

ESTONIAN DEVELOPMENT FUND'S ANNUAL REPORT TO THE PARLIAMENT 2010



2018

GLOBALLY COMPETITIVE
 LOCALLY ATTRACTIVE

CEO's address

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Growth Vision



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CEO's address

“Successful businesses and countries are alert and strategically agile”, so said Mikko Kosonen, long-time Strategy Director at Nokia, now President of the Finnish Innovation Fund Sitra, when he spoke at the Estonian Development Fund's Futures Forum in spring. While agility on its own means reacting quickly and adapting, strategic agility refers to the ability of an organisation or country to influence its future – to be the master of its own future.



Leaving aside the discussions about the causes of the crisis and potential solutions, the recent World Economic Forum's Global Competitiveness Report shows that when it comes to the European Union new member states, Estonia has reclaimed the leader's jersey it had lost the year before. This has happened mainly due to improvements in one of the basic competitiveness factors – macroeconomic stability. Unfortunately, the price paid in the backdrop to the crisis is that we have dropped out of the group of innovation-driven economies. We have lost positions in all top-league factors such as business sophistication, technology and innovation, and also in basic factors like infrastructure. Regrettably we have also paid the price as a society and many forward-looking and gifted people would rather apply themselves abroad.

All this shows that our simplistic “Southern Finland” economic model marking an economy that is focused on serving Scandinavia, is not changing. We also have to operate under capital conditions that are narrower than we are used to, with a shortage of talent and with high unemployment. It is clear that in these circumstances simply keeping costs and earnings in balance and tweaking the current situation slightly will not be enough to create a new enduring success story. Neither do our solutions lie in implementing single measures like tax adjustments, adding funding schemes or subsidizing a couple of airlines.

Let us ask ourselves like our Northern neighbours did – what will be the sources of Estonia's vitality? How can we awaken the positive energy, which was so commonplace in the 90s? How can we reduce the scepticism, cynicism and passivity that have become so characteristic to our people? We need fewer conservative followers and more progressive leaders – those who are willing to take responsibility and show initiative. We must awaken this energy and the entrepreneurial spirit in our people, our society, and mobilize them to achieve commonly shared goals in the name of a new and more sustainable success. These energy reserves can be opened up only by the leaders of our society, both of today and of future as changing times call for new energy!

What topics will be discussed in this report?

About the Estonian Growth Vision 2018. As promised, at the beginning of 2010 we kick started the process of Estonia's Growth Vision by trying to identify what would make Estonia globally competitive and locally attractive by 2018. For the results to speak to the people

of Estonia and to ensure that the existing paradigms are aligned, we have approached this task systematically and in a comprehensive manner. Experts and visionaries have analyzed the development trends in the world and here at home, and have come up with four possible scenarios for the development of the Estonian economy, and established a set of key vision choices that affect our future most. About 200 of Estonia's current and future opinion leaders have been involved in, together with Global Business Network – a company that is the world leader in scenario and strategy consulting. Expert groups comprising top Estonian thought leaders have come together to elaborate the key vision choices in order to identify the most influential steps towards the desired changes.

To ensure that the vision discussion does not remain centred around the capital of Estonia and our today's decision-makers, we organized vision days in 15 counties and a youth vision forum at the end of 2010. The whole process culminated with Estonian Futures Forum in December. The Growth Vision process is explained in more detail in the report by Kitty Kubo, Head of the Foresight Division at the Estonian Development Fund.

About new growth areas for economy. One of the tasks of the Development Fund defined by the law is to identify new trajectories of growth for our economy. We are certainly not talking about one or two winning sectors, but rather a whole portfolio of growing business areas. Previously, we have shown growth opportunities through the better application of information technology and opened up potential futures for the manufacturing industry. In this report you will find additional growth opportunities – the focus is on export opportunities in financial services and healthcare.

