knowledge of what is acceptable and what is not, according to social norms, is essential in everyday life. Most of us know that we should not leave our homes unlocked, we should keep an eye on our personal belongings, and we should not wander into the "bad part" of town. Oddly enough, this common sense tends to fail us in cyber space. Consider the following examples.

You have just installed an interesting new application on your computer but the firewall keeps blocking its access to the Internet. Would you try to find a solution which would let you have both the firewall up and the application running or would you abandon one of the two? Many would choose to disable the firewall, which is more or less equal to leaving your front door unlocked in the real world.

Or how about browsing randomly on the Internet, which is roughly equivalent to walking aimlessly in a town? Most of us would at least be

hesitant about walking into a shady shop which promised to give away music for free, yet many of us have no problem clicking on a link which promises free downloads of the latest music hits. Most people are unaware of the risk of doing this. Or worse, it is known, but simply ignored.

One could say that what happens to one's computer or smart-phone is not a problem for anyone but that particular person. Unfortunately this is not true. For one thing, the infected computer can serve as a base where the virus spreads to other computers or it can become part of a botnet which can be used to attack a vital service. A common way to damage someone's reputation on the web is to take down their web page or web-based service through a denial-of-service (DoS) attack. One of the ways to conduct such an attack is to use a botnet which consists of a number of infected computers following the botnet owner's commands. A comparison with a zombie army is applicable here. Whilst an inaccessible web page is not a vital service, it is not the only thing that can be done with a botnet. And it is not the only threat that can arise from less skilled users.

I think we can agree that it is an absolute necessity that people be educated from early ages on about how to behave in cyberspace. Many nations are already adding basic computer security training to their elementary school curricula, which is a promising sign since kids are using computers at a quite young age. Estonia has taken one step further and is currently working on a more in-depth project which will introduce elementary school kids to the basics of programming. Although this initiative by the Tiger Leap Foundation is designed to create interest in what is inside a computer and enhance technical computer skills, it will also help turn kids into more technologically educated users.



## NATO Cooperative Cyber Defence Centre of Excellence

The NATO Cooperative Cyber Defence Centre of Excellence (NATO CCD COE) is a NATO-accredited multinational organisation located in Tallinn, Estonia. Established in 2008, it provides education, consultation, experience, and research and development in the field of cyber security to NATO allies and partners.

As of December 2012, eleven nations (Estonia, Germany, Hungary, Italy, Latvia, Lithuania, Poland, Slovakia, Spain, The Netherlands and the USA) are participating in the work of NATO CCD COE; Turkey and France are expected to join in 2013. The budget and personnel of the organisation depend on contributions from these nations.

More information about NATO CCD COE can be found at [www.ccdcoe.org](http://www.ccdcoe.org)



**CCDCOE**

NATO Cooperative Cyber Defence  
Centre of Excellence Tallinn, Estonia

There is another side of the story, which is that there are plenty of highly skilled users in the world who are contributing heavily to national cyber defence. It is no secret that good IT experts are valued and it is often difficult for governments to hire experts due to high demand and the high salaries offered by the private sector. This means that governments must find other ways to cooperate with experts and be willing to offer them something in return.

One such effort can be seen in Estonia, where a volunteer national defence organisation called the Defence League has established a unit dedicated to cyber defence. The Defence League is a part of the military chain of command and its cyber unit, often referred to as Cyber Defence League (CDL), consists of specialists and experts who are patriotic and wish to contribute to their country's defence. They are mostly civilians who work either in the private sector or for the government and who contribute to the activities of the Cyber Defence League in their free time.

The main goals of the CDL are to enhance cooperation between IT specialists, share the best practices, educate its members and offer plenty of opportunities to network with people who share similar ideas. In short, they offer knowledge, interesting training events, contacts and a way for the citizen to contribute to the security of the country.

If you are wondering what more such an organisation can offer which cannot be included in the motivation package of a business organisation, one of the answers is Cyber Defence Exercises. CDL is one of the main partners of the NATO Cooperative Cyber Defence Centre of

Excellence (NATO CCD COE), a NATO-accredited think tank located in Tallinn. In 2012 CDL supported an international cyber defence exercise organised by NATO CCD COE by contributing heavily in the planning and execution of the exercise. This was an experience many saw as unique and highly valuable.

The cooperation between the two organisations is ongoing and the next exercise will take place in spring 2013. If you are interested in an overview of the 2012 exercise, please watch the short summary video at [www.vimeo.com/ccdcoe/cdx2012](http://www.vimeo.com/ccdcoe/cdx2012).

Although a paramilitary organisation such as CDL may not be a model for all nations, it does serve as an interesting example of how a state can have a mutually beneficial relationship with cyber security experts in the civilian sector. The United Kingdom has recently announced a plan to create a Cyber Reserve Force, which would allow the armed forces to draw on the wider talent and skills of the nation in the cyber field. We do not know yet how similar it will be to the CDL, but this shows that the idea is spreading.

In conclusion, we still have a lot to do when it comes to cyber defence, but there are two key ideas to consider. Firstly, there are the skills and knowledge of average everyday users and what can be done to improve them. Secondly, there is the degree of cooperation with people within the nation or with other nations. International cooperation is critical because cyber space has no territorial borders and having good partners is the best way to keep networks safe.



## Interview with Mike Gault - CEO of Guardtime

# Be On Guard - Guardtime Is Coming...

Text: **Toivo Tänavsuu**  
Photos: **Atko Januson**

In 1988, when the digital world was still in the distant future, two young students of cybernetics - Märt Saarepera and Ahto Buldas - met at the Tallinn University of Technology. Some years later, Saarepera travelled to Tokyo as an exchange student and dived into the world of applied information security and cryptography, publishing in various scientific journals. At the same time, Buldas stayed in Tallinn, working on digital signatures, the latest rage all around the world.

At the Tokyo Institute of Technology, Saarepera met two people who later became the key figures behind Guardtime. First he struck up a friendship with his course-mate Mike Gault,

who was studying quantum transistors. He then found common ground with the well-known Japanese venture capitalist, technology guru, DJ and writer Joichi Ito. Ito, the founder of the first ever Japanese website, invited Saarepera to work in his business incubator, Neoteny Labs.

In the second half of the 1990s, Saarepera and Buldas made big plans. They discussed the nitty-gritty of the global information security system. They looked for development funds. They attracted the interest of the Estonians who had founded Skype and, together with some partners, Skype invested over 15 million Estonian kroons (about 560,000 euros) in the enterprise.

In autumn 2007, Ito visited Tallinn in order to formalise his personal investment in Guardtime. He visited the Skype team led by Toivo Annus, and in his subsequent blog post he had only good things to say about Estonians and the free wifi network of Tallinn. The quality of the latter supposedly surpassed the wifi of Frankfurt Airport but not that of Ito's own Tokyo office. Guardtime received a new impetus. Ito became an important person in setting the direction of the company. On the magic date of 07.07.07 the clock of the servers was started and the history of Guardtime began. Now it was possible to check and issue signatures.





a lie detector; afterwards you can prove the data was created by a particular entity, when it was created and that it hasn't been changed. The signature can be verified independently, without human involvement, as it is based on mathematics, which is the core innovation. So verification doesn't rely on trusting people. We operate an infrastructure and, in every country we operate, we work with local partners to allow them to distribute signatures in their jurisdiction. Typically those partners are telcos, such as China Telecom and, in Estonia, Levira. They are the distributors of the signatures.

In 2010, Guardtime received a much-awaited financial infusion. A group of investors invested eight million dollars in the company. Besides the founders, Joichi Ito and the Skype guys, the owners of Guardtime also include Li-Ka-shing's Horizon Capital, the national investment company of Singapore, Infocomm Investments, and FitOne Capital, which is owned by the Japanese venture capitalist Yukihiro Kayama.

### **Let's begin with the cooperation between Guardtime and China. What sort of milestone is this for the whole company?**

It is a very important milestone, but let me put it in context. Two years ago we received money from the venture capital fund of Mr Li Ka-Shing, a Hong Kong financier. One of his companies operates Skype in China, which is why they became aware of Guardtime and our technology. They invested in our company and made introductions for us in China. We are involved in several projects in China. The biggest one is still to be announced, but it is with the Chinese government. We've been building a solution for them for the last two years.

### **Are you working directly with the Chinese government?**

Correct. Our company recently received an award from the government of China in the amount of 350,000 dollars, or two million Chinese RMB. That came with a five-year tax break and free office space. We are the only foreign company to ever have received such an award, which puts us in a unique position in China, with both local investors and government support. Last week we also announced our partnership with China Telecom, which will be a distributor of our technology in China.

### **What has been your biggest challenge in China?**

Technology standards are completely different there. People do business by text messaging, which is very different to how we do business in the West. E-mail is not as popular as texting. That's obviously quite a different approach to business. They have this concept of *guanxi*, which is about long term personal relationships, and those are more important for business than say contracts, as in the US. Guardtime's technology helps to remove the need for trust by providing an independent record of everything that has happened on electronic networks. For example, we are building a solution for SMS so you can have proof that you sent an SMS by having its authentic content.

### **The fact that you have established your company in the Chinese market - what does that mean financially, in the long term?**

Firstly, we hope to list the company within the next few years in China. In terms of revenue, a single project or a single customer can mean millions of dollars a year and we have customers in the Philippines, Japan and Europe who are using our service. The business model is that those partners will generate the revenue and customers, and they will give us a percentage of their revenue. If you consider how much electronic data there is and how much people care about it, you realise that the potential size of our business is huge.

### **Do you have different projects in the pipeline simultaneously for different customers?**

That's right. A few years ago everybody laughed at us. Who are those crazy guys and what are they trying to do? That is always the case when you bring a new technology to the market. At first people ignore you because you are too small and then they ridicule you because they see you as a threat. That's the cycle we are going through. Now, for example, we have about 17-18 projects ongoing with the government of the Philippines. The Philippines have electronic elections, slightly different to the elections in Estonia. Guardtime is involved in putting a tag on every single vote so that afterwards everybody can verify the integrity of the election.

**The digitalised world screams for technologies that will help to prove the validity of any digital data. One such infrastructure solution is provided by Guardtime, a company founded in Estonia. What is the technology Guardtime provides?**

**Mike Gault:** Conceptually, Guardtime's technology is very simple to understand. Take some data, such as an e-mail or a document or a video — anything electronic. Guardtime generates an electronic tag or stamp for the data called a signature. The signature acts like

### Can you give some more interesting examples?

Another example is the digitisation of physical paper: we call it dematerialisation. In the Philippines, the central land registry authority has 25 million land titles, which are currently stored in paper form. They want to digitise it all. If you convert from paper to electronic, it is very easy to change electronic data. When you scan paper, it is a pdf, but anyone can change a pdf. You just change it, copy it or produce a new one: there is no way to prove what's happened. So Guardtime goes in with a stamp on every land title to verify later that it is indeed an authentic land title.

### Let's talk about the years when you didn't really have the business... you were trying to validate your products.

### How long did it take, how much money was spent and was there ever a time when you hesitated seriously?

I never personally had any doubts. When you have a vision for how the world can be a better place, then as long as you believe in that vision, no matter how many people tell you you're an idiot (and it was everyone), your conviction can remain strong. Take, for example, VMWare. They have 350,000 customers, a 30 billion dollar company that invented the modern version of virtualisation. They started in 1998 and everybody back then said "who wants to virtualise a server?" It was the same way with Guardtime: people said "who wants to sign data?" Almost all big innovations are ridiculed initially, then something gets triggered and all of a sudden it is completely commonplace and everybody accepts it.

### During these difficult years how many changes in directions have there been?

We are running out of mistakes to make so we are having to make the same mistakes twice. One of the biggest mistakes was to believe if we built the technology it would sell itself. Fortunately, in the last few years more of a science has developed around bringing a new technology to the market, so you can basically study those techniques and then apply them to your own situation.

### Has luck played a significant role?

You want to be exposed to as much randomness as possible. If luck is just a random event with a positive outcome, then the more exposure you have to random events, the more chances you have of being lucky. That means getting out there and meeting as many people as you can. So, two years ago I gave up my apartment and I've been on the road since then.

### You're not a family guy?

Not yet. Right now I have no home and everything I own fits into one suitcase. It's not a lifestyle for everyone, but with no ties you have complete freedom – and nothing to lose.

### What is the main motivator for you personally to travel around living out of your suitcase? What's in it for you?

The exciting thing about Guardtime and the reason I think that people stay in the company is because they believe in a vision of the world where electronic data is more reliable than physical data. So it is the vision that drives people. For me personally, it is succeeding in this incredibly difficult challenge and getting the recognition for that as an entrepreneur.

### How do you evaluate Estonia as an environment for incubating companies with such sophisticated technology?

Estonia has the potential to be the innovation hub of Europe. It has brilliant engineers and inventors who are always coming up with new ideas. If they can continue and build an ecosystem of inventors, entrepreneurs, investors and innovators in government and business, it would be tremendous for the country. I've been fortunate enough to experience how innovation is done all around the world – from the Silicon Valley to China to the Philippines, Singapore, India, the Middle East and Europe – and the one thing that I have noticed is that innovation is done by individuals, not by organisations and certainly not by committees. The US is the strongest precisely because it is the culture of the individual. Giving freedom to individuals in the public and private sectors to experiment and fail is by far the best recipe for long-term success. The more the bureaucracy tries to lead or legislate, the less likely it is to come up with something original.

### You are now working with the Estonian government?

Yes we are. Estonia is respected as one of the most advanced e-government societies. We are working with the government registries that are currently deploying Guardtime. It is an incredible case study for us to take to governments around the world. So, if you can get a case-study from the e-government in Estonia, you can take it anywhere. If you present your company as an Estonian company that builds e-government solutions it gets instant credibility overseas, ironically more credibility than in Estonia itself.

### But is the development still here?

We have a development centre now in the Philippines because we couldn't fill the positions in Estonia. It is very difficult to find talented developers in Estonia for obvious reasons: Skype, Microsoft etc.

### Still, are you planning to maintain the status quo in the sense that the headquarters will stay here?

Our corporate headquarters is outside Estonia but the core research and development is all done here. We have invested about two million euros a year in the team in Estonia. We will do our best to hire more people in Estonia.

### What sort of challenges are you facing in the future?

Guardtime started off as an international organisation. Originally we had markets in Japan and the engineering was in Estonia. Now we have offices in Manila, Singapore, Beijing, Tokyo and California. All around the world, communication is always a challenge. But we have an education session for people who join the company on the Estonian "long silence". When they have a conference call with Estonians and the Estonians don't answer, it is not because they're not paying attention but because they are thinking.

### Do you have a specific message for the government of Estonia, and the innovators of Estonia?

Estonia has historically led in technology innovation. That's because in 1991, when you started the country, you had no legacy systems, so you're bound to be pretty innovative.



Ahto Buldas and Mike Gault in the Tallinn office of Guardtime in winter 2012

The question is how to keep up that innovation, because twenty years later Estonia has its own legacy systems and vested interests. How do you keep innovating? Otherwise, you will slowly see Estonia slip down the ranks of e-government. One way to stay ahead is to create a culture of openness and allow people to take risks and fail freely. If everything gets decided by a committee in a closed room, it is very hard to innovate. So, allow start-ups to try different ideas and allow individuals in the government and private sector to try out those ideas and see if they work. My advice would be to give people the freedom to experiment and see what works.

**Recently, President Ilves was invited to chair the Steering Board of the new European Cloud Partnership, which aims to develop cross-border digital public services in the public and private sectors. What does cloud computing mean for Estonia?**

Cloud computing is the biggest paradigm shift in computing since the PC. Historically, people have stored their data in-house and run applications on that data using their own computing resources. Now they are starting to store

their data in the cloud and run applications on it there. The challenges, of course, of doing that relate to data security: how do you know you can access the data (Availability), how do you know the data has not been modified (Integrity) and how do you know that the data has not been accessed (Confidentiality)? Estonia has a great track record in data security and it is there also that Estonian inventors and entrepreneurs can thrive, helping solidify Estonia's reputation as a technology hub.

**I wonder if a shift in economic power globally will influence Guardtime.**

I am really excited about all these markets. I am excited about Europe, as this technology was born in Europe. The EU is now starting to seriously think about cloud computing. Estonia is a leader in e-government, so there is a new technology – cloud computing – and Guardtime fits perfectly into that. In Asia – in emerging economies – they don't have the legacy systems that the US has, so the competition is very different. There are fewer vested interests. In the US, it is about changing the status quo. So each market represents very different challenges for us, but the end result is the same.

**A question about the intellectual property of the company – how many patents have you registered?**

We have an incredible IP portfolio: our IP attorney did all the early patent work for VMWare and successfully defended them from Microsoft when they sued the company. We are creating a culture in which when engineers come up with a new idea, they automatically start to think about patenting.

**Do you have developers as shareholders?**

Yes, not just developers, but everyone in the company. We believe that everyone in the company should have a stake in the company's success

**How much do you pay people on average, monthly salaries of senior developers for example.**

I used to work for Credit Suisse Financial Products, the derivatives arm of Credit Suisse, and at one point they had the highest paid workforce in the world; it would be nice to reach that level.

Ivar Siimar from the investment group WNB was elected the Head of EstBAN, Estonian Association of Business Angels, in November 2012.

# Estonian Angel Investors Shake Up The Market

Text: **Holger Roonemaa**

At the end of November, twenty-five Estonian angel investors established an umbrella organisation called EstBAN, Estonian Association of Business Angels. Ivar Siimar, Head of the Association, from the investment group WNB, and Peeter Klanberg, a member of the Board, talk about how the angels aim to “fertilise” the market of seed financing to boost the number of investments made in Estonia in the next few years.

## **Why is there a need for an association of business angels like EstBAN?**

We saw the first thought-out activity in this field only five years ago, when the Development Fund was established. Of course, prior to that we had Allan Martinson and some other people who invested in start-ups, but the Development Fund laid the foundations for coordinated activity in this field. Start-ups are high-risk investment opportunities and often people who possess a certain know-how and capital don't know how to make, or are afraid of the risk of making, an investment on their own. If you put out 100,000 or 200,000 euros on your own, you run a very high risk of losing it. It is much easier and more sensible to team up with someone who is supportive or strong in some other field than you. This creates a certain synergy, and investing joint money is a more reasonable solution. This is called syndication. But in order to make a joint investment you need to be familiar with your business partner(s).

## **How many business angels are there in Estonia?**

Today we have twenty-five founding members, among them the well-known banker Indrek Neivelt and the businessmen Priit Põldoja, Raivo

Vare, and the brothers Rolf and Rikard Relander. Potentially, we have 115 members. But they have not defined themselves as business angels and often they would prefer to make their first investment together with someone who already has this experience. Therefore, we cannot get around the importance of the Development Fund, as it has helped many companies get started. There are over twenty companies in the portfolio of the Development Fund, and they never make investments without also bringing in private investors. In time, people learn to know each other, make one or two investments together and, hopefully, get the opportunity to make further investments.

## **Do we really have 115 different business angels in Estonia?**

We have to get rid of some myths: one does not need to be a billionaire or zillionaire to be a business angel. The last investment made by our Finnish “relative” FiBAN was 75,000 euros and seven people participated in that. If an investment can be below 10,000 euros, we can bring together two hundred potential angels in this building alone. In theory, it would be great if a person could invest 100,000 euros, just a little piece of his or her fortune, but not everything. This could be invested in ten different projects, and he would understand that eight of them might not fly but would somehow manage to drag along, or might even go bankrupt. But two would be successful and in time would bring in profits. Indeed, there are some exceptional examples where money invested is earned back in two months, but normally the investments stretch over six, seven or even ten years before profits are made. That's the rule of thumb.

## Who are those angels? What are their main characteristics?

Mainly they are successful businessmen. The Estonian economy is now 20 years old, and those angels have been successful from the early days and mostly their companies no longer need looking after on a daily basis; rather, they bring in annual profits. Although the companies no longer need their owners to be around all the time, those are very active people. So, on one hand, they have some capital and, on the other hand, they need an outlet. This is how it normally starts. But, with the creation of EstBAN, we are not reinventing the wheel. Estonia is one of the last countries in Europe to establish such an organisation, although Latvia and Lithuania are even further behind.

## How large is the market for angel investments in Estonia?

It is difficult to say. In the last few years, there have been about 15 early phase investments in Estonia per year. This is a small number. If we consider the average size of investments to be 100,000 euros, that makes 1,500,000 euros a year. To place that in context, FiBAN members in Finland have made about 85 investments this year, injecting about seven million euros into start-ups. Note that I am talking only about seed financing and, for example, second round investments are not counted here. We have established a very good starting position and our aim is to multiply the number of investments made in the next couple of years.

## What is the potential size of the Estonian market?

According to one myth, the start-up people say that Estonia has no money, and those who have money say that Estonia has no projects. I believe we have both and it is our mission to bring smart money and clever ideas together.

## How many good ideas are around then?

It is one of our goals to gather such statistics, as currently there is no overview. I am aware of the fact that ASI [Ambient Sound Investments, the Estonian investment company which created Skype – ed.] looks through 350-500 projects every year. If half of those come from Estonia, the situation is very good. At WNB [the investment company where Siimar is a shareholder – ed.] we work through about 150 projects. There were about 250 projects submitted to the competition “Ajujaht” [Brainhunt – ed.] and the Development Fund continuously screens about 30 projects.

## What will run out first: ideas or money?

I don't think we need to worry about that. Nothing will run out! In the last few years, investments have amounted to about a million euros; even if we triple that, it does not mean that money will run out.

## How often does it happen that investors fight each other or complain that one has snatched an investment away from another?

Well it is usually people who are working on their first or second project who come to loggerheads. Those who have already done three get on

really well with each other. Instead of fighting, people tend to be more supportive here in Estonia and look for encouragement from others. Whenever someone has a project, others come around to see how to get in on the second round of investments. I think the atmosphere is really optimistic and friendly. We have worked together with the start-up community, starting with Tehnopol and Garage48. Our future plans include joint training. In terms of world trends, angels also want to understand them, just like start-up entrepreneurs do.

## What advice would you give to a young start-up group about how to get a foot in the door?

It is not that difficult. The main concern that investors have about start-ups is to find the criteria which can be used to say that this project has good potential and this one does not. The idea is important, but the team is even more so. Will they be able to grow and expand beyond Estonia's borders? Certainly we look for innovation and export. Of course, there is a need for good companies who remain in the domestic market, but they are not in our focus.

## What are the first three things you look for in a new start-up?

Firstly, simply that they understand what they are doing. Nobody wants to invest their money in just an idea. Idea money comes from elsewhere. Secondly, the team needs to function well together and have the ability to develop.

Thirdly, I attended a seminar in Finland last week where angels emphasised that an entrepreneur needs to have the skill to listen. Experienced angels try to find out whether an entrepreneur can listen to and cooperate with others. They need to have energy, courage and self-assurance, but when you are talking and nobody listens, it means five lost years for an angel investor.

I would like to draw attention to the fact that whenever people talk about start-ups in Estonia, they have in mind young entrepreneurs – schoolboys. The best start-up entrepreneurs, however, and those most likely to score a win, are people over 30. They already have some experience. It is the best age!

## In Estonia it's probably important that most start-up entrepreneurs have the experience of working at Skype?

The key to Estonia's success is that we have Skype, ABB, SEB, Swedbank and some other companies which have trained a huge number of smart people. If we look at the Estonian teams who are successful in the world today, in 80% of the cases those companies are involved. People with no experience whatsoever, who just have youthful enthusiasm, often end up in a dead-end.

## If a businessman reading this interview wants to find out more about Estonian business angels and start-ups, what is the best way to go about it?

We welcome everyone! When someone gets off a plane in Tallinn and has heard something about the Estonian Mafia and knows that we are active with start-ups here, they can come and find us. Through us they can access the deal-flow. It is one of our first priorities to organise and manage the deal-flow.



# Seeds Of Success

Estonia has been called a hotbed of start-ups. "Life in Estonia" presents some of the dozens of start-up companies active in Estonia. Our selection includes start-ups which have already found investors and proved themselves in the market, as well as those which have reached the prototype stage and are waiting for a breakthrough.

Text: Holger Roonemaa

Whilst most Estonian start-up companies are aiming for Silicon Valley on the west coast of the United States, the founders of **GrabCAD**, Hardi Meybaum and Indrek Narusk, have chosen to make their mark on the east coast of the US, in Boston. A wise choice, as today GrabCAD is the crème de la crème of Estonian start-ups. GrabCAD's objective is to provide an Internet platform for engineers, designers, subcontractors and end producers. It is estimated that engineers spend about a third of their working time designing products or details which someone somewhere has already made. Making such designs available to others provides engineers with the opportunity to work on creating more unique products and details. Over 350,000 engineers have joined GrabCAD to date. The platform provides over 640,000 CAD models and more than

6.5 million downloads have been made from GrabCAD. It is also undeniably the most popular Estonian start-up among investors. GrabCAD has gone through two accelerators in the USA (Seedcamp and Techstars), and received funding from Ahti Heinla (one of the original Skype developers) and the Estonian Development Fund. To top it all, the company received 1.1 million US dollars in July 2011, 4 million dollars in January 2012 and 8.15 million dollars in October 2012 from the legendary investment company Charles River Ventures (CRV was one of the first investors in Twitter). Therefore, the total sum of investments in the company is over 14 million dollars.

What next? Receiving the financial injection from CRV means that GrabCAD is tripling its programming team in Estonia.



**Pipedrive** is currently one of the hottest start-ups from Estonia. The company was founded by the team of the training company Vain & Partners, which includes Rainer Sass, the man in charge of the support structure of start-ups in Estonia, Garage48. Pipedrive is CRM (customer relations management) software that beats its competitors due to its speed, simplicity and comfort. "In contrast to the usual CRM solutions, Pipedrive focuses on the sales pipe and helps the whole sales team focus precisely on those transactions which they have to work on. In addition, sales managers have a good overview of the transactions in the 'pipeline'. Pipedrive shows you where the keys to your flat are, and where money is located," is how the company introduces itself.

Pipedrive started off two years ago with the support of Enterprise Estonia's new business start and growth programme, but as early as the autumn of 2011 they attracted the first noteworthy investment from venture capitalists, a total of 300,000 US dollars. In July 2012, another 700,000 dollars were invested in the company. Behind the investment were Satori Capital, TMT Investments and the angel investors Andy McLoughlin and Christopher Muenchhoff. Both men also participated in the first round of fund-seeking by Pipedrive. Why is Pipedrive so popular? Apparently the cash-flow of the company is already in the "green" and this is one of the things which always attracts attention from investors. Pipedrive's advantages are a robust business model and more than 1,000 paying customers all over the world.

One of the most unexpected, and therefore exciting, new start-ups, which has already attracted some investments, is **Shaka**. There are three Estonian men behind Shaka - Raigo Raamat, Mihkel Güsson and Jens Kasemets - and they plan to make their mark in the world of surfers and wind addicts.

Shaka's concept was born when Raigo, as a beginner surfer, was looking for good wind conditions and found out that there was no

suitable, comfortable, accessible and trustworthy source of information out there. If you can't find it, make it yourself. This is how Shaka's wind-measuring device, known as an anemometer, was born. It is a separate little appliance which can be linked to the user's smart phone through the "headphone hole". The information collected in real time about the direction and strength of wind reaches friends in just a moment.

The Shaka team got their first international experience this year in China, in the Haxlr8r accelerator in Shenzhen, with a 20,000 dollar injection. In October, Shaka received an additional injection of funds - 11,640 euros - from Prototron, a start-up financier founded by Swedbank, the Tallinn University of Technology and Tehnopol. The objective of the funds is to develop the second prototype of the device, which would also measure air pressure and humidity, in addition to wind speed and direction.

"We plan to start sales in the next couple of months," says Raigo Raamat. According to initial information, the device will cost less than 60 USD for end consumers. Currently, Shaka is not looking for new investors and plans to keep that on hold until the company can demonstrate the first market results.

**Utility Camp** is a start-up, founded by Tanel Ainla and Steve Perkson, which combines electronics and software in order to monitor the consumption of communal services by households. "We want to provide people with a better understanding of how much electricity, gas or water they use," says Ainla. Whereas communal service providers only give out such information on a monthly basis, Utility Camp will enable you to receive information about your consumption in real time.

Utility Camp is currently funded by Toivo Anus and the founders themselves. The first prototype of the device for measuring electricity consumption is ready, and work is under way to make the product affordable for consumers. "It is a wireless little 'brick', which has to be attached with double-sided tape to the blinking light in your electricity cupboard. The second analogous brick is placed next to the router. Once both pieces are fitted, they start to interact with each other and so the information reaches Utility Camp in real time," explains Ainla.

He says their goal is not to create another smart-home start-up, but something much simpler. "We want to attract people's attention to one specific problem at a time, and lower the entrance barrier to this area for consumers." As mentioned, the prototype of the appliance for measuring electricity consumption in real time already exists, and within the next six months Utility Camp is set to bring it to the market.

**Browserbite**, which enables the user to test Internet pages in different browsers, separated from its mother company Knowit only last autumn. Although Kaspar Loog, one of the owners and the manager of the company, has only been able to fully dedicate himself to Browserbite since September, the company already has 5,000 customers and the first ones have started to pay for the service.

"People usually think that each web page works in every browser in the same way, but the reality is that standards vary. This means that developers are always overworked and customers are always upset when their web pages in some browsers look ugly or include mistakes," explains Loog. This is where Browserbite comes to assist developers. To put it very simply, it analyses a web page when it's being created and within 20 seconds shows where in the browser a mistake will occur. "In principle, it is a kind of 'find the five differences' game," says Loog. He adds that this task would take a layman at least fifteen minutes and even then only a third of the mistakes would be found, whereas a professional would identify two-thirds of the mistakes in the same time. "Browserbite does the job in just a few seconds thanks to the fact that its analysis motor uses special algorithms." Loog confirms that it is precisely this automated and effective analysis component which gives Browserbite an advantage over competitors.

As mentioned, Browserbite already has over 5,000 users. The free-of-charge version compares 60% of browsers and the pay version gives a result on 90% of browsers in use. In the new year, the aim of the company, founded by Loog, Tõnis Saar (who works on R&D) and Marti Kaljuve, is to widen its activity on mobile platforms and to enlarge its customer base. So far Browserbite has funded itself. Loog says that they have considered finding investors but that would mean hiring another full-time job employee. "We are open to ideas on attracting funding, but we are looking for 'smart money' and we will try to raise funds in a later phase."



# Garage48

## The way To An Accelerator Through The Hackathon And Extreme Team Building

**Twenty years after regaining independence, Estonia has proved itself to be a good business environment. It's difficult to estimate how many start-ups are currently in operation in Estonia due to the fairly rapid expansion in their number in the last few years. According to Enterprise Estonia, 10 to 20 new tech start-up companies are set up every year. There are many start-up conferences, seminars and other related events being held regularly, with the start-up community mostly based in the capital city of Tallinn. Among the focal points of the community is the Garage48 Hub, a community-led co-working space for over 20 companies.**

Garage48 is a 48-hour event to build technological products in just two days and nights. The event has been organised by the Garage48 Foundation, launched by six start-up entrepreneurs who met thanks to the Estonian Startup Leaders Club. The idea was to give hands-on experience in how it feels to build a start-up with a team.

"We wanted to push people to move fast and take the first steps with their business ideas. So we organised the first Garage48 event, where 100 people came together to turn

their ideas into working web and mobile prototypes in just one weekend, 48 hours", says Martin Villig, the co-founder of Garage48.

Garage 48's main goal is to promote entrepreneurship and inspire more people to try to create their own start-ups. The aim is to lighten the burden of turning an idea into a working prototype, and bring it to the market for customer feedback. "Our focus is mostly on web and mobile projects, because our founders have the most experience in these fields. Our events are open to everyone, regardless

of background or experience. So anyone who has an idea is welcome to sign up for our next events", says Elise Sass, the founder of Startup Wise Guys. "But in order to actually build a prototype, we also need people with specific skills, such as designers, programmers, marketers and project managers. The average age of our participants is around 30, but we have had participants as young as 14 and as old as 58. Enthusiasm matters more than age."





The Garage48 events wouldn't happen without local initiators: the wish for a practical hackathon has to come from the grass-roots level. One of the best examples of local people is Richard from Uganda (in the upper right photo), who has continued to work on opening a local incubator to encourage building start-ups and giving them a place to continue working with their teams.

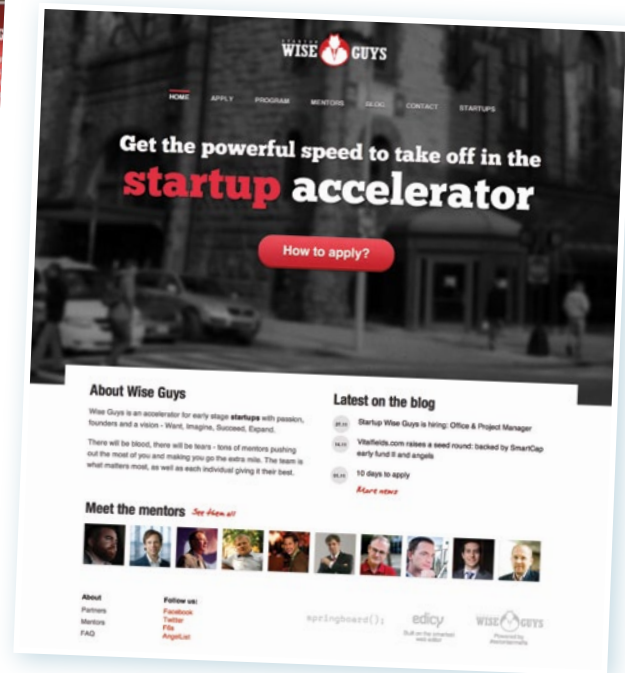
From 2010 to 2012, Garage48 was organised twenty times in ten different countries on two continents: in Estonia, Latvia, Finland, Ghana, Nigeria, Kenya, Uganda, the Republic of South Africa, Russia and Ukraine. All Garage48 events are held in English.

"Garage48 has never been held in western Europe, not because we weren't invited, but because we believe in emerging markets and making a difference", says Ragnar Sass, the founder of Garage48. "The tech skills in Uganda are good, but what they lack is real experience. It's amazing to see how much they learn during the 48-hour event: they really feel that, with a team of people, they can put their skills to use and build a working product", says Elise, Ragnar's sister, who organised the events in Uganda, Kenya and South Africa. "We have taken several mentors and experienced entrepreneurs to African events. In entrepreneurship, there is not 'one right answer' but many ways to succeed. And

this is what the mentors teach them, by giving a variety of feedback about their products and ideas. It's possible that, for many participants, it's the first time they have felt that to succeed they have to make the decisions themselves and analyse what others are saying in order to achieve their goals at the end of the day."

The Garage48 event seems like lots of work for the participants, which it no doubt is. Many of the participants are experienced entrepreneurs and developers. They come to the event to feel the passion and excitement, a striving that makes people believe in great new ideas and that they are making a difference. But Garage48 is also lots of fun. It's about meeting new people, forgetting the daily 9-to-5 job and diving into acceleration and the start-up world. Often the participants learn more during the weekend than they have learned in months.





## Startup Wise Guys

Startup Wise Guys was launched in February 2012, but the history goes back at least a couple of years. Jon Bradford, the founder of the Springboard and Ignite 100 accelerators in the UK, met with many applicants from Estonia and the rest of the Baltics. In 2010 he arrived in Estonia for the first time, and kept asking why there wasn't a local accelerator programme in Estonia. It was a little too early then, but all the pieces came together at the end of 2011, when a team was formed that agreed to launch the Startup Wise Guys accelerator.

Startup Wise Guys is an intensive three-month learning and practical programme for international start-ups. The accelerator provides two essential components at the same time: seed-investment and an extensive 13-week training and mentorship programme to grow businesses. The goal of the programme is to take the most promising start-ups and push them, through essential elements, to grow their businesses, and build products and traction quickly.

Startup Wise Guys is located in Estonia, but about three-fourth of the applicants come

from outside Estonia. The fame of Estonian start-ups has spread across borders.

### What is the procedure like?

Startup Wise Guys' programme is divided into three stages.

The first part of the programme is called **Shape**: refining and working with business plans with the help of mentors and workshops. The second stage is **Build**: teams continue to develop their products and grow traction. And the third stage is **Sell**: focusing on sales, marketing and preparation for Investor Days.

During the first three weeks, eight mentors meet with the start-ups every day for 20 minutes: "speed mentoring sessions". The meetings are short in order to get right to business and skip all the polite small talk. Start-ups introduce themselves in one to two minutes and continue from there with a broader discussion. Twenty minutes is enough for the start-up and the mentor to see if there is enough "chemistry" to continue the mentorship relationship throughout the programme. After the first three weeks, each team continues to work with five to seven mentors through weekly meetings, emails and phone calls.