About new capital. The restructuring of the economy desperately needs capital – foreign investments as a source of new economy and venture capital cultivating ambitious new business start-ups. Availability of capital is a huge challenge right across Europe because the state's financial support packages and the national support programmes during the crisis went to traditional sectors and activities of the economy often just to preserve the status quo. Economy Expert, Heido Vitsur along with the Head of the Investment Division, Heidi Kakko, and Kitty Kubo will discuss the challenges related to capital in further detail.

About education. A world-class economy requires world-class education – that is a fact. It is also true that the drought that is obvious in Estonia when it comes to engineers is a problem that has not been resolved despite having been acknowledged for years. In this report, Üllar Jaaksoo, Project Director of the IT Academy, presents a holistic model for resolving the lack of skilled workforce in the field of information and communication technologies. Kristjan Rebane, an Information Society Expert, writes on how to use the computers in schools to solve the challenges that education faces based on the recently published roadmap report "IT + Education".

About governance. Complex challenges ahead and the need to systematically develop new areas of economic growth require the state to adopt a different approach to governance and to adopt a new paradigm of economic policy – economy expert Siim Sikkut writes on this topic. Such a new approach requires leadership and the ability to act quickly, cross-sectoral policies, targeted and trustworthy partnership between private and public sectors, proactive foreign economic policy and continuous ability to benchmark and improve one's position in comparison with the competitor countries. These are complicated tasks and as such they require preparation at a new level from our public sector leaders – politicians and high-level officials.

I trust these articles will not only be an enjoyable read, but also challenge your thinking and inspire action.

Ott Pärna

Let's Dream Estonia Successful!

Raivo Vare, Chairman of the Supervisory Board, Estonian Development Fund

One man once said: "I have a dream...". This dream shaped the development of the whole world in the 1960's and 70's. We should also dream - and act to make our dreams come true. At least I dream.



I dream of a society characterized by a high quality of life, openness and well-grounded national pride, a well-organised society with a rich and unique cultural life, where co-operation and competition are balanced and interactive, both in social as well as economic life. I dream of a country with a clean nature and healthy environment, of a country that by these qualities is the best in the Baltic Sea region, which in itself is at the global forefront. I dream of an Estonia that is an inspiring place to live and work and that tolerates differences and positive ambition.

Unfortunately, during the past years many discussions and reports have managed to leave us the sad impression that in a way Estonia has lost part of its former dynamism and competitiveness - the impression that Estonia has become more rigid and closed.

To reawaken, our society needs to be more open and ready to renew itself; our priorities have to be clearly defined and applied, and changes in the global business environment have to be taken into account.

Therefore, we need answers to key questions: how well can Estonia adapt to the global economic environment and how can we increase the readiness of Estonian society and prepare different strata of the population for new efforts in order to achieve premier league economic and human development. All this irrespective of adopting the Euro - which in itself is a good precondition, but not a "silver bullet" that would solve our problems.

Either way Estonia faces a choice - whether to muddle through the crisis over 4 or 5 years, or to do it faster and as a result become stronger and more competitive as well. If we just declare that the economic model we have used so far has been successful and therefore we do not need

to change anything, there is also no reason to hope we are going to improve our living standards quickly. However, if we choose another way, we need to be proactive and target-oriented, both at the level of economic actors as well as the state, and rely on the vision of what we want to achieve in the next phase, that is, ten years from now.

Anyone who has passed a strategic leadership course, knows that the strategies of an organization are based on a shared vision of what it wants to achieve and why. The development vision of the Estonian economy should reflect how to make our economy more competitive in the new, rapidly changing global economic environment, yet without losing its local attraction. This combination should give us hope for the sustainable growth of the wellbeing of our society so that we could become one of the successful countries.

What are our aims and dreams? Which values do we want to build our society on? What are our foreign relations and policies? What are our aims in the fields of education, social welfare, immigration, the environment and so on? As we can see these questions are not at all purely economic, but rather they are fundamental choices concerning human resources, quality of life and society as a whole. The process of creating a vision should also help us to develop the common set of concepts as well as the shared effective basis for discussing and analyzing the complicated and difficult choices necessary for developing a long-term vision.

There are many debates ahead, but everybody will definitely benefit from them if we formulate those matters together. I have to point out that there are many possible options for achieving these goals and dreams, which means there also exist various potential policies and methods of implementing them.