The mentor weeks are the most overwhelming for the start-ups: they find out that there are many different opinions and lots of different advice. The managers of the programme say that this is the key: start-ups absorb lots of information for analysis and decide at the end of the day how they want to succeed with their businesses.

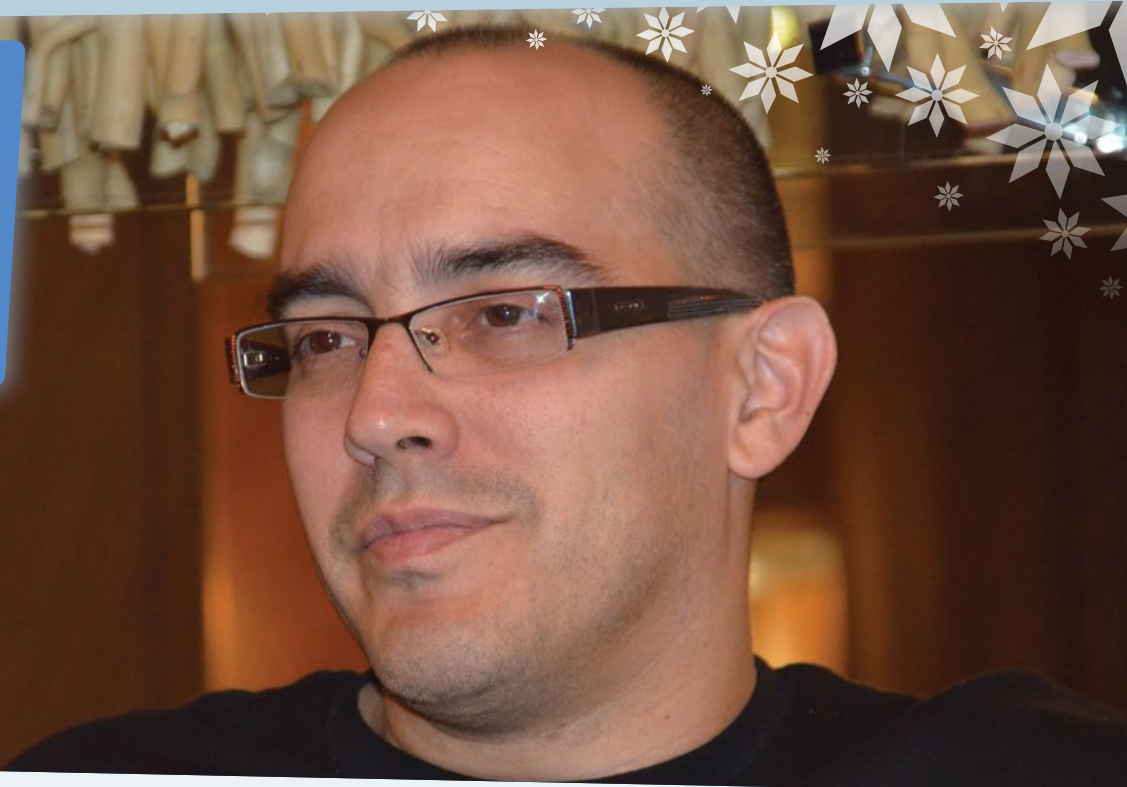
The accelerators work together with many partners, including service supporters from legal, accounting, sales, marketing and many other areas. Also, international corporations visit and send their mentors to meet and advise the start-ups.

The ultimate goal for every start-up participating in the accelerator is to get further funding, grow bigger and build a successful business. Therefore, three months are spent to ensure as positive an impact on **Investor Day** as possible. Startup Wise Guys have organised their Investor Days in London, as well as in Tallinn, in order to attract a broader network of people.

The Investor Day is organised by Startup Wise Guys, and many local and international vcs and angels are invited to listen to the start-ups' pitching and demoing their products.



Text: **Holger Roonemaa**  
Photo: Toivo Tänavsuu



# Business Angel Dave McClure: Estonia Is An "IT-Anomaly"!

This autumn a group of thirty venture capitalists, managers of global technology companies and just plain technology nerds, collectively known as "Geeks on a Plane", visited Estonia. Their mission: to find out what accounts for the number of new and remarkable start-ups originating in Estonia, which makes the country a bit of an anomaly. We caught up with the leader of "Geeks on a Plane", the legendary angel investor and boss of "500 Startups" – Dave McClure – in order to ask him a few questions.

## Why did "Geeks on a Plane" decide to pay a visit to Tallinn?

Actually, I don't know why. We have made three investments in Estonia [*Erply, Zerply and 300mg – ed.*] and we have some friends at Skype. I thought it quite attractive that such a small country had so much entrepreneurship going on. We just thought it would be interesting to see for ourselves.

## What is the impression of the Estonian IT landscape outside Estonia?

We were curious ourselves to answer the question of why so many cool companies had come from such a small country. We tried to understand what was happening here. It is an anomaly and therefore it is interesting to investigate personally.

## Do you really think Tallinn is an anomaly?

Well...at least I would say it is totally atypical. Perhaps Singapore, Chile or Israel have something in common with you, but those places have much larger populations than Estonia. I don't know what you do, but it seems to be working (laughs).

## How does Tallinn compare to the other cities you visited on your tour: Moscow, Zagreb and Berlin?

Moscow is huge and as a separate market it is very interesting and full of potential. Berlin is an international finance centre and located in a large country. So those two towns were obvious places to visit. The decision to visit Croatia was based on the fact that we had invested in that country and the President himself had invited us. Otherwise, we would probably have visited Poland, but it is difficult to turn down an invitation sent by a president of a country.

## Our president is also really interested in technology.

Yes I know and we almost had a chance to meet him, but he is away somewhere today.

## Is it true that you invented the hashtag Estonian Mafia?

(laughs out loud.) Yeah. I think it happened by accident at an event organised by Seedcamp two years ago. That was quite funny.



## GEEKS ON A PLANE

### It's both work and play when the geeks fly

Geeks on a Plane is a group of global technology aces who regularly organise quick, short visits to different regions of the world in order to learn about the local IT landscape, to make contacts and to just rest.

Having visited Asia and Latin and South America on different occasions, this year the flight set course for Eastern Europe, where Tallinn was the second stop after Moscow. The movement was created by McClure, and during the three years and eight trips the group has made, a couple of hundred people have participated in the flights.

"At first it was just my friends, but then people from different professions, from different corners of the world and various types of companies began to apply for the flights," explains McClure. He admits that all of them are geeks or at least like spending time with geeks. But who then is a geek, according to his definition? "It is probably someone who is a fan of technology or entrepreneurship and is a bit weird socially. However, in the last two years there have been fewer weirdos among us."

#### What happened?

I cannot remember the details. I guess we were joking that all companies which stand out seem to come from Estonia. They compared themselves with Germany, I think. It is quite strange to think that we have made three investments in Estonia but none in Russia.

#### Were you surprised that the Estonian Mafia "brand" was taken into use immediately?

Yes, it is quite funny that something like that grew out of an innocent joke. They probably thought it was a good marketing tip and really pushed it. It turned out quite well. Sometimes you just need one little idea and it grows its own feet.

#### Does that mean that Estonian start-ups have an easier time attracting your attention than some others?

Yes, you could say that. We already have relationships with some and our investors and mentors know this region quite well.

#### What kind of start-ups are you looking for?

I would say that we are looking for quite a wide choice of network and mobile application producers. Some of the main things are initiatives geared to making the lives of consumers more comfortable, also the family and educational sectors. Some other interesting fields are the food industry, design, infrastructure projects, and health and IT. We are looking for things where we see an easy and understandable model for creating turnover.

#### What does one need to do to attract your attention?

Most investment decisions come through our own network, where we already have company founders and mentors on portfolio. We have

hired 175-180 mentors. They help us to choose and advise companies. Our family is quite large and it is therefore easy to make decisions based on internal recommendations.

#### What is the average length of your investment?

Approximately three to seven years, but of course companies which do not work will disappear in one or two years from the market. Those which function well and grow faster than expected we can also exit quicker. We plan to make an exit in five years on average.

#### Do you agree that there is a bubble in the start-up world?

I do agree that the process [of creating start-ups -ed.] has become more normal. There are many people who want to become entrepreneurs, businessmen; even countries are entering the game. Sometimes it feels like this field has become too sexy.

#### What do you mean?

There are many people who do not have the right character to become entrepreneurs or establish start-ups.

#### What kind of character is that?

You need to be crazy! (laughs)

#### So your average guy is not really suited to being an entrepreneur?

Yes, I do believe that it is not the best idea. There are many investors who think that start-ups are cool and sexy and they are not in this business for the right reasons. There are many businessmen who are just in love with the idea of doing business. I think we prefer it when businessmen are more passionate about their customers or about solving their problems, not just about being in business. It is easy to put the status of an entrepreneur on a pedestal and boast about it, but most start-ups and businessmen are just pains in the arse. You have to work a lot with them; most of them do not work and they will not earn a lot of money. It's really not a very glamorous field.

#### Why are you in this business then?


Because I am crazy! I have spent twenty years in the Valley and have thought about how to become an entrepreneur myself and I have probably failed. My task is to help others with advice so that they do not need as long to discover what I have learned, or so that they can do much better. I want to press my twenty years of failures into one or two years of advice to others. That is probably helpful.

#### What then makes a successful businessman?

I think when you create jobs for at least 50-100 people, or the turnover of your company reaches at least 10 million dollars, or you make an exit worth at least 25 million dollars. Those are all valid criteria. Those are the mileposts: measurable wins for staff, customers or shareholders.

#### Is Silicon Valley still the place to go if you want to start out in business?

I believe so. There are lots of benefits in the Valley, but it is not an easy place to hire people and the competition is fierce. It is good to understand the region, especially because of its unique pace and the people who work there.



The Estonian IT programme  
Tiger Leap is probably known  
all around the world.  
Having been involved in the  
programme from the word go,  
**Linnar Viik**, today  
a lecturer at IT College,  
is the right person to explain  
the nuts and bolts of  
the programme.



# Tiger Leap – A Unique Estonian IT Programme

Text: Ille Grün-Ots  
Photos: Atko Januson

### What is Tiger Leap and when was it born?

The idea of Tiger Leap was born in the 1990s, just after Estonia regained independence. Back then there was a discussion in society about the kinds of skills and know-how young Estonians would need in the future and about the practical ways of attaining such skills.

It was clear from the beginning that one such essential skill all young people needed was computing and knowing how to use the Internet, as well as getting a quality education with the help of information technology. The question was raised of how to deal with this issue in a way which would be fast and efficient and applicable all over Estonia. It was immediately obvious that it could not be implemented through the educational network and leadership of the day. There was a need for a larger and broader initiative which would permeate the entire society. In the middle of the 1990s the call to establish Tiger Leap went out.

### Why the tiger? After all, there are other animals who take leaps.

“Tiger” is a journalistic metaphor. The idea that we had to make a great leap in the field of IT was expressed by our current President Toomas Hendrik Ilves, who back then was the Estonian ambassador to the United States. The journalist who interviewed him chose the wording of the tiger leap in the article. The strength of this journalistic metaphor is still evident: it has become fixed in people’s memory.

Next, an initiative group was formed which had the task of formalising the idea. The initiative was not managed by a ministry; rather, a separate foundation was established, with the government, individuals and various Estonian companies and organisations as co-founders.

The Tiger Leap Foundation was mainly funded by the government, but also many NGOs, companies and organisations contributed. The initial goal was to link all Estonian schools to the Internet by 2000 and to equip them with a sufficient number of computers. Most schools achieved this aim in 1998. Interestingly enough, the first schools to do so were not located in Tallinn. Rural areas were often especially active in getting involved in the programme.

### It is a great initiative, but can it work if the target group is not excited about it?

With all national initiatives, it is essential that local communities have enough enthusiasts and show support: that determines how seriously people respond. In the counties of Pärnu, Valga, Võru and Tartu, in the areas around Lake Peipsi and near the city of Haapsalu, and on the island of Hiiumaa, there were plenty of local enthusiasts who said “no problem, let’s get it done!” Thus many things, from installing cables, to putting up the connections to get the computing classrooms going, were created via crowd-sourcing.



But the practical work was just one part of the programme. We needed to train the teachers to effectively use computers in their classroom work, and that was time-consuming. Of course, it depended on individuals: some teachers were more enthusiastic than others. Some were quicker to learn than others. Another goal was to have free distribution of e-learning content. We are still working on that, as this task is continuously evolving over time, just as technology is always changing and being renewed. What I mean to say is that technological solutions arrived quicker than the solutions related to content.

After we had equipped all schools with computers, the discussion was raised of whether all students and teachers should have their own laptops to replace traditional learning materials, at least to some extent. Today, we have reached the conclusion that the best idea is to provide them with iPads. In addition, iPhones are starting to be used as learning tools and have been tested in some places. Hence, new technological solutions are being introduced continuously. In terms of educational administration, a very welcome initiative from the private sector has been e-schools, which link teachers, students and parents via the Internet. This online community provides information on everything and this application is used by practically all schools in Estonia. For example, it is the best place for parents to find out about the learning results and homework of their children. It must be said that this is quite a unique solution even by world standards.



What I personally like about Tiger Leap is that you didn't first worry about all the problems that computers and the Internet would introduce in schools, but you started the programme and as problems occurred dealt with them. It seems to be different with the e-health programme, where people first started to discuss the problems and then considered whether there was any point in doing something.

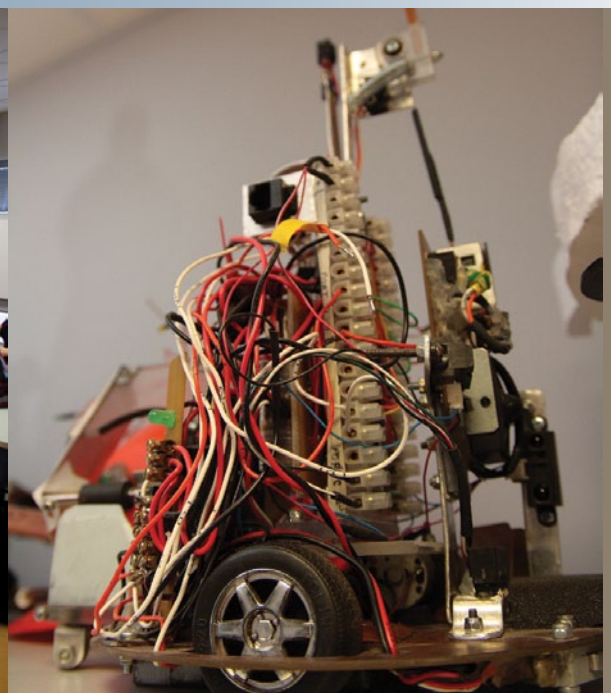
If we look at society more broadly, Tiger Leap gave us a new generation of high school graduates as early as 1998. They were accustomed to using computers and the Internet on a daily basis. As they went on to universities, they started to demand a different way of working from higher educational institutions. No longer were the materials provided by university tutors the only source of knowledge; students were able to find information on the Internet. That generation wanted to communicate with their tutors via e-mail, and they also wanted to get their materials electronically. That is how Tiger Leap started to live in universities. Today, the Tiger Leap generation has entered the employment market. I think that their values and attitude to IT has changed the entire society. We are now in the next Tiger Leap generation. They did not start learning to use computers and the Internet in high school; rather, they were more or less born with a computer mouse in one hand and a mobile phone in the other. And they are active citizens who are looking for their roles in society, who want to have a say in things. It is a very interesting and diverse generation, and very important to society! Many new ideas are generated in this way and it is imperative for a small country to have many different ways of thinking, different professions and attitudes.

**In March 2000 you founded the Estonian Information Technology Foundation (EITSA), and one of the first tasks of the organisation was to establish and manage the IT College, a private applied higher education institution. The founding members included the government of Estonia (represented by the Ministries of Education and Research), Tallinn University of Technology, Eesti Telekom and the Union of Estonian Information Technology and Telecommunications. The school curriculum includes the development of IT systems, administration of IT systems, analysis of information systems and technological communication. You have been involved in this from the start, including in the role of Rector.**

By the end of the 1990s, the Tiger Leap generation had graduated from high school and expressed interest in information technology. The IT and telecommunications sector was already developed by then and the demand for IT specialists was growing rapidly. The biggest demand was for applied higher education. It was probably a slightly crazy project, as in less than a year we went from expressing the idea to accepting the first students to the college. Now IT College has become an integral part of our higher education market and EITSA has become the structure that most influences the use of IT in higher education. We are currently in the process of merging the Tiger Leap Foundation with EITSA, and this will result in a large private structure bringing together universities, the government and employers. This structure will coordinate the use of information technology in the whole education system.



# Estonian IT College: The Axis Between High-Tech Know-How And Practical Needs





The Estonian IT College is a private non-profit higher educational institution established in 2000 and owned by the Estonian Information Technology Foundation (EITF). It is the leading IT institution of applied higher education in Estonia. What makes the IT College special is its academic staff, composed of professionals in the field: a third of all the lecturers come from IT firms and company or state IT departments.

The IT College offers different forms of study, including daytime and evening courses, and distance learning (e-studies). A three-year study programme of applied higher education, totalling 180 credit points in the European Credit Transfer System, leads to a specific vocational qualification equal to a bachelor's degree. The college's priority is to train IT field specialists, although graduates may choose to pursue their studies at the master's level at Estonian universities or abroad.

The college's mission is to offer the best applied IT education in the region, bringing together high-tech know-how and the practical needs of the information society, while being the axis of its development.

IT College offers three different curricula to choose from:

IT Systems Administration: future specialists receive in-depth knowledge and the capability of maintaining contemporary network systems

IT Systems Development: the curriculum provides a comprehensive education in the field of software development and IT systems

Information Systems Analysis: graduates thoroughly understand the processes of IT and business systems

## Internationalisation

One of the biggest challenges in future will be opening the IT College up to students from abroad. This will involve developing an English language curriculum, recruiting international students, bringing in visiting lecturers from abroad and expanding the facilities.

The IT College was awarded an ERASMUS University Charter in April 2004. Since then, the College has been actively involved in ERASMUS student and staff mobility programmes. Currently IT College has 22 partner universities in twelve different countries. The number of graduating and incoming students is increasing year by year. Foreign students are supported by ESN (Erasmus Student Network in Tallinn).