The process of Estonia's Growth Vision, which the Estonian Development Fund initiated, does not just aim to come up with a new document, but to give key people and institutions an opportunity to commence a strategic discussion about the future of the Estonian economy without the constraints of the current crisis. At the same time, it aims to encourage people free of the limitations of everyday life and experience, to consider in greater depth exactly where the Estonian economy can develop under the new global conditions.

The process of developing the Estonian Growth Vision 2018, based on several foresight studies, builds upon the futures perception of leading visionaries and the knowledge of the range of experts involved. A wider public discussion of the Growth Vision was launched at the Futures Forum, which took place on 6 May. Let's hope that the election campaigns, which have already started, do not hinder this valuable debate because Estonia badly needs this discussion about the key future challenges.

In the Estonia of my dreams, success is not measured by wealth, achievement or position, but rather by self-realization and wisdom. Tolerance and self-confidence - in a good way - dominate society. There is no laziness of mind or self-admiration. Under intelligent leadership, targeted and strategic structural reorganization of the economy takes place in order to prudently adapt it to the challenges of an ever-changing world. Politics is a true mission and honourable activity in Estonia. The only purpose of decision-makers and heads of political parties is to find the best route to a vision of a successful society and economy. The smallness of our country, traditionally deemed its weakness, has become its strength in every sense of the word.

We cannot achieve this dream society by scurrying about and just trying to fit in. Achieving this is only possible through purposeful systematic activity and only if we can dream. Dream big. Are you ready to dream Estonia successful? At least give it a try!

The Core of the Growth Vision: Agreeing on the Future Options

Kitty Kubo, Head of Foresight Division, Estonian Development Fund

A year ago we invited the *Riigikogu* (Parliament of Estonia) to create an Estonian Growth Vision – a new success story that would embody our aspirations for the future based on our collective sense of the future. A story that people both inside and outside Estonia would believe so much that they would want to take part.

Entrepreneurs, academics and politicians have to reevaluate their current activities in order to bring about changes in the Estonian economy. Enterprises have to change their position in the value chain; entrepreneurs have to start businesses in the new growth areas; educators have to create the basis for learning new skills and government has to establish the correct mechanisms to bring forth new behaviour. All this cannot happen without a clear vision, uniting the different players, providing direction to our activities and a choice of priorities.

The essential question in this inspiring new vision therefore is – what will make Estonia globally competitive and locally attractive in 2018?

We cannot create a successful vision sitting in an ivory tower or writing ever new documents in a quiet office building. This would only result in something that, regardless of quality, does not “speak” broadly to society, and therefore it would be sentenced at best to gather dust on a shelf. Instead, in order to find the answers to important questions we should be pursuing a “strategic discussion”, where decision-makers from today and tomorrow participate.

We have led the growth vision process exactly in such a manner, and today more than a few hundred opinion leaders have joined our expert groups and discussions focusing on Estonia’s future. The process of creating a growth vision is iterative: analysis alternates with discussion, discourse in smaller expert groups interchanges with debates in wider circles that attract larger numbers of decision-makers and followers.

So far Estonia has achieved important victories – we can be proud of the right decisions and accomplishments of the past. Unfortunately, we cannot advance only with the help of the rear-view mirror, we need to look into the future and respond accordingly. The development issues in our economy and society as well as the challenges presented by the surrounding world, which are changing ever more quickly, demand strategic agility and solutions that are more complex than those we have found so far. That is exactly why we need to throw the gauntlet down before the current paradigm. Borrowing the succinct words of Albert Einstein: “We cannot solve problems by using the same kind of thinking we used when we created them”.

To achieve a growth vision that corresponds to the developing reality, and in order to prepare ourselves for the future, it is important to explore all chains of thought and discussions.



The essential question in this inspiring vision: what will make Estonia globally competitive and locally attractive in 2018?