IT College participates in a range of Intensive Programmes (IPs) in the Erasmus Programme. An IP is a short-term project to develop a study programme which brings together higher education institutions of at least three European countries. IT College has participated, or is participating, in the following IPs:

- **PIM** – Promoting Inter-cultural Management Competencies for the Working Life in the Baltic Sea Region
- **IPEAL** – Intensive Programme on Embedded and Ambient Intelligence
- **IC-SID** – Inter-cultural Approaches to Service Innovation and Design
- **Wisdom** – Web Information System Data Organisation Modelling

## For ten years, IT College has been training Cisco specialists in Estonia

The Cisco Network Academy Program is a worldwide partnership between the Cisco Corporation and academic institutions, including IT College. Cisco's role in the partnership is to provide various curricula, an online worldwide test engine and lab materials through the CNAP programme.

The academic institution's role in the partnership is to provide teachers and educational facilities to teach students the various curricula offered through the CNAP programme.

ITC is the regional academy for this programme here in Estonia, and we offer three of the curricula in the CNAP programme: CCNA, CCNP and CCNA security.



## IT College values and stimulates youth interest in technology

The Robotics Club has been operating in the college since 2002. The club, which is popular among students, participates actively in the annual robot competition Robotex, and the club members have been awarded numerous prizes. The club is run by Margus Ernits, a lecturer at ITC. Each year, we also instruct high school students and prepare them for the Robotex competition.

For further information, see [www.itcollege.ee](http://www.itcollege.ee)

Text: Raul Kalev  
Photos: Tallinn Tech

# Estonian eTiger Goes Global

Alar Kolk at the Macau  
University of Technology

## The Tallinn University of Technology introduces global e-state technology in Silicon Valley and Shanghai

Estonia is globally known as a country with a highly developed IT infrastructure, where most people prefer to manage their daily business via computers and smart-phones rather than in face-to-face interactions. The development of e-state technologies plays a significant role in the daily business of the country as well: most adults provide digital signatures with their ID-cards and use mobile parking on a daily basis; all public databases are centralised in x-road, which enables residents to receive all relevant state information from one information source, and public bodies to make simultaneous enquiries from all databases; e-health means that doctors can access health histories and current treatments of all patients online – no longer do doctors write prescriptions on paper: they make them available to pharmacies over the internet; in Estonian e-elections, citizens vote without leaving their homes. In addition, Estonia this year managed to surprise

the world by creating one of the largest databases – the financial data of all local governments – easily and comfortably available in a cloud. E-governance in Estonia is not just a word with a nice ring to it - it is the practical everyday business of managing the country more efficiently in the interests of all residents.

Understandably then, IT-related curricula are the most popular in the country. This became even more the case after NATO brought its cyber defence centre to Tallinn, the town where Skype was developed and where the IT giant still has a development team. The Tallinn University of Technology is situated in the same building complex as the Skype Development Centre. It is the university with the biggest IT potential in Estonia: 75% of all IT students and the highest number of overseas students in the country study here. The Tallinn University of Technology is taking advantage of the e-state competency and experience, and teaching it to approximately 15,000 students. The university is among the first in the world to introduce such popular English-language courses as Cyber Security and Healthcare Technologies. Next

they will introduce IT Forensics and E-State Technologies.

The Tallinn University of Technology is aiming beyond the local market. They have set the high target of becoming one of the leading technology universities in the world, more specifically in the field of e-government technologies.

## Study trips to Silicon Valley change students' world-view

Alar Kolk (38), Vice Rector of the Tallinn University of Technology is a young man with an international grasp, who spends about 120 working days a year flying around the world looking for new development opportunities. In just a couple of years, he has managed to turn the 95-year-old dignified institution into a pillar of international innovation. Kolk claims that the only way forward is to use Estonia's successful e-state experience in order to reach the top of the world's universities in the field of IT. This means collaborating closely with those who are leading in the field today.

On Kolk's initiative, the Tallinn University of Technology has begun strategically important cooperation with Stanford University and the University of California at Berkeley, which are consistently among the world's top five universities. Cooperation agreements include exchanges of students, tutors and researchers. Professors from Berkeley and Stanford and top managers from Silicon Valley technology companies are already making regular appearances at the Tallinn University of Technology – their major lectures take place on a monthly basis.

Silicon Valley is the land of dreams for most Estonian IT professionals. But the Tallinn University of Technology is the only Estonian institution to date that has enabled students to study there. For example, the most entrepreneurial master's students travel twice a year to Silicon Valley, all expenses paid by the university, to study under tutors from Stanford and Berkeley and train in the head offices of Google and Microsoft. Many students who have visited the Valley say that their entire world-view has been changed. Suddenly, they have become interested in inter-cultural business models which change the world and have forgotten about their previous plans of starting a cafe or a car repair shop. "Thanks to this experience we have understood here what modern innovation and enterprise study mean in the global sense and we are in the process of integrating this approach successfully in our study and research work," says Vice Rector Kolk.

### The Tallinn University of Technology wants to be the gateway for Estonians to Asia

In addition to Silicon Valley, the university has started to target China. For two years running,



Meeting at the Macau University of Science and Technology

delegations of about twenty professors from the university have attended road-shows in China's top 100 universities. This has taken place in cooperation with the Universities of Fudan and Jia Tong. "We want to be the gateway to Asia for Estonian companies. And we want our scientists to be able to carry out research in the largest environment, where the most innovative companies in the world are congregating. In addition, we want to bring in students from China who could one day become agents for our exporters," explains Kolk. Whereas today forty Chinese students study at the Tallinn University of Technology, this number is set to increase to one hundred next autumn. According to Kolk, the university is not interested in large numbers, but wants to recruit the most clever Chinese students, who are brought into master's programmes to study e-governance technologies.

The Tallinn University of Technology is already known and valued in Asia. Two corporations – Mitsubishi and Samsung – have signed cooperation agreements with the university this year.

The contract with Mitsubishi is connected with adjusting electric cars for the Nordic climate, and with Samsung the university is working on creating future technological solutions for the classroom. These are revolutionary fields of development and the university is making serious investments.

### E-state innovation centres established with Microsoft, Samsung and Ericsson

Despite the achievements to date, Alar Kolk says that the Tallinn University of Technology understands the need to take another important step in order to develop e-state technologies. The university plans to open its innovation centres in Silicon Valley and Shanghai in 2014. "We would like to show the rest of the world the right way to create e-state services, with regard to information technology," says Kolk. "In addition, we will advise start-ups who want to invest in e-state technologies." This is not just a dream, as specific steps have already been discussed with the partners of the development centres: Microsoft, Samsung, Ericsson and others.

What is the end goal of this ambitious international development? Alar Kolk says that, in addition to increasing different resources at the university, his personal wish is to create future bridges for young people in Estonia and to encourage them to think and act globally. "If everything we are doing at the university today guarantees thousands of our students interesting jobs in international corporations with monthly salaries of at least 10,000 euros, we can probably say our mission has been a success," he says. "But of course our efforts could also bring dozens of new IT billionaires to Estonia!"



Students attending a conference in San Francisco



# Conquering The Final Frontier

Text: Mihkel Kärmas  
Photos: ESTCube1, Gaia

Space is no longer a privilege of world powers. Some of the most exciting and ambitious projects in Estonian science have to do with space conquest. We introduce the three which are closest to take-off.

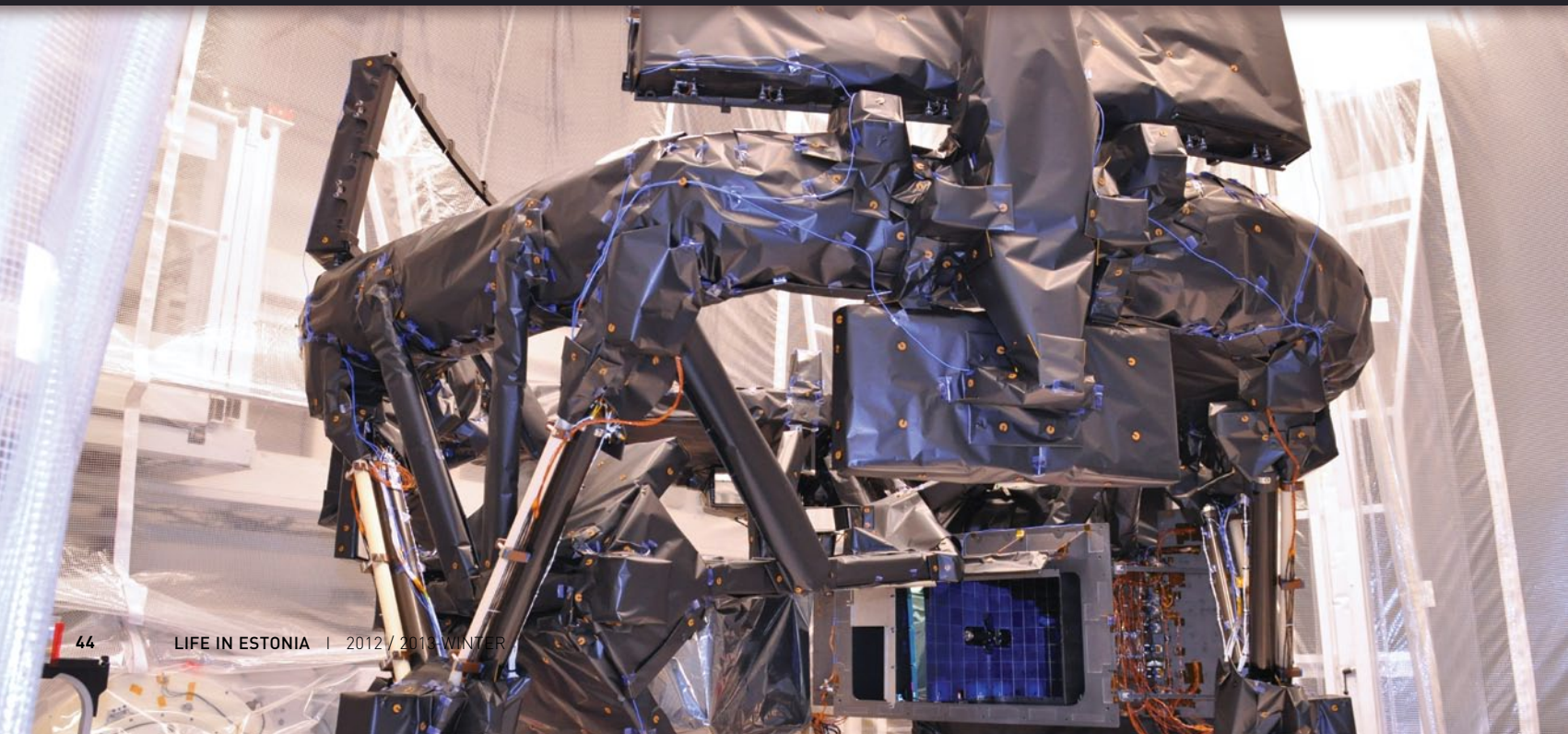




Photo by: Viljo Allik/Tartu Observatory, Andris Slavinskis and Erik Ilbis assembling the electrical system of the satellite



In April 2013, the launcher taking the satellite EstCube1 into orbit will take off from the European Space Agency base in French Guyana. This will be a remarkable moment for various reasons. EstCube is the first artificial satellite in Estonian history. It will carry out an experiment for the purpose of building the fastest spaceship in human history. It is also an unprecedented educational cooperation project which has brought together over a hundred students from different Estonian universities.

This ambitious project began in 2008, when **Mart Noorma**, Vice-Dean of Studies at the Faculty of Science and Technology of the University of Tartu, found that future engineers had no use for the theory of space technology without some practical experience. "We introduced the student satellite project to supplement theoretical courses and to enable students to build their very own spaceship," explains Noorma.

When the project was announced, it was still unclear what the mission of the Estonian satellite would be. Soon contact was established with **Pekka Janhunen** from the Finnish Institute of Meteorology. The project that Janhunen had stowed away in his files seemed like something out of science fiction: an electric solar wind sail, which theoretically would make it possible to move around in space six times faster than any space apparatus built by man previously.

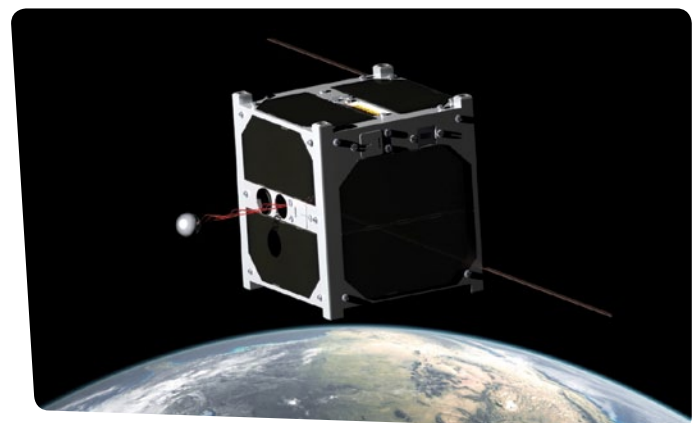
"This wind sail is similar to that of a sailing yacht, but the craft is thrust forward by solar wind or the protons which the sun emits, with speeds up to 400 kilometres per second," explains Noorma. The same particles are the ones to blame for the Northern Lights as they touch the Earth's atmosphere. The electric sail invented by the Finn is really based on high school physics: repulsion between like charges - the sail (which is a very fine network of wires) is propelled forward by positively charged particles from the sun.

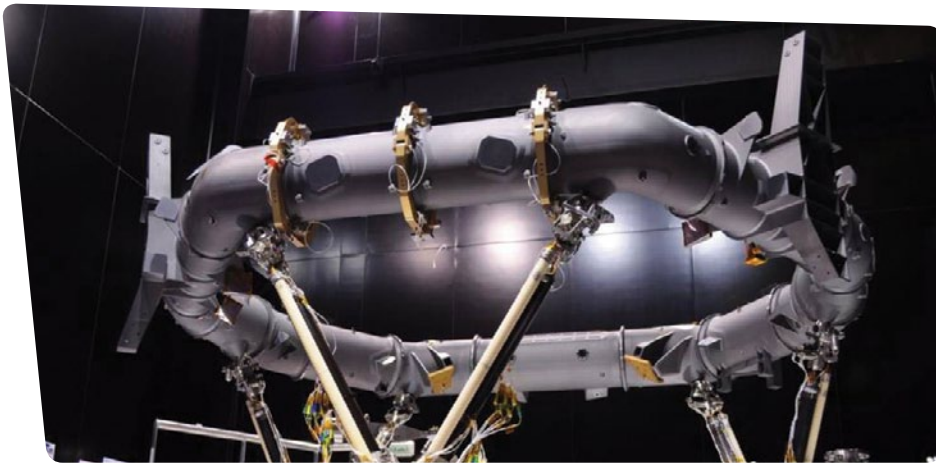
"It is a gentle push, but a continuous one. And within a year we will achieve the speed of 30 kilometres per second, which is twice as fast as the fastest man-made spaceship to date. Theoretically it is possible

even to achieve the speed of 100 kilometres per second," says Noorma. According to him, the solar wind sail would be most suitable for freight transport, as it takes time to pick up speed. "It does not spring to life like a Ferrari; it is more like a heavy freight train which starts slowly but can achieve very high speeds."

The measurements of the wind sail are awe-inspiring. According to the concept, the wind sail consists of wires 20 kilometres long, which are placed radially around the host ship like a spider's web. What makes it even more fascinating is that the sail, whose radius is 40 kilometres, weighs a mere 50 kilos! The biggest challenge is how to unwrap this web in space. This is exactly what EstCube will test – at first on a small scale. The cube-shaped satellite of 10x10x10 cm, which weighs only one kilogram, will move into orbit and attempt to unwrap ten metres of wire.

"This aluminium wire is as thin as a strand of hair. Actually it is not really a wire but a complicated wire structure," says Noorma. "Our task is to manage to unwrap it from a rotating vessel so that it doesn't get tangled and, of course, we are doing it whilst weightless." When the sail is "hoisted", there will then be an anxious moment to see whether the "wind" is pushing it forward or not. "Even if the first attempt fails, our students will have benefited from having participated in this international educational project," claims Noorma, who promises to keep trying as long as it takes for the sail to work.





### Population Census of the Milky Way

In August 2013, one of the grandest projects of the European Space Agency – satellite Gaia – is set to leave the Earth. “To put it briefly, its task is to carry out somewhat of a population count in our home galaxy, the Milky Way,” is how **Laurits Leedjärv**, an astrophysicist and researcher at the Tõravere Observatory, sums it up.

Gaia, which was designed and built during the last decade, is a huge telescope which consists of thousands of cameras and detectors. But counting all the 150 billion stars is even a job too difficult for Gaia. Therefore, the aim of the mission is to measure and map a sample: about a billion stars in the Milky Way.

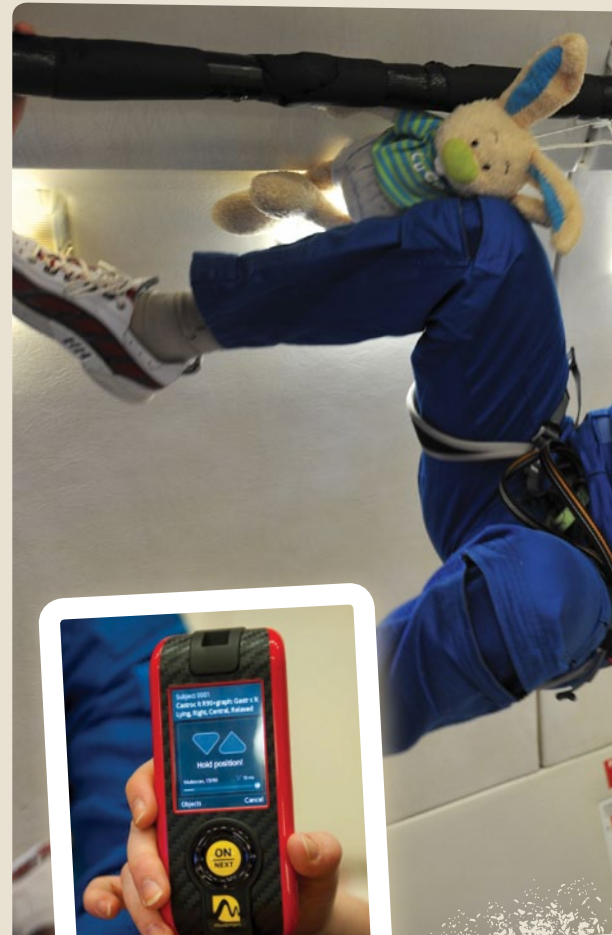
“They will measure the exact coordinates, distance, light and spectre data,” states Leedjärv. “It will enable us to find out how old the stars are and what types of stars they are. From this measurement, we will have a much better three-dimensional view of the make-up of our galaxy.” This flying super telescope will continuously scan the skies and fix the location of every astral body approximately every seventy days. In this way even minor alterations in location will be registered and, on the basis of this, it will be possible to make

calculations about the distances between astral bodies.

Even those billion stars, less than a hundredth of the whole Milky Way, will provide a huge amount of data which no human being will be able to review. This is where Estonians enter the game. Researchers at the Tõravere Observatory are helping to develop software which will make it possible to automatically select or classify certain types of stars out of the huge amount of material photographed by Gaia. More specifically, the Estonians will focus on stars with emission lines.

“Our role is to develop algorithms that will make it possible to quickly identify the stars with emission-lines from all the data and subsequently to determine what kinds of stars they are,” explains Leedjärv. “We suspect that we are already familiar with most of the stars Gaia will find, but we hope that among those billion objects we will also find something new and exciting.”

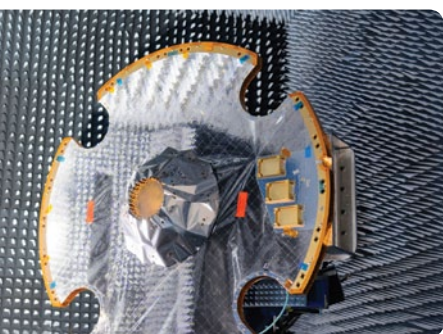
Although we are talking about looking 100,000 light years into the future, there may be specific benefits for us on the Earth today. “This is an academic project which will provide us with insight into the deepest layers of the universe, but those algorithms may also be implemented elsewhere, for example in medicine,” says Leedjärv.



### Target: the Red Planet

Another project which started at the University of Tartu has come closest to participating in a manned space mission. In October an Estonian team took part, for the second time, in the weightlessness training of the European Space Agency, in order to test a gadget which at first sight looks like a mobile phone: the myometer. “The myometer, or myoton, is an appliance meant to measure the tone, elasticity and stiffness of muscles – its biomechanical properties in other words,” explains **Aleko Peipsi**, Manager of Myoton plc and the author of the experiment.

“When astronauts spend a long time being weightless, certain muscles start to lose muscle-tone, as they don’t have to keep the skeleton upright. Myoton is an appliance which helps to measure this process and put together training programmes for astronauts,” adds **Madis Võõras**, an adviser at Enterprise





For the European Space Agency, trial weightless flights are carried out by NoveSpace, a company based at the Bordeaux airfield. They use what looks like an ordinary Airbus 300 for the experiments. The interior of the plane has been emptied and divided into several testing areas. The walls and floors are upholstered. It is called a parabolic flight because the trajectory looks exactly like a parabola. The sense of weightlessness is created in the upper part of the parabola and lasts for 22 seconds.

Estonia and a coordinator of Estonian space programmes.

The concept was developed as early as the 1970s by **Arved Vain**, Docent Emeritus of the University of Tartu. Equipment initially developed for sports medicine has been improved upon for six generations and it is now possible to use it in a weightless state. It is based on a simple method: the myoton gives a gentle tap to a muscle and registers the reaction to it. On the basis of the muscular response, the corresponding parameters are calculated. The whole process only takes 0.2 seconds.

Tests were carried out on parabolic flights organised at the Bordeaux airfield in France by NoveSpace, a company specialising in this area in cooperation with the European Space Agency. During the last campaign, their flying laboratory had experiments

from twelve different countries on board. As Estonia is not a member of the European Space Agency, Estonians were members of the German Sports University team. "This device is very small, it's very handy and, most importantly, it's non-invasive, so it can be used easily on people in extreme environments like weightlessness," says **Doctor Stefan Schneider**, explaining why the myoton is of interest to them.

"This is absolutely perfect and this is why ESA is so keen to qualify this instrument so that it will be used on board the International Space Station and, who knows, maybe in the future whenever we decide to go back to the moon or for even longer trips to Mars," comments ESA's Coordinator of Parabolic Flights **Doctor Vladimir Pletser**. If all goes well, the myoton will be on board the International Space Station in 2014.

## Estonian Space Coordinator: "There is no other way"

As an independent country, Estonia joined the European space industry in 2007, when the cooperative framework agreement was signed with the European Space Agency (ESA). This is a precondition for becoming a full member. As part of a campaign, ESA—which in Estonia is represented by Enterprise Estonia—has selected 13 projects submitted by different research bodies and companies which it considers worthy of support. The three projects described in this article are among them.

"Being involved in space technology and the space business is one of the signs of the technological competitiveness of a country. If Estonia wants to be a modern competitive state, there is simply no other way," says Adviser of Enterprise Estonia and Estonian Space Coordinator Madis Võõras.

"Space science, like any other branch of science, brings two main benefits: first we enlarge the knowledge base of humankind – the main fundamental value – and, secondly, we bring real practical benefits to people in the form of various applications," adds Mart Noorma, curator of the student satellite project and Vice-Dean of Studies at the Faculty of Science and Technology of the University of Tartu.



The author of this story Mihkel Kärmas (first from the left), participated in the weightlessness training of ESA this October



Text: Doris Altin and Ernest Truly

Photos: BFM

# BFM - A Cutting Edge Film And Media School In Tallinn

**It was on 30 April 1912 that Estonia's first film-maker, Johannes Pääsuke, premiered his first short in Tartu, a chronicle of the Russian aviator Sergei Utoshkin's stunt flight. So, in 2012 Estonia celebrated the 100th anniversary of film-making.**

The first Estonian feature film, "Karujaht Pärnumaal" (The Pärnu County Bear Hunt), soon followed in 1914. The development of a unique genre of animation emerged with "Kutsu-Juku" (Juku the Doggy) during the first period of Estonian independence (1918-1940). During the Soviet occupation, Estonian film-makers tried to communicate independent thoughts through poetry and symbolism, while producing propagandist movies presenting images of socialist ideals. After the war, all film production was concentrated in Tallinn's film studio, which since 1963 has been named Tallinnfilm. In 1954 the studio began to independently create fictional films and in 1957 puppet films. Naturally, scripts, and later the films themselves, had to be approved by the Cinema Committee in Moscow. Estonian independence in 1991 marked the emergence of a renewed film industry. Since 1991 around 50 different film studios have operated in Estonia. Altogether they have produced about 1000 films, including 40 feature films and 110 animated films. In 2011, eight full-length features, four full-length documentaries, and one full-length animated film were produced in Estonia.

## Film and Media Studies in Estonia

Audiovisual studies have been an important part of the curriculum in Tallinn University. The Media School of Audentes University merged with the Tallinn University Film and Video Department, and formed the Baltic Film and Media School (BFM) in 2005. The school's lecturers include international film-makers and professionals, and guest lecturers from the best universities worldwide.

In its original location, in the district of Mustamäe, BFM shared facilities with a hospital training centre; from the Soviet hospital building, with skeletons in the corners of rooms, BFM moved to a distinctive futurist building located in the courtyard of Tallinn University in 2012. In its current location, BFM shares facilities and cooperates with other organisations, such as the Estonian Digital Centre, a training and development centre for Estonian post-production companies and the Estonian Academy of Arts Animation Department.

The BFM building is named Nova, to fit with Tallinn University's other buildings' Latin names: Mare, Terra, Ursa and Silva. In the settings provided in Nova, students enjoy dedicating their effort and time during and after lectures, because of the well-designed studios, and academic and social spaces.





The Nova building was designed by the young and ambitious architects Maarja Kask, Karli Luik, Ralf Lööke, Kristiina Arusoo and Pelle-Sten Viiburg, from the Salto Architecture Bureau, who were selected in a national competition to realise their conception. Together with the interior designer Ville Lausmäe, they created a modern building that has its own quirky touch, a building that is very honest and where nothing is hidden; the concrete walls and ventilation are revealed to the eye. Glass walls and ceiling, and open walkways offer unexpected views through the levels of the structure and open spaces.

Within the rooms of BFM, there are several state-of-the-art production and editing rooms: a film sound stage, a television studio, a cinema hall, sound mixing rooms, three sound editing rooms, eight editing rooms equipped with MacPro computers and a computer lab. To edit images and sound, the BFM computer lab, an authorised Apple Training Centre, has fourteen iMacs loaded with the video editing programmes Final Cut Pro X and Final Cut Pro 7. BFM students have access to a twenty-terabit Storage Area Network for large file storage.

BFM gained international recognition when the film studies graduate Tanel Toom's film "Pihtimus" (Confession) was nominated for an Oscar in 2011. Known internationally as an active learning environment in media and film, and for a range of educational opportunities, BFM has attracted students from more than twenty-five countries: Latvia, Finland, Japan, Brazil, China, Iran, Venezuela and beyond. The international multicultural environment creates opportunities for collaboration, and students have developed professional networks around the world. Courses are taught in Estonian and English on the BA and MA levels.



In BFM, students learn to use the most up-to-date equipment and technology but they retain a flair for improvisation and inventive use of media and film. BFM offers many departments structured for the learning needs of tomorrow's film and media professionals: script-writing, directing, camera operation, sound recording and engineering, editing, information technology (IT), production management, marketing and the semiotics of media. Programmes provide students with an in-depth understanding of media, and skills in a focused area of production. Students learn history and theory, as well as hands-on skills, to produce commercial and artistic endeavours on a professional level.



The Film Arts programme and the Audiovisual Media programme are the most established and popular programmes. Students work with new technical equipment and studios to develop their creative skills. Students develop and create audiovisual works in a variety of formats, including TV programmes, short films, documentaries, music videos, and advertising and corporate videos; they work in different capacities to master the practical applications of the tools and technology related to production. Film Arts is taught in Estonian on the BA level and in English on the MA level; Audiovisual Media is taught in English on both levels.

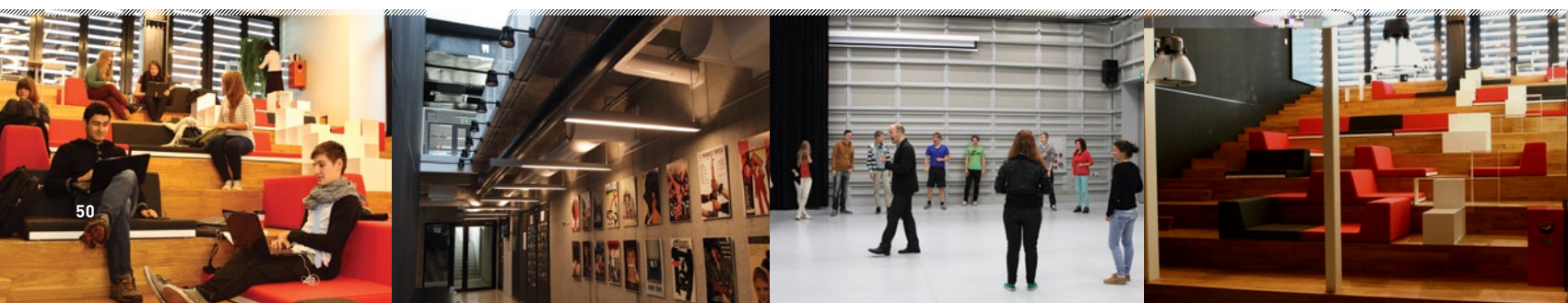
Cross-media Production is a new development. BA studies combine cross-media content, business and management, audiovisual media production and IT, offering both theoretical foundations and exciting practical assignments. The MA programme blends the study of audiovisual production for multiple platforms, as well as a programme of creative business development. Cross-media Production students learn how to combine such different screens as smart phones, TVs and new media to create stories. Students learn skills in IT in cooperation with the IT Institute and have IT support from specialists. Cross-media is taught in English on the BA and MA levels.

Cooperation (which BFM is very open to generally) between schools and departments occurs within the Theatre and Film Directing programme; there is a joint MA programme between BFM and the Estonian Academy

of Music and Theatre. Film and theatre directors are taught together so that they can share ideas and information and to improve the cooperation between theatre and film. The studies are in Estonian. Sound and Film Sound Engineering Arts is a joint MA curriculum between BFM and the Viljandi Culture Academy of the University of Tartu; students are instructed individually and in teams by masters in a hands-on learning process during the first year. In the second year, students develop and complete their graduation projects. Studies are in English.

The training centre BFM Works instructs middle and secondary level school teachers in the use of effective audiovisual and IT solutions in their everyday work and teaching process. The teachers learn how to reach their pupils by using digital solutions as effective educational tools. BFM Works also offers different Apple training sessions, movie-making courses and many other courses for beginners and professionals. The trainings are in Estonian and in English.

Tallinn has a rich and ancient history, and today it is a lively cultural centre. Keep an eye on Estonian film and media, and it will be clear why so many people come to BFM in Tallinn from abroad for audiovisual studies. BFM offers an international community of people with knowledge and expertise, in a cooperative environment, working with the most up-to-date equipment. And, Estonian films are usually furnished with subtitles in English, so while in Tallinn visit the local cinema and enjoy an Estonian film.



# PORTFOLIO\_KAIDO OLE



Untitled CXXVII | 200 X 190 | oil on canvas, 1999



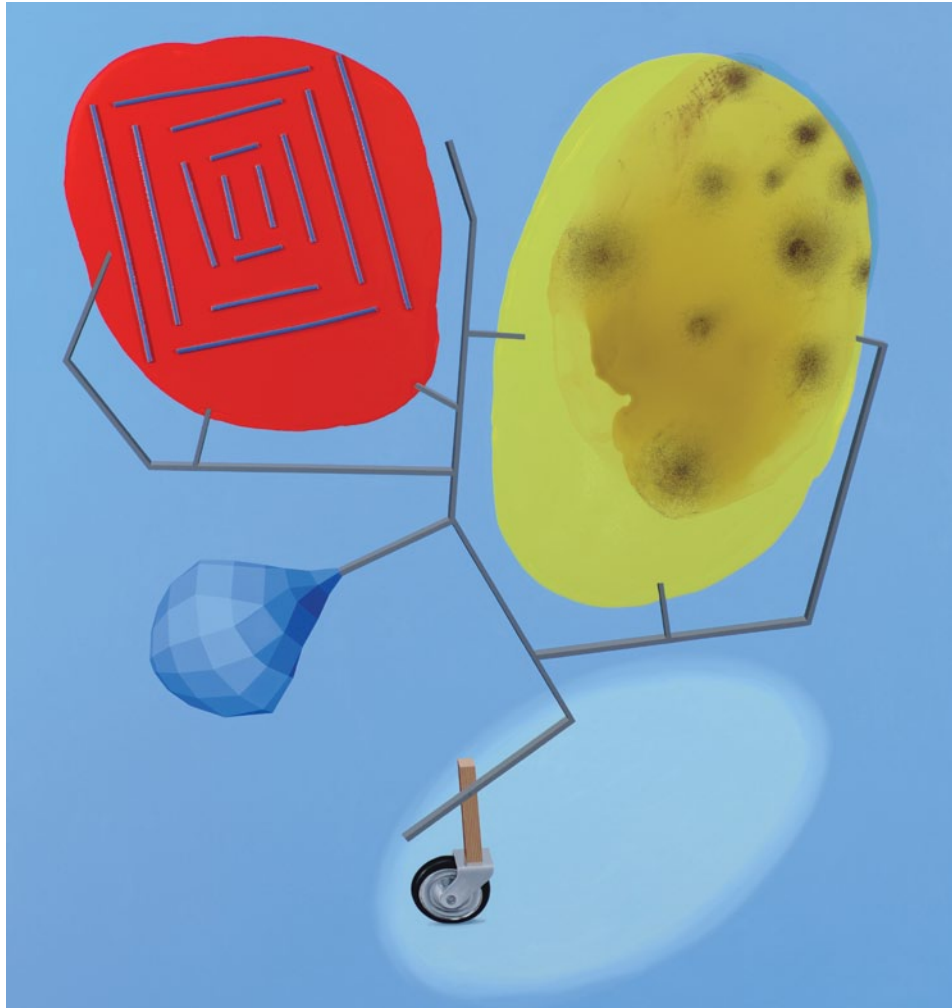
**Untitled CLIX** | 200 X 190 | oil on canvas, 2000



**Untitled CLXII** | 200 X 190 | oil on canvas, 2000



**Untitled CLVI** | 200 X 190 | oil on canvas, 2000



**Playful Still Life** | 220 X 200  
oil, acrylic and alkyde paint and varnish, plastic details and colour earth on canvas, 2011

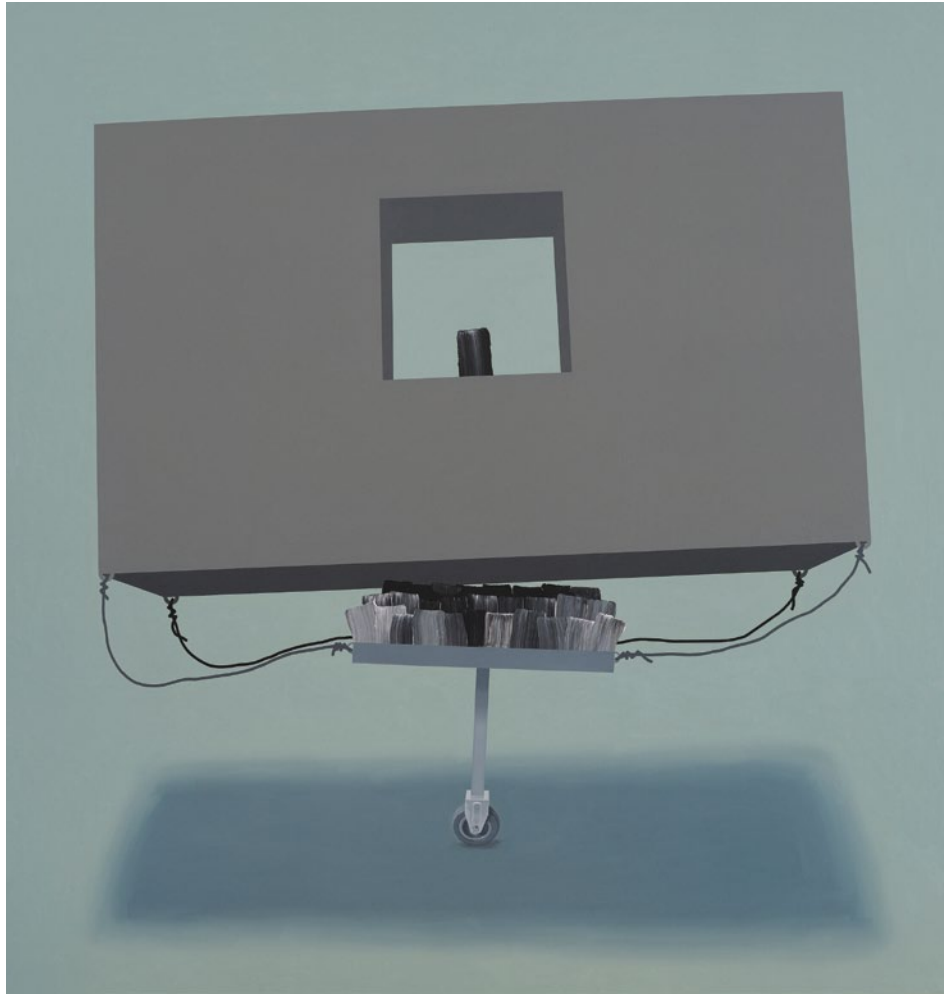


**The First Still Life** | 160 X 160 | oil and acrylic on canvas, 2011





**Still Life with Badly Fitting Objects** | 150 X 145  
oil, acrylic and enamel with plastic details on canvas, 2011



**Big Social Still Life I** | 390 X 370 | oil and acrylic on canvas, 2011

A close-up portrait of Kaido Ole, a man with a shaved head and light blue eyes, looking slightly upwards and to the right. He is wearing a dark blue crew-neck sweater over a red t-shirt. The background is a light grey gradient with white snowflake patterns in the upper right corner.