We need to start by dreaming and looking beyond the horizon of our daily activities, to free ourselves from the wing-clipping thoughts of the present or the limiting roots of the past. This is why, when setting out to create a vision, it is important to step aside and look at things from a distance – to look at Estonia from the world’s perspective. If we do that, we are able to see ourselves as part of the world, not as independent from it as we sometimes tend to believe. As a small country we are inevitably dependent on what goes on around us, and therefore it is important to work through potential future scenarios to identify inherent opportunities and potential dangers early on.

A glimpse behind the curtains of the visioning process

Considering all that, the work of creating a growth vision began by studying past and likely future developments in the world. In expert circles and with the help of the internationally recognized strategy consultants, *Global Business Network*, we have tried to map the most important potential developments in our surrounding environment and to identify how these might affect our future prospects.

But as the future is a moving target and no projection based on past developments can lead us to it, it is difficult to predict exactly what is going to happen. Nevertheless it is possible and reasonable in this situation to prepare ourselves for several different and alternative futures. This is why we used scenario planning (see the figure) for the visioning process – to add clarity to the complex issues of the world and to envision the possible fate of the Estonian economy in the form of credible and realistic stories about the future.

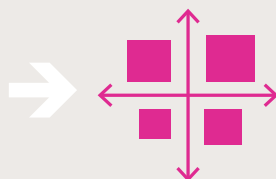
Scenario planning wasn’t a goal in itself, but it was an important visioning tool. Regardless of how things will turn out in reality the scenarios point to decisive moments for achieving a successful future – or if the future is negative, then at least to minimise our losses. Scenario planning therefore forms the basis for defining common targets and aims that in turn form the core of the Estonian growth vision. These targets can be defined as key goals and aspirations, or as growth vision choices (see figure). Each choice refers to a different approach and we have to place ourselves between each of them with the options we have. The aim of the vision is to agree on those options.

Journey towards the Growth Vision

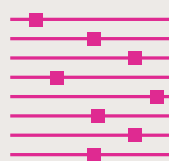
GLOBALLY COMPETITIVE – LOCALLY ATTRACTIVE



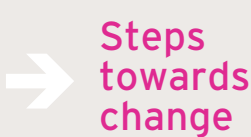
Learning the future environment: spotting and analysing global, regional and local trends and drivers affecting the development of the Estonian economy.



Envisioning the alternate futures for the Estonian economy: deriving critical uncertainties and drafting a set of divergent and plausible scenarios.



Identifying the key vision choices: deducing common themes and implications from the different scenarios.



Steps towards change

Preparing for change: defining the steps towards change and creating alignment of policies.

Source: Estonian Development Fund 2010

Key vision choices of Estonian Growth Vision 2018

| | | | |
|---------------------------------|---|--------|---|
| VALUE SYSTEM | Closed and competitive | ←————→ | Open and cooperative |
| NATURE OF ECONOMIC POLICY | Maintaining favourable general business environment | ←————→ | Focused and spearheading changes |
| FOREIGN POLICY APPROACH | Passively aligning with NATO/EU agenda | ←————→ | Actively promoting Estonia's economic interests |
| GREEN ECONOMY | Fragmented | ←————→ | Focused and international |
| ACCESS TO QUALITY EDUCATION | Selective | ←————→ | Broad |
| ENVIRONMENT FOR FOREIGN TALENTS | Generally protective | ←————→ | Open and attracting |
| THE GOAL OF SOCIAL SYSTEM | Correcting mistakes | ←————→ | Enhancing development |
| MODE OF GOVERNANCE | Administrative and reactive | ←————→ | Forward-looking and proactive |

Source: Estonian Development Fund 2010

While shaping the growth vision, Estonia's best experts, thinkers and decision-makers have come up with eight key goals and aspirations (see figure). All of these are underlined by the desire (that already revealed itself while working with the scenarios) for a more active and energetic country. That means we don't want to be led by the world, we want to direct our own development.