# Kaido Ole - A Pedantic Rebel

Text: **Anneliis Aunapuu**  
Photos: Atko Januson



**Kaido Ole** (born 1963) is a man in demand. He is a painter and a thinker, a teacher and a performer. Awareness and a deep sense of discipline emanate from him. No other artist has put on such vigorous exhibitions in Estonia.

The art of painting is being serialised. Artists are no longer commissioned to paint portraits of horses, which (probably) kept them in business for years. It is no longer the era of single paintings with a “wow effect”, amazing audiences in Parisian salons. Art is now made in collections, where single pieces sustain each other. It is not a single feather, but a whole wing, with which you can fan some wind into the audience.

In his exhibitions, Kaido Ole varies the feathers of the wings with irresistible joy, while keeping to the rules of the game valid for that particular angle of the wing. Yet each new wing has a surprisingly different concept, something totally new and unexpected.

His paintings recall the influence of the culture of the comic book. His images are strong and clear and tell significant stories, yet sometimes the opposite is true and the work remains mute and mysterious. Sometimes there is real action in the paintings. This does not, however, reduce the paintings to illustrations, but elevates them to the point of irony and the grotesque. The unstoppable theatrical and huge format of his works provides them with an authentic elitism which cannot be ignored. His paintings do not tell a story; they shout it to the viewer. Sometimes the story is deafening.



KAIIDO OLE	KAIIDO KUNSTIKOOL AKA	guuäs	VE
2010 4/5	KAIIDO'S ART SCHOOL AKA	gouache	

### To design or to paint, that is the question

Despite his panache, there is a sense of the practical designer behind Kaido Ole's circus tricks: less is more and everything must have a purpose. He looks at his conversation partner sincerely, with burning eyes and a grin hiding behind the seriousness. How did this all come about? Growing up as a single child in an Estonian provincial town, Rapla, he had plenty of time to observe and to daydream. The dream of becoming a painter took him to the capital. It was not a smooth start: he tried several schools, and even attended cooking school. Despite his good prospects elsewhere, his dream of living the life of a painter would not subside and soon he was fortunate enough to land at the Institute of Arts.

He spent the first two years of his art studies at the Design Department of the institution offering the highest level of art education in the 1980s, where “specialists were prepared to design functional items for industrial production”. Today it sounds like a clumsy robot of the previous generation, but back then it meant being in an exceptionally open and enthusiastic environment which spurred people to think. In a sense, any type of thinking back then seemed suspicious and received special attention from the paranoid system.



Untitled CXXXIV | 200 X 190 | oil on canvas, 1999





Having been created “against the wind” by Bruno Tomberg, the curriculum put a high value on erudition, creativity and a broad view. It was considered important to express oneself in theory and visually, following the latest in form, technology, materials study, logistics, ergonomics, philosophy and many other fields. In addition to designing, drawing and painting were skills which were held in high regard.

Yet Kaido Ole continued to dream about becoming a painter. A designer who painted was nothing extraordinary back then: Andres Tolts and Ando Keskküla, both designers by education, were creating waves in the world of big art. Yet, at the Design Department preferring painting to design was considered slightly weird. For Ole, however, the painting department just around the corner was irresistible – so he transferred there.

The name Kaido Ole created shivers of recognition when he was still totally new on the arts scene. Who hadn’t admired the paintings of the avant-garde painter Eduard Ole, who worked during the first Republic

of Estonia. Eduard was Kaido’s great-uncle, but the two had never met. But perhaps without such roots the boy would never have had the idea of becoming a painter in the first place? In any case, one of Kaido Ole’s exhibitions in 1996 played with the issue of names and identities, where he toyed with the possibility of becoming one with his predecessor, a name in art history. But this was just a game; he immediately returned to his topics and thoughts. The similarity between the two Oles is the fact that they are both very strong artists of their time.

Today Kaido Ole confesses that he soon became disappointed in the painting department, not finding there a miracle or even proper teaching. Yet the dream of becoming a professional painter survived. And this is what still feeds him today. After graduating, he stayed in the university to teach. The foundations of his thinking were built during his time in the Design Department and, on that basis, he tried to provide the students with what he considered to be missing.



Untitled XXXIX, Untitled XLII, Untitled XXXV, Untitled XXXVI, Untitled XLII | 29 X 29 | oil on plywood, 1993-1994

## Repetitions and tricks

More and more, Kaido Ole's exhibitions became manifestos, which were difficult to swallow because of their grand and unusual character. People have been known to touch Ole's canvases in order to find out if the artist has used canvas print, a modern technique, to produce the results: the amount of time that must be spent on covering those huge surfaces seems to exceed the capacity of one person. But no, each painting has paint transferred to it with a careful and accurate paintbrush, without being afraid of repeating the motif or multiplying the amount of work.

The painting by Ole is always very clean and correct, almost boasting with its size. It provides an interesting contrast with the peculiarity of the motifs and thoughts, which reach the level of naughty sarcasm. Even the most unstoppable idea eruptions have been painted on the canvas with an unbelievable sense of calm and continuity.

The questions raised by visiting Ole's exhibitions seem to nest and multiply in pictures. They are obviously questions the artist has thought about long before the exhibition. The personal exhibition in the Draakon Gallery in 2008 was even titled "Questions", although it may have seemed that the artist already had an answer; a rainbow-coloured circle. It seemed that the loudspeaker-circle, which had vibrated as a metaphor in the nervous system of art circles since 2003, had found its answer in the world of colours. Kaido Ole hung 18 monochromatic loudspeakers in a dilapidated factory environment dating back to the Czarist era. The exhibition was called "The Band". This exhibition raised a myriad of questions, but it seems that Kaido himself was able to meditate on or even find answers in the world of these large, perfect, similar loudspeakers.



**The Band**  
in the Vaal Gallery,  
Tallinn 2003

"I thought about it a bit too late. Had I come up with the idea of loudspeakers from the start and just painted them all my life, it would have been something," says the artist, with almost serious regret. This hindsight is evidence of the fact that the author cannot resist style without compromises.

Kaido Ole's workshop also represents style, although a slightly unexpected style for a painter: it looks like the redecorating work just finished yesterday. A wide window overlooks the roofs of the Old Town, but this is where the similarities with the Parisian attic workshops end. Returning to the room itself, the walls are filled with shelves of art books, next to which there are boxes of music and loudspeakers (models?), and on the other side a practical jig for frames and canvases. Under a semi-finished painting, on the beautiful birch plywood floor, there is a piece of plastic without any torn edges. Next to the door that has his Kumu exhibition poster on it, stands a well-designed (special plywood) über-minimalist kitchen unit. The designer Ole has done his best to enable the painter Ole to go on with his work.



Untitled CXI | 160 X 155 | oil on canvas, 1997

## Time for recognition

He quit teaching and has been self-employed for the last few years. It seems that the energy released from school duties has sprung into his works: he has added an impressive output to this year's art scene in Estonia and he has been recognised with the distinguished Konrad Mägi Award.

Kaido Ole has found recognition before. In 1996, he brought the Lithuanian Union of Artists Award home from the Painting Triennale in Vilnius. In 1998, he won his first large Estonian prize: the Kristjan Raud Annual Award (one of the most prestigious art prizes in Estonia, given for real achievements and continuity in arts). That year he exhibited boards put together from robust planks, where symbols from everyday life were painted, which all tortured a little ball-head human with depressing nonchalance. Hopeless loneliness, evolutionary uncaring, size counts... the series had a very clear message and it was fresh in its poster-like character and Spartan lack of colour.

"I don't consider myself to be a big colourist; I use clean colours and mostly mix them with white. I have my own view on clarity, but it is not the only one out there, far from it. There are so many totally different approaches and ways to express yourself. Take Julian Schnabel, for example (and Ole points to a shelf with a book on the artist). He is my favourite, although we live in totally different worlds. The fact that I do not use his techniques does not mean that I cannot admire his works," the artist says tolerantly.

The intermediate years have brought recognition from the Estonian Cultural Endowment and elsewhere. Together with the artist Marko Mäetamm, with whom he shares the joys and sorrows of seeing and making art, Ole had the honour of representing Estonia in the 2003 Venice Arts Biennale.

## Size counts

Kaido Ole's paintings are becoming ever bigger, so that the space to exhibit them is becoming an issue. Some of his works are on display in the lobby of the Radisson Hotel. Even our highly regarded Museum of Contemporary Art has turned out to be too small for them. At the magnificent exhibition he put on this year, the main exhibit had to be tailor-made, i.e. built into the exhibition space.

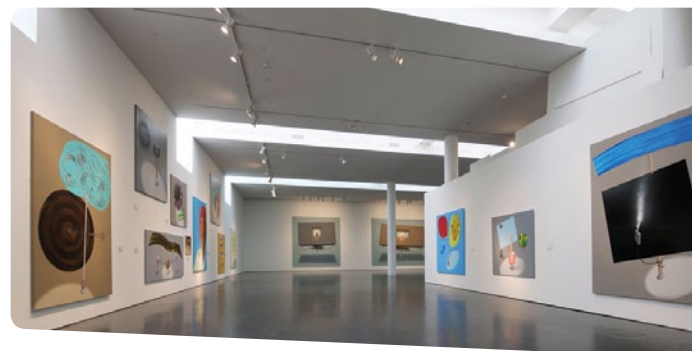
After the exhibition, the works were sent to St Petersburg, where Kaido Ole's personal exhibition "2003-2011" was opened in a reputable private gallery, the New Museum. This was an honour indeed in this city of art!

"We had already exhibited Kaido Ole at the Moscow arts fair, where he turned out to be very popular. Ole is well-suited to the developed Russian taste in art, if that exists," said the organiser of the exhibition, Olga Temnikova, to the press.

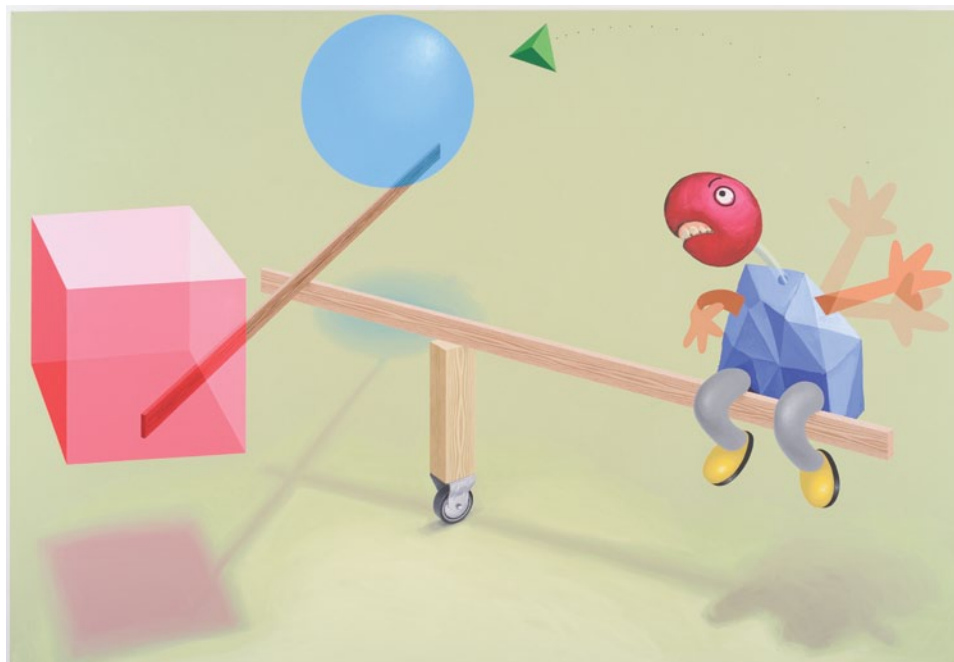
Those were not the only two exhibitions this year. In the autumn, Ole frightened the Tartu art crowd with his exhibition "Three lessons of painting. Jonas Gasiūnas (Lithuania), Paweł Łubowski (Poland) and Kaido Ole (Estonia)".



**Handsome Hero**  
580 X 1099,  
acrylic and rope  
on MDF  
and cardboard  
panels, 2011



Still Lives in KUMU Art Museum, 2012



Still Life with Retard and Basic Geometric Forms | 270 X 390 | oil and acrylic on canvas, 2012

## A life wrongly assembled

The third, although not solo, project was also important for Ole, because he was introducing a new approach, at first only on the sides of paintings. "Until now I have only played with two kinds of creatures in my pictures: ball heads and, after a photo, myself. Now I have created those retards, as after the stills it was logical that I return to people, but the earlier solutions were no longer appropriate. Those retards should form the next personal exhibition, where we will see what and how

much they are worth. What was decisive with this idea was the name itself; it laid out the important bits and let my thoughts flow. However, it really disturbs me that the term itself does not translate easily into English," Ole says.

Listening to Ole, it seems that perhaps his creaking connections on canvas are not simple surrealist capriciousness, but that this is how he sees our wrongly assembled society. Although he is no longer involved in education, the system worries him: he does not like the fragmented nature and the lack of vision in our school system. "Children should get an idea of the large picture from early on; no matter what you call the subject, it should in reality be teaching them the art of thinking. Why you exist, who you are and why you are sad right now. How to cope with it, why you should work, why you should rest and how you can

create contentment.... Perhaps then we would raise the first generation of people who could shape their environment and their country, in a well-considered way, to be something we would be happy with," says Kaido Ole.

A real painter needs to be able to see things both "from the bottom and from the top", in order to see the big picture and later to translate this picture into the language of shape and colour. To do so aggressively enough to attract our attention is what counts.



# The Must-Have Souvenir From Estonia

Text: Piret Järvis

Photos: Johanna Eenma, Jelena Rudi, Kalle Veesaar





# Ewert and the Two Dragons Conquer the World

Gone are the days when visitors to Estonia received as presents from local hosts either a wooden doll dressed in national clothes, a bottle of Vana Tallinn liquor or a package of “kama” [traditional grain-based drink- ed.], for shock value. Our favourite souvenir today is the latest album by Ewert and the Two Dragons.

When the vocalist and leader of Ewert & the Two Dragons – Ewert Sundja (29) – won a legendary Estonian young singers competition in 2003, he immediately made it clear that his ambitions reached beyond the Estonian borders. Back then it seemed like just another dream of just another young and inexperienced musician. It is good to dream, but such plans are unlikely to become real. It is, after all, a fact that no Estonian artistes have made it to the very top in the world’s music business.

But then it started to look like Ewert’s journey towards conquering the world had received real momentum, as in 2008 rumours were spreading that his new band The Thief had signed a deal with a London-based record company and was recording new material with Sting’s Grammy-winning producer Kipper. However time went by and the public never got to hear the outcome of that cooperation. What happened happens to many promising artistes: the record company decided for some unknown reason to break off the deal.

The Thief called it a day. You might expect that the young musician’s spirits had taken a good knock and he would bury the dream of international fame. But fate had other plans in store. Today the ever-ambitious Ewert is a living example of how dreams tend to come true when you hold on to them very tightly. During the past year, Ewert and his three band-mates, Erki Pärnoja (28), Kristjan Kallas (28) and Ivo Etti (33), have toured around Europe and North America, giving about 150 concerts abroad in 2012.





The big news arrived at the end of October: Ewert and the Two Dragons signed a record deal with the legendary Sire Records in New York, a company from the Warner Music Group, which thirty years ago made Madonna famous. The band caught the personal attention of the founder of the company, Seymour Stein, who is one of the most well-known and respected music moguls.

But let us go back to the beginnings, to 2009, when the band was founded. This journey also takes us to a summer cottage in north-west Estonia belonging to Ewert's in-laws, where the Dragons recorded their first album *Hills Behind The Hills* in three days. This album did not draw the masses but it did catch the attention of music specialists, as the indie-folk-rock style of mixing guitar, organ, bells and catchy pop tunes had not been heard in Estonia before.

Actually, this fresh sound was new elsewhere too, as the Dragons attracted the attention of the most forward-thinking Latvian radio DJ, Toms Grevins, who offered the boys the opportunity to record their next album under his personal record company, I Love You Records. Latvia is not far from us and for many Estonians it does not really count as abroad. Nonetheless, the first door on the journey to an international breakthrough had been opened.

Today we can write about the cooperation between Ewert and The Two Dragons and I Love You Records with capital letters in Estonian

music history, due to the tropical storm caused by the second album of the band: "Good Man Down". To put it mildly, this album has overwhelmed, shaken and knocked senseless thousands of people, and not just Estonians.

Let the facts speak for themselves. The feelings of the local music audiences are demonstrated by the fact that "Good Man Down" has been in the Top 10 records sold in Estonia for two years, and for most of the time topping the charts! The band also picked up all the music prizes in 2012 and all their concerts in Estonia were sold out. Thanks to the band's love of moustaches and beards, Estonian males have become much hairier. In other words, Ewert, Erki, Kristjan and Ivo have become local trend-setters.

Such a musical force crossing all age and gender boundaries is very rare. In fact, only the traditional Estonian Song Festivals could boast of such an ability before Ewert and The Two Dragons came along.

The band has also taken other countries by storm. The record deal with Sire Records of the Warner Music Group is the icing on the cake. At the beginning of the year, the album was released by the French record company Talitres, and its owner Sean Bouchard remarked that what he most treasured about the band was that, although their music included American and English influences, their sound was still totally unique and fresh.

Ewert and The Two Dragons have toured France twice this year and, during the European Football Championships in the summer, the local McDonalds chose the band's song "In The End There's Only Love" as the signature tune of their TV commercial.

And that is not all. In August 2012, Ewert and the Two Dragons signed an exclusive worldwide song-writing agreement with BMG Germany. "Ewert and the Two Dragons is one of the most promising indie-folk music discoveries in Europe this year and we proudly support such great talent coming from Estonia," said Florian Schrödter, of A&R BMG Germany, in explaining their choice.

The big success in 2012 is also proven by the fact that the Dragons were nominated for the Best Newcomer of The Year award at the European Festival Awards. The winners will be announced on 9 January 2013 in Groningen, Holland, so keep your fingers crossed!

The band is well on its way to becoming real rock stars. Driving a few thousand kilometres a day on their tour bus is becoming routine, as are the fine wines and delicacies offered backstage.



## Epilogue:

When my Canadian relatives visited us last summer, my mother rushed into the record store and returned with no less than six albums by Ewert and The Two Dragons, to make sure that every auntie, cousin and granddaughter would be equipped with it. I can assure you that my mother is not the only one who believes that four such intelligent, pop-folk and bearded musicians in flannel shirts are exactly what best characterise Estonia, our culture and our ambitions.

If you happen to be on your way to Estonia whilst reading this article, do not forget to ask your hosts for this "compulsory present"! Should you still receive a bottle of Vana Tallinn liquor, do not worry – it is quite likely that soon you will be able to buy an album by Ewert and The Two Dragons at record stores in your own country.





# 60,000 People Visit The Estonian Mammoth

Text: **Rein Sikk**  
Photos: **Atko Januson**

**An old sports hall gets a new life as the Ice Age Centre**

## Ice Age Centre is situated 18 kilometres from Tartu on the shores of Lake Saadjärv in Äksi village

Ice Age Centre is a unique and original tourist attraction – a nature study and visiting centre that combines popular scientific approach to ice age with entertainment.

Ice Age Centre – more than 2200 square metres of exhibition area full of stories about ice ages on the background of world history and human beings in the wonderful changing nature.

The purpose of the exposition of the Ice Age Centre is to offer the visitors hands-on experience with:

- Origins of ice ages and their effect on the landform and biota of the earth, Estonia and Vooremaa on the background of a wider geochronological scale and evolution of the Universe
- Development of Estonian nature and human settlement after the last ice age
- Causes of and research on climate changes

**ICE AGE CENTRE IS  
OPEN EVERY DAY 11.00 - 18.00**

For further information see:  
[www.jaaag.ee](http://www.jaaag.ee)



It is spring 2012. In a small room somewhere in central Tallinn there is a ... mammoth. A newborn, although 10,000 years old. Looks like the real thing, just like in books or on the screen. Three and a half metres high, almost reaching the ceiling. The people circling it are the best in their field—animal reconstruction—in Estonia, known as Studio Viridis. Among them are biologists, zoologists and sculptors. They make stuffed animals and castings/mouldings. Visitors stare in disbelief – a mammoth!

The contract from the Ice Age Centre was a dream come true for Studio Viridis. The centre had requested thirty large and many more smaller animals and birds, starting with the mammoth and a cave lion, which will all be exhibited at the Ice Age Centre.

The location of the centre is equally amazing: a former dilapidated sports hall which has experienced a revival and today tells the story of Estonia 10,000 years ago and offers nature training for today's purposes. The exhibition space, which totals 2,200 square meters, is filled with tales of the Ice Age, against the backdrop of global history and of human beings inside the amazing story of the changes in nature. Visitors find out about animals and birds, and the impact of the Ice Age on Estonia back then and even today. The concerns about climate change link the exhibition to contemporary concerns.



Visitors say that it is a contemporary educational centre where, with the exception of mammoths and other exotic animals, you can touch, investigate and test everything. This is what probably led to the first problems after the opening of the exhibition: the computers and screens could not handle the storm of enthusiastic visitors. Environmental education has been combined with entertainment in this centre, resulting in unbelievably high visitor numbers. Within the four months that the Ice Age Centre has been open, about 60,000 people have visited it, exceeding the most optimistic prognosis.

“What people love most, of course, are the replicas of the animals of the Ice Age, from mammoths to ancient deer and cave lions,” explained the administrator of the Centre, Ulvi Selgis. A competition produced names for the mammoths. The female mammoth is called Voorika, based on Vooremaa, the general area where the Ice Age Centre is located. The son is called Äksel, after the village of Äksi, where the centre is situated.





# For the fifth year running, the fifty best Estonian restaurants have been selected. Life in Estonia put five questions to Aivar Hanson, the manager of the contest 'Flavours of Estonia'.

## Who selects the best restaurants in Estonia and why?

There are various ways to make the selection. The fifty best restaurants are collectively chosen by professionals in the restaurant business. Each participating restaurant nominates three key staff members as judges. The three people represent management, kitchen staff and waiting staff. Each voting member puts together a personal selection of top dining places in Estonia. Only those restaurants which have been selected in the top seven by someone receive votes. When no more new places are added, the votes are counted and the fifty restaurants which get the highest number of votes are chosen.

Why is such a ranking necessary? There are about 1,300 dining places in Estonia. If you are not willing to just eat anywhere, you have to take into account what people say. Competitors are always the toughest critics. So a restaurant which wins praise from competitors is definitely worth a try.

## What has changed in the five years of the competition?

Everything. In the early days and for many years there were only ten restaurants selected. When we started, the menus of the leading restaurants had practically no Estonian ingredients or dishes. Now the opposite is true.

## What is Estonian cuisine like? What are Estonian ingredients?

Estonia is such a small country that we cannot use only locally grown products. Therefore Estonian cuisine is only unique in the way the food is prepared. We have many influences from other cuisines which mixed together make our cuisine unique.

To put it briefly, Estonian food is everything we eat here and offer our guests. There is no need to be more complicated.

## How can someone find the right place to dine?

First you have to decide what you would like to eat and which type of place you want to visit. From then on things get easier. Compare different information sources, as all rankings and awards are subjective to an extent. But when you find a restaurant listed in various charts or find out that it has received several awards on the basis of different criteria, then you have a guarantee that it is a local top restaurant.

## Is good food available all over Estonia?

Because Estonia is so small we can say that indeed it is. You never have to drive over 100 kilometres from one good restaurant to the next. But, if we look at numbers, out of the total of 1,300 restaurants, I can recommend about a hundred.

Text: Aivar Hanson  
Photos: Lauri Laan

In this year's rankings, the restaurants are once again put in a single list. In alternate years, restaurants have been listed in terms of the best of a town or some other category. The importance of good food has grown so immensely that the limits of geography and categories have been broken down.

Can Chinese cuisine compete with Estonian? Can a bistro compete with a fancy restaurant? Yes, they can! And in fact they do, every day. The people who eat vote with their feet – the feet gladly take the mouth to one place but refuse to approach others.

The ranking proved to be more delicious than ever before. And it evoked much more emotion than before. Therefore it must be a good ranking.

**Bon appétit as you eat your way through this list! →**

The **50 BEST** Restaurants

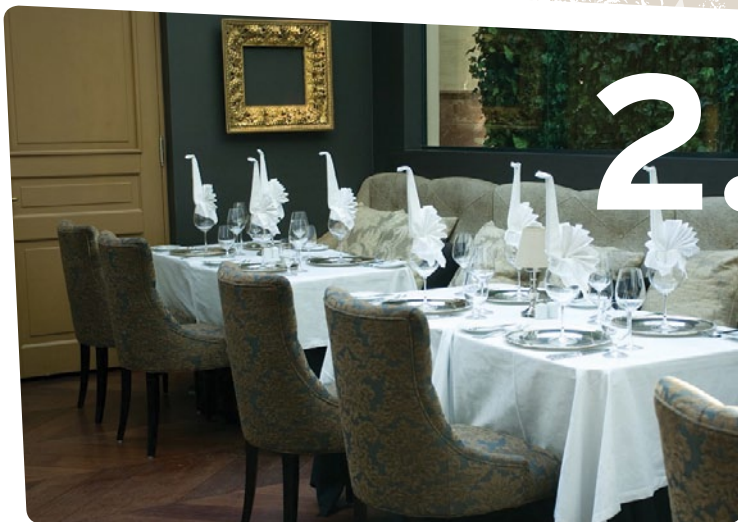
# Alexander - the best can always become better

In the five years that the ranking of best restaurants in Estonia has been compiled there have only been two winners. The highest place went to Muhu Island for the third year running. Boring?

Far from it. As the people giving their votes are the same, the development of a restaurant in a year matters. And the best one always has the least room for development.

Alexander has created a relatively narrow niche for itself: the cuisine of the Nordic islands. You cannot go far in this niche, but you can go deep. Alexander's ability to keep coming up with something new in this narrow field is simply amazing. That is what has brought them the title of the best restaurant for three years running. And this ability is showing no sign of waning.

Pädaste Manor, Muhu Island  
Phone: +372 454 8800 / info@padaste.ee  
[www.padaste.ee](http://www.padaste.ee)



# Tchaikovsky - in second place but not for long!

Tchaikovsky has persistently improved its ranking. However, last year's second place was not "upgraded" to first this year.

The jury had to decide which one of the two best restaurants had improved more during the year. It was not an easy decision to make. Tchaikovsky's standard has been unalterably high. Without this restaurant, Tallinn would not be a city of such good food as it is today.

Ranking restaurants is always subjective. The heart of a customer needs to be won each time he or she enters a restaurant. Tchaikovsky excels in doing just that.

Vene 9, Tallinn  
Phone: +372 600 0610  
tchaikovsky@telegraafhotel.com  
[www.telegraafhotel.com](http://www.telegraafhotel.com)





# OKO - serving joy

The high place that OKO gained in the ranking this year was very much expected. For some time now, the Old Town of Tallinn has not been the only location for good restaurants. An increasing number of restaurants are moving further and further away from the centre and closer to their ingredients.

So we would assume that in the case of OKO the fish comes from the nearby sea. But it does not. OKO grew rapidly and is now such a big business that the local fishermen are no longer able to cater to all its needs. But the nearby forest is happy to share its gifts.

Eat and enjoy life – this is the motto of OKO. And that is just what its customers are obediently doing. There can never be too many restaurants able to offer pure enjoyment.

Punase laterna 1, Kaberneeme Harbour

Phone: +372 609 8148

oko@okoresto.ee

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



# 3.



# Chedi - Tallinn's magnet

# 4.

Chedi is certainly one of the best-known Estonian restaurants abroad. The change that took place this year should further increase Chedi's international reputation and recognition. There is a new head chef. The kitchen of Chedi is now headed by Goh Wee Boon, who was a sous-chef at Hakkasan in London.

Chedi is a magnet that attracts fans of good food from near and far. Chedi is one of a kind. If you do not believe it, ask to be taken to the kitchen of Chedi. Preparing food the way they do it happens in only a few restaurants in the world.



Sulevimägi 1, Tallinn  
Phone: +372 6461676  
info@chedi.ee  
[www.chedi.ee](http://www.chedi.ee)



## Põhjaka - thoroughly good food

The Põhjaka people are thorough. Once they decide to do something, it gets done. Thoughtfully, purposefully, true to their principles.

Põhjaka is the flagship of local Estonian food. Being there is the easiest way of explaining the essence of Estonians to a visitor. If for some reason Põhjaka's contact with the surrounding world should be severed, they would carry on the way they always have. Home-made preserves are in the cellar, and the vegetable garden and chicken coop are right outside. The only thing left is to get some pigs and grow more potatoes. They will do that some day. When more pressing things have been attended to.

Mäeküla, Paide parish, Järva County  
Phone: +372 526 7795  
pohjaka@pohjaka.ee  
[www.pohjaka.ee](http://www.pohjaka.ee)



5.



6.

## Leib - the favourite child

Leib Resto & Aed is a bold name. Leib, or bread in Estonian, is the symbol of food for Estonians, and with this name one can either succeed or fail completely. There are no other options.

Leib has chosen to succeed. It has been crowded every day since its opening, no matter what time of day or what season. The food is made from local and seasonal ingredients. Its co-operation with farmers is something others can learn from. Its matching of food with drinks is in a class of its own. One of the owners of Leib, Kristjan Peäske, is the uncontested premier sommelier in Estonia.

Leib was the fastest-rising new restaurant in this year's ranking. Definitely our favourite child.

Uus 31, Tallinn  
Phone: +372 611 9026  
info@leibresto.ee  
[www.leibresto.ee](http://www.leibresto.ee)



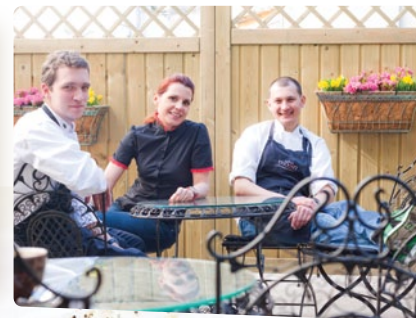
# Moon - may there be many

When Moon was opened, it was the first restaurant that served good food at low prices. The savings were achieved, firstly, through locating in a less expensive area. Secondly, much of the food preparation is done with the aid of machines (instead of by hand). Because it avoids the "artistic layout" of more expensive restaurants, and the ingredients are somewhat cheaper, their guests can afford to enjoy good food more often.

This created a snowball effect, and currently the competition in this segment is very strong. Differently from most restaurants, the people at Moon are happy to see their competitors doing well. For them, it is not important to be the best. For them, it is important that there are many good places to eat.

Their wish is slowly but surely coming true.

Võrgu 3, Tallinn  
Phone: +372 631 4575  
kohvik@kohvikmoon.ee  
[www.kohvikmoon.ee](http://www.kohvikmoon.ee)



# 7.



# 8.



# Neh - distinctively unique

Contrary to popular belief, Estonia is a large country. This was proven by men and women from our tiny Muhu Island, when they opened their own restaurant in Tallinn.

Before that, we used to talk about Estonian cuisine and its smallness. Then the islanders from Muhu came and started to serve food the way it was made on their island and the islands nearby. This food is clearly from the hinterlands, but quite different from, for example, the food of Setomaa in southern Estonia.

Their original food quickly became popular and Neh, initially intended as a seasonal restaurant, now serves food all year round. There is lots of room for food from different corners of Estonia. Come along!

Lootsi 4, Tallinn  
Phone: +372 602 2222  
info@neh.ee  
[www.neh.ee](http://www.neh.ee)





## Bordoo - a heart- breaker

The head chef of Bordoo, Tõnis Siigur, was recently awarded the Relais & Châteaux Rising Chef Trophy 2013. But unfortunately – or fortunately – not all trophies stay on the same shelf. In the final rating of the 50 top restaurants of Estonia Bordoo did not win the day.

It is highly probable that Bordoo is better than its ranking indicates. But in the restaurant business the race is always on for every guest's heart, starting from the moment that the restaurant door is first opened.

Bordoo has won an enviable number of hearts. Some were not impressed this year but there is time enough to win them over next year.

Pikk 71 / Tõlli 2, Tallinn  
Phone: +372 630 6300  
info@threesistershotel.com  
[www.threesistershotel.com](http://www.threesistershotel.com)



# 10.



## Ribe - like good wine

Ribe's fifth birthday has come quite unexpectedly. After five years a place usually needs a thorough makeover in order to remain successful. That is not the case with Ribe. Ribe continuously renews itself and has remained in good shape.

Vene Street in Tallinn is also called the street of restaurants. It includes competing restaurants that suit every taste. The best restaurants on this street are certainly among the best restaurants in Estonia. Ribe is the second one on the street.

Despite its order in the rankings, the fact is that Ribe has improved with each passing year. Just like good wine.

Vene 7, Tallinn  
Phone: +372 631 3084  
info@ribe.ee  
[www.ribe.ee](http://www.ribe.ee)



# 9.

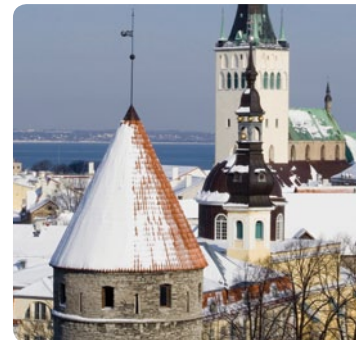




# Estonia in brief

<b>Official name:</b>	Republic of Estonia
<b>State order:</b>	Parliamentary republic
<b>Area:</b>	45,227 sq kilometres (17,500 sq miles)
<b>Population:</b>	1,294,236 inhabitants: 67.9% Estonians, 25.6% Russians and 6.5% others
<b>Population density:</b>	28.6 people per square kilometre. Over 70% reside in urban centres
<b>Capital:</b>	Tallinn with 392,331 inhabitants (as of 2011)
<b>Other major towns:</b>	Tartu (98,514), Narva (65,706), Pärnu (44,437), Kohtla-Järve (41,992)
<b>Administrative divisions:</b>	15 counties ( <i>maakond</i> ), divided further into 226 local municipalities, incl 33 towns and 193 rural municipalities ( <i>vald</i> )
<b>Islands:</b>	1521, the biggest being Saaremaa 2,671 sq km, Hiiumaa 989 sq km, and Muhu 198 sq km
<b>Biggest lakes:</b>	Lake Peipsi 3,555 square km (1,529 sq km belong to Estonia), Lake Võrtsjärv 271 square km
<b>Longest rivers:</b>	the Võhandu River 162 km, the Pärnu River 144 km, and the Põltsamaa River 135 km
<b>Highest point:</b>	Suur Munamägi (Great Egg Hill) 318 m
<b>Air temperature:</b>	annual average +7°C; January -3.5°C, July +20.3°C (2011)
<b>Official language:</b>	Estonian, a member of the Finno-Ugric group. Russian is widely spoken. Many Estonians speak English, German, and Finnish
<b>Alphabet:</b>	Latin
<b>Religion:</b>	Predominantly Protestant (Lutheran)
<b>Currency:</b>	euro (EUR)
<b>Average salary (1<sup>st</sup> quarter of 2012):</b>	792 EUR
<b>Driving:</b>	Right hand side of the road. Speed limits in town 50 km/h, out of town 90 km/h. International driving licence required
<b>Weights and measures:</b>	Metric system
<b>Electricity:</b>	220 volts, 50 Hz
<b>Country calling code:</b>	372
<b>National flag:</b>	Blue-black-and-white
<b>National holiday:</b>	24 February (Independence Day)
<b>National anthem:</b>	<i>Mu isamaa, mu õnn ja rõõm</i> (My fatherland, my joy and happiness)
<b>National flower:</b>	Cornflower ( <i>Centaurea cyanus</i> )
<b>National bird:</b>	Chimney swallow ( <i>Hirundo rustica</i> )

Member of EU, NATO, OECD, WTO, Schengen area



# Practical information for visitors



For more travel details, please consult the sources below: [www.visitestonia.com](http://www.visitestonia.com) (Estonian Tourist Board), [www.riik.ee/en](http://www.riik.ee/en). Tourist information centres are located in all larger towns.