The essence, future aims and necessary key goals and aspirations of the Estonian growth vision were first presented to the wider public at Futures Forum organized by the Estonian Development Fund on 6 May 2010. Now in the autumn, expert groups are starting to work on this foundation. They will draft a preliminary vision by working through each key goal in a detailed manner and specifying the extent of the changes each of them require. In addition, the expert groups will also suggest the most important measures to produce the desired changes in each case. Therefore, we will have created an integral growth vision by the end of the year that will be ready to present and discuss in several forums concerning Estonia's future – county vision days, youth forum and the Estonian Futures Forum. We expect you to think along as well, so that we could come to an agreement on the key goals and aspirations leading to Estonia's new success story, so we could start making this vision a reality.

The growth vision can be defined as consisting of key options - vision choices presented on a scale with alternative options.

Further reading:

- Head of the Monitor Group Joe Fuller: Cornerstones of Vision Building
<http://www.arengufond.ee/eng/videocasts/videocast1695/>
- Development Forum 3: „Growth Vision: Globally Competitive, Locally Attractive Estonia in 2018“
<http://www.arengufond.ee/eng/foresight/forum/>
- Ott Pärna: Estonia 2018 - Globally Competitive, Locally Attractive
<http://www.arengufond.ee/eng/news/media/news1706/>

Futurewise Vision, not Hindsight

Siim Sikkut, Economy Expert, Estonian Development Fund



According to an old Estonian saying, wisdom comes after the event and afterwards everyone is wise. However, the most successful countries and businesses are those that try to have fore-wisdom – they consider all potential future alternatives and take them into account when making decisions. The Estonian economy's growth vision for the next decade shall be based on the wisdom of scenario planning for potential futures. Key goals and aspirations are derived from these futures to form a vision that brings success in all conditions, whatever these might be.

It is common for countries and businesses to make forecasts about economic conditions, but rarely do things in real life go as anticipated. In general, it subsequently appears that the reasons for difference are conditions not taken into account beforehand or deemed unlikely to happen or unexpected events, things that lead us aside from the expected development path.

This is particularly the case for the Estonian economy. Estonia is especially affected by changes that take place globally as well as the external opportunities and risks incurred because of its small size and open economy.

Our strength so far has been our ability to react quickly to changing external conditions, and to adjust forecasts and decisions accordingly. But the world around us is changing ever faster. However, many of the steps necessary for the future success of the Estonian economy have a long-term realization period and impact, so that these steps cannot and should not be reconsidered lightly and fast.

Scenarios are the basis for future wisdom

Scenario planning is used to make the best choices under such circumstance. It enables drafting of decisions and strategies that allow to ready oneself for various changes in the future. The conditions that may emerge and significantly affect future performance and the conditions that are definitely foreseeable can be screened out in scenario planning. The various courses these changes might take and their impact are combined into scenario stories in order to play through the future developments in advance. In so doing, the assumptions taken about the future changes are often deliberately

unexpected to create scenario stories, in a way of asking the question "What happens if ...?"

Scenarios help us to prepare ourselves for alternative courses of the future.

The aim is to shift in this manner the boundaries of habitual thinking so that decisions can have the desired impact in (external) environments other than predicted in the official forecast. On the one hand, scenarios

offer suggestions for decision-makers about how to prepare for alternate conditions of future. On the other hand, they also provide an opportunity for practical testing of current and future ideas, strategies or individual decisions. Analyses can be made with the aid of scenarios to envision the results of planned steps in various conditions, and how a different course of action might be beneficial.

Several factors impact the future

By 2015 people moving into retirement will exceed cohorts entering the workforce in OECD countries. This trend may further heaten the global competition for skills and finding labour intensifies.

Outsights, Globalisation: the View to 2025, 2010

Eighty per cent of megatrends continued to grow during the global downturn, only trends directly tied to economic activity reversed.

BCG, Megatrends: Tailwinds for Growth in Low-Growth Environment, 2010

ICT's development trend is "smaller, faster, everywhere" - by 2014, mobile Internet will surpass desktop Internet usage and computer technology and networks will continue to spread to various devices.

Morgan Stanley, Internet Trends, 2010

By 2020, BRICs (Brazil, Russia, India, China) will contribute about 49% of global GDP growth, in addition these countries will account for one-third of the total world economy by that time and thereby play a more significant role in the global economic arena.