The Tallinn Tourist Information Centre in the Old Town is located at 4 Kullassepa Street - no more than 10 steps from the Town Hall Square (ph.: + 372 645 7777, e-mail: [turismiinfo@tallinnlv.ee](mailto:turismiinfo@tallinnlv.ee)). The Tallinn Tourist Information Centre in Viru Keskus (ph: + 372 610 1557, 610 1558), open every day 9 am - 9 pm, is located in the centre of the city. A wide selection of maps, brochures and publications in several languages (largest selection in English) can be found at local bookstores and tourist information centres.

## Visa

As of 21 December 2007, Estonia is a part of the Schengen visa area.

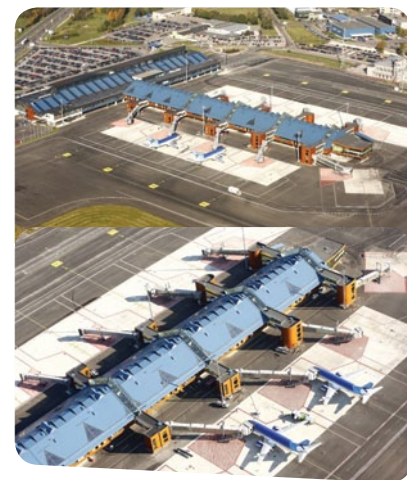
Nationals of EU and EEA member states are free to enter Estonia. The required travel document for entry is a national ID card or passport. Nationals of the following countries do not need visa to enter Estonia, and can stay for up to 90 days in any 6-month period: Andorra, Argentina, Australia, Brazil, Brunei, Canada, Chile, Costa Rica, Croatia, El Salvador, Guatemala, Holy See, Honduras, Hong Kong, Israel, Japan, Macao, Malaysia, Mexico, Monaco, New Zealand, Nicaragua, Panama, Paraguay,

San Marino, Singapore, South Korea, USA, Uruguay, Venezuela. The required travel document for entry is a valid passport.

Citizens of countries not mentioned above require a visa to enter Estonia. Visitors arriving in Estonia with visa must have national passports valid at least 3 months after their planned departure from Estonia.

Children aged 7 to 15 years must have their own passport when travelling to Estonia or, if they are registered in their parent's passport, must have their photo next to the name. Children under 7 years need not have a photo if they are registered in their parents' passports. Persons above 15 years must have a separate travel document with photo.

For detailed information on visa requirements and entry rules, please consult the Ministry of Foreign Affairs website at [www.vm.ee/eng](http://www.vm.ee/eng).



## Arrival

**By plane:** Recently renovated, the Tallinn Lennart Meri Airport, just 3 km from the city centre, is welcoming, modern and user-friendly. Among other amenities, travellers have access to a free WiFi area in the transit zone. The airport's 24-hour customer service telephone is +372 6058 888.

Tartu Airport is situated at Ülenurme, near Tartu. Flights from Tartu to Helsinki depart six times a week.

Regional airports are located in Kuressaare (Saaremaa), Kärdla (Hiiumaa), and Pärnu; these provide no regular international connections.

**By ship:** With over 6 million passengers annually, the Port of Tallinn is undoubtedly Estonia's main gateway. Large passenger ferries arrive from and depart for Helsinki and Stockholm regularly. The 85-km Tallinn-Helsinki line is served by ferries that make the journey in 2 hours; hydrofoils and catamarans make the trip on 1.5 hours and operate between April to November-December, depending on weather conditions. Travellers should note that different ferry lines depart from different terminals and harbours. The City Port with its four terminals is a 10-15 minute walk from Tallinn Old Town; the Paldiski-Kapellskär line uses the Port of Paldiski, about 50 km from Tallinn.

**By car:** Border checkpoints greet travellers entering or departing the country by way of the Estonian-Latvian border points at Ikla (the Tallinn-Riga highway) and Valga, as well as on the Estonian-Russian border at Narva (the Tallinn-St. Petersburg highway), Luhamaa, Koidula and Murati. On the Estonian-Russian border, all traffic is subject to border formalities both when entering and leaving Estonia.

**By bus:** Not only is travel by bus the fastest and most convenient mode of international public transportation in the Baltic states, it also offers excellent value for your money. Regular connections service all major cities in the Baltic countries and St. Petersburg. Eurolines Lux Express and Hansabuss offer comfortable Riga Airport transfers from Tallinn, Pärnu, Klaipeda, Vilnius, Panevezys, and Šiauliai. Prices start from €20.00. A useful tip: Regular passenger buses have priority at the border checkpoints, so travel is smooth.

**By train:** There is only one international overnight train to Moscow.

## Customs

We suggest travellers consult with the Estonian Customs Board help desk (ph.: +372 880 0814 or [www.customs.ee](http://www.customs.ee)) for details. The limit on import of alcoholic beverages from outside the EU is one litre for beverages over 22% alcohol content, and two litres for beverages up to 22%, and four litres for wine. Import of tobacco and tobacco products from non-EU countries is limited to 40 cigarettes or 100 cigarillos or 50 cigars or 50 g of tobacco products. Counterfeit goods, including pirated CDs, video and audio tapes, are prohibited by law. A special export permit is required for specimens of plants and animals of endangered species, protected species and hunting trophies (please contact the Nature Conservation Department, Ministry of the Environment for details). Articles of cultural value produced in Estonia more than 50 years ago also require special permits (please contact the National Heritage Board).

minutes, to Pärnu every hour. On weekdays, seats to these destinations are almost always available even immediately before departure (watch out for special events). For weekend travel or trips to more remote locations with fewer connections, it is advisable to buy tickets in advance. The Tallinn Bus Terminal is located at Lastekodu 46. The timetable is also available online at [www.bussireisid.ee](http://www.bussireisid.ee) and ticket information is available at telephone +372 6800 900.

### Travelling by car

Travellers hoping to see more of the country and the rural areas it would be best advised to travel by car. The roads are quite good and traffic is light. Crossing Estonia from north to south or west to east by car takes approximately three to four hours. All major car rental agencies have offices in Tallinn. It is also possible to rent the car in Estonia and drop it off at a rental agency in Latvia or Lithuania, or vice versa. The speed limit in rural areas is 90 km/h and in cities 50 km/h. In some areas the highway speed limit is increased during the summer months. Headlights and seatbelts (front and back) must be on at all times. Driving under the influence of alcohol or other intoxicating substances is punishable by law.

arrive. All taxi drivers must give you a receipt (in Estonian, ask for "Kviitung, palun"). Locals usually give the exact fare and no tip. As in most major cities, some dishonest drivers attempt to overcharge unsuspecting passengers. If in doubt, note the taxi company and license plate number.

**Public transportation:** Tallinn has a public transport network of buses, trams and trolley-buses. Other Estonian towns have buses. Schedules are posted at bus stops. Tickets are available at newsstands (the yellow and blue "R-kiosks") and from the driver. Check the prices and timetable for Tallinn bus lines for any bus stop at [www.tallinn.ee/eng](http://www.tallinn.ee/eng).



## Getting Around Estonia

### Inter-city public transportation

Public buses are the easiest, cheapest and most convenient solution for visiting Tartu, Pärnu or any other of the larger towns. Buses from Tallinn to Tartu depart every 15-30



### Local transport

**Taxis:** Taxis must clearly display their fares, driver's taxi service licenses, and a meter. The initial charge for entering a cab ranges from 2 to 3.5 euros. Different taxi companies have different rates, but the average charge per kilometre is 0.5 euros. There is no additional charge for ordering the taxi by phone, and it usually takes the cab just five to ten minutes to



## Accommodations

All major hotels in Tallinn have been newly built or completely renovated in recent years. Despite annual additions to the number of hotels and rooms, it can nonetheless be difficult to find a hotel room on short notice (particularly over the week-end). For the best selection, we urge visitors to Tallinn and the rest of Estonia to book hotel rooms in advance. For more details, see the Estonian Tourist Board website at [www.visitestonia.ee](http://www.visitestonia.ee).

## Money

On 1 Jan 2011, Estonia adopted euro as its currency thus replacing the Estonian kroon which had been the only valid currency in Estonia since 1992.

Most larger hotels, stores and restaurants accept Visa, MasterCard, Eurocard, Diner's Club and American Express. However, it is advisable to carry some cash with you.

Traveller's checks can be exchanged in most banks but are less likely to be accepted in shops. Eurocheque is the most widely accepted traveller's check, but American Express and Thomas Cook are also accepted. Banks are plentiful and easy to find in Tallinn. Most are open from 9:00 to 18:00 on weekdays, while some offices are also open on Saturday mornings. All banks offer currency exchange services. Exchange offices can also be found in larger hotels, the airport, harbour, railroad station and major shopping centres. ATMs are conveniently located around town; instructions are in English, Russian and Estonian.



## Telephones and Internet

The country code of Estonia is 372. Dial 00 for outbound international calls.

The GSM mobile phone system is available; please check compatibility with your operator. Public Internet access points have been set up all over Estonia. They are located in local

libraries and post offices. There are over 100 wireless free Internet zones around the country, many of them in rather unexpected places - beaches, Old Town squares, stadiums, and concert halls.

## Emergencies

112 is the emergency number for ambulance, police and fire department. The police can also be reached directly at 110. Emergency numbers can be dialled free of charge. Select pharmacies are open 24-hours-a-day in many major towns. The one in Tallinn is located at 10 Pärnu Road (opposite the Estonian Drama Theatre); the one in Tartu is located in the Town Hall building (Town Hall Square).



## National Holidays

Estonians celebrate January 1 as New Year's Day, a rather slow and quiet day as people recover from the festivities. Shops open late and banks are closed. February 24, Independence Day, is celebrated with a parade of the Estonian Defence Forces at Vabaduse väljak (Freedom Square). May 1 is a bank holiday, similar to Good Friday and May Day. June 23 is the biggest holiday of the year as Estonians celebrate Midsummer Eve and the Victory Day in commemoration of the 1919 Battle of Võnnu, and June 24 is St. John's Day (Midsummer). August 20 is the Day of Restoration of Independence (1991). December 24 (Christmas Eve), December 25 (Christmas Day) and December 26 (Boxing Day) are usually spent at home with families.



## Food

Traditional Estonian cuisine consists of simple peasant food, such as cottage cheese, potatoes and bread, all of which are still important components of the local diet. The Estonian dark bread is the main staple missed by Estonians abroad. Typical Estonian dishes do not feature prominently on restaurant menus, and traditional home cooking is more likely to appear at small eateries in remote areas. Still, a few establishments have made Estonian specialities their niche; to sample Estonian cuisine, try the Vanaema juures, Kaerajaan and Kolu Tavern (Open Air Museum) in Tallinn, and the highly recommended Muhu Kalakohvik and Lümända söögimaja on the Island of Saaremaa.

The list of the top 50 Estonian restaurants can be found at [www.flavoursofestonia.com](http://www.flavoursofestonia.com)







## Drinks

The main drinks in Estonia are beer, wine and vodka. While many young city residents opt for beer or wine, the older generation and rural folk tend to prefer vodka. In the 1930s Estonian vodka made it into the Guinness Book of Records as the strongest vodka in the world (96%). Local brands of beer enjoy a very strong market position in Estonia. The two main breweries are Saku and A. Le Coq. Saku is Tallinn-based, and its corporate colour is navy blue while A. Le Coq is brewed in Tartu and its colour is red. There are also many smaller breweries. A full list of Estonian beers is posted at [www.BeerGuide.ee](http://www.BeerGuide.ee)



Spirits also include some traditional liqueurs. The famous Vana Tallinn (Old Tallinn) has a 45° alcohol content, and is coincidentally made from 45 ingredients - the recipe is known only to a handful of people. Indeed, the legendary

19th-century *kristallkummel* (caraway liqueur) has made its long-awaited comeback.

Estonian wines, made from currants or other local berries, are rather sweet. Wine lovers

Even the most sceptical museum-goer is bound to find something intriguing in Estonia's large selection of museums, which feature everything from history, art, photography to toys, chocolate, musical instruments, even wax fig-



usually prefer imported wine, of which there is an ever-increasing selection at stores and vinoteks. A very popular and refreshing non-alcoholic drink is *kali*, made of bread, malt, rye or oats flour and yeast; it has a characteristically dark brown colour. It was with this drink that the Estonians forced the Coca-Cola company into submission, or at least into a business deal. *Kali* was enjoying phenomenal sales, while Coke was not selling up to expectations. It was then that Coca-Cola decided to broaden its horizons by buying one of the local *kali* trademarks in order to make a profit on the stubborn Estonians.



## Entertainment

The entertainment scene in Estonia is vibrant year-round, providing visitors and locals alike with a long list to choose from. Concerts, festivals theatre, street raves, DJ competitions – Estonia has it all. It is not by chance that both Tallinn and Tartu have their own opera and ballet theatre. Tickets are an excellent value for the money; concert tickets cost around 10 euros, and best seats at the opera are yours for about 25 euros. For more information on the concert schedule see [www.concert.ee](http://www.concert.ee); the programme for the national opera is posted at [www.opera.ee](http://www.opera.ee). Tickets can be bought at the box offices or via ticket agencies located in all larger supermarkets, or via Internet ([www.piletilevi.ee](http://www.piletilevi.ee))

ures and many other topics. Most museums are closed on Tuesdays and many on Mondays as well. It is advisable to have cash on hand as many museums do not accept credit cards. Tallinn is also bustling well into the night with booming and blooming club scene. Clubs are usually open and packed with energised vibes from Thursday to Sunday, with Friday and Saturday drawing the liveliest of crowds. In addition to local and resident DJs, clubs frequently present guest performers from London, the US and other club hubs. For those looking for a more mellow night on the town, Tallinn's street are brimming with pubs, vinoteks and bar-restaurants, many of which offer live music even on weekdays. Rather take in a movie? Films in cinemas are shown in the original language with subtitles.



## Shops

Souvenir shops in Tallinn and most other tourist locations are open seven days a week, 10:00-18:00 or 19:00. Big supermarkets and hypermarkets are open seven days a week from 9:00-21:00 or 10:00-22:00. Department stores close a few hours earlier on Sundays or, in smaller towns, may be closed on Sundays. Smaller food shops may have shorter opening hours. Some 24-hour shops can be found as well. Other shops usually open at 9:00 or 10:00 and close at 18:00 or 19:00; they often close early on Saturdays and are closed on Sundays. The majority of shops accept credit cards, with the exception of smaller stores and stores in rural areas.



## Souvenirs

Souvenir and shopping preferences vary hugely but there are certain souvenir gifts that have gladdened many a heart. Estonian handicraft comes in many forms. There are woollen

sweaters and mittens with local ethnic patterns, linen sheets and tablecloths, crocheted shawls and veils, colourful woven rugs, hand-made jewellery and glassware, baskets, and an array of wooden spoons and butterknives made from juniper. Fine and applied art for show and purchase is on display at art galleries around the country, featuring graphics, glass, ceramics, hand-painted silk scarves and leatherwork. Various herbal teas from wild plants are available at pharmacies. Local honey – pure or flavoured, e.g. ginger, is another delicious treat. In rural areas, you may find hand-milled flour. And those who keep coming back swear by the Estonian black rye bread. To bring home local spirits, popular choices include Vana Tallinn or *kristalkümmel* liqueur or local beer. And there is no place better than Estonia to buy Estonian music.

## Crime

Although common sense is advisable in all destinations, Estonia gives no particular reason to be excessively worried. Do not walk the unlit and abandoned areas alone at night. Do not leave bags or items of value in the car, as not to tempt car thieves or robbers. Pickpockets may operate at crowded tourist destinations in Tallinn, so make sure your wallet and documents are stored safely.

## Language

Estonian is not widely spoken in the world, so Estonians do not expect short-term visitors to master the local language. Still, local people are thrilled and pleased to hear a foreigner say "Tere!" (Hi!) or "Aitäh" (Thank you) in Estonian. Knowledge of foreign languages is naturally a must for hotel staff and numerous other professions in the service sector. Many people are fluent in English, particularly the younger urban generation, and a great number of people also speak Finnish, due to Finnish TV, Finland's close proximity to Estonia and the great number of Finnish tourists. German is less widely spoken in Estonia, although previous generations have often studied German, not English, at school. Russian-language use has dropped to a point where older people no longer speak the language well and the younger generation have already chosen other languages to learn at school. Studying French has become more popular over the last few years but the number of people who speak French is still quite small.

An English-Estonian dictionary is available online at [www.ibs.ee/dict](http://www.ibs.ee/dict).

## Estonians

Estonians are typical Nordic people – they are reserved, not too talkative and speak rather monotonously, with very little intonation. All this may give one the impression of coldness bordering on rudeness. But rest assured, this is not the case, and the speaker may actually be extremely well-meaning, even excited. There are several well-known Estonian sayings, such as "Think first, then speak", "Weigh everything carefully nine times before making a move", and "Talking is silver, silence is gold". It is, therefore, no wonder that the people are not very good at small talk, do not waste too much time on grand introductions, and usually come straight to the point. This is why Estonians' English may sometimes sound shockingly direct. There is, however, often a subtle irony involved in Estonians' utterances - delivered with a serious face and just the slightest twinkle of the eye.



Estonians are relatively individualistic. There is a saying that five Estonians mean six parties. Even though people agree on the final objective, they insist on reaching it in their own ways. Estonians also value their privacy. In the old days, it was said that the neighbour's house was close enough if you could see the smoke from the chimney. Modern, tight-packed urbanites flock to remote countryside on the weekends to enjoy more space and privacy.

Even though guests at birthday parties and concerts are rather quiet and subdued in the onset, they warm up eventually and turn into a direct opposite of their day-character, as you are likely to see in Tallinn's clubs.





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