Goldman Sachs, „Is This the BRICs Decade?“, May 2010

In the next decade, demand for food and energy will increase more than 50%, but clean water and fossil energy supplies are decreasing - by 2020 one-third of the world's population will live in areas of scarcity of water and the "oil peak" has possibly been reached.

European Commission, „The World in 2025“, 2009

Globalisation will not be reversed after the crisis because it is not useful for the world and especially for emerging economic powers - the BRIC countries. Still it can be expected that the major economic powers will try to influence and control the flow of goods, capital, services and information more than so far.

Outsights, Globalisation: the View to 2025, 2010

Social driving forces are:

World population growth. Changes in population migration patterns. Changes in immigration policies. Ageing population and the increase in the ratio of retirees to labour force. Middle-class growth, especially in developing countries. Urbanisation growth. Global competition for talent. Increase in localisation. New emerging global values. Variety of identities. The changing role of work in life. The changing role of education. The global polarization of income. Changes in the nature of the family. Growth of women's role in society. Pandemic spread of infectious diseases. The growing influence of *Millennium Youth*.

Technological driving forces are:

The speed of technological innovation. Network and connectivity growth. Information overload. Changes in Internet governance and regulations. The growing importance of cybersecurity. EU is becoming the technology centre. Spread of social networks. Intense improvements in bio-, nano- and cognitive technologies.

Economic driving forces are:

The pace and sources of global economic recovery. The centre of gravity for GDP shifts towards services. Economic power shifts to the East. Growth in demand for energy and behaviour of raw material prices. Consolidation of regional energy transport. Food supply barriers and "food shocks". Growth of "Freemium" business models. Scattered (branched) value chains. EU budget breakdown. Financial bailout of PIIGS countries. The public debt burden of the EU members. Growth of knowledge-based economy and innovation. Geographical shifts in creating intellectual property.

Environmental driving forces are:

Government reactions to climate change. Increase in areas where water is scarce. Impacts of Green incentive packages. The speed fossil fuel depletion. The EU strategy on greenhouse gases. Development and use of renewable energy. Effects of climate change on trade and growth.

Political driving forces are:

Trading and the risk of protectionism. Globalization 2.0 era: after the end of "Western era". Change in the role of multilateral institutions. Declining power of the US and the EU. EU / NATO enlargement and their changing role. Rise of populism. Growth of religious tensions. The risk of corruption increases. Public service developments.

Source: Estonian Development Fund 2010



In a world that has emerged from recession, tensions exist between East and West. Europe struggles to maintain its position in the world arena, despite continued EU integration. Russia and Germany build a strong alliance but Nordic cooperation falters.



Estonia actively seeks for new partners and advances bilateral relations with more distant (large) states. After proactive economic policy and ambitious education rearrangements are introduced, Estonia becomes a globally considerable hub of innovation and entrepreneurs – especially in ICT.

- In big countries, economic recovery based on green technologies and ICT is fast.
- Due to the ascent of Asia, competitive pressures increase all over the world and this leads to somewhat protectionist policies. However, globalization continues from advancing global debundling of value chain activities, outsourcing and offshoring.
- International cooperation enlivens, yet mostly through bilateral ties with chosen partners as opposed to regional cooperation.
- Russia warms relations with rapidly growing China and starts challenging the NATO alliance politically in addition to building a strong alliance with Germany.
- Although the EU emerges from the crises and adds new members, its economic growth lags behind the rest of the world. In the same vein, Scandinavia's success and outlook on the world market weaken, leading to a decreased regional cooperation.

- In this environment, Estonia seeks to build new partnerships and alliances, reinforcing economic and political ties with afar large countries (e.g. US, China, Brazil) and small progressive states (e.g. Singapore and Israel).
- In a fragmented geopolitical environment, the state assumes an active role in setting the new sights in economy and in rearranging the educational system, in particular.
- The government is focusing its actions on supporting the joining of global networks, and a wide-scale technology-based FDI attraction programme is launched.
- At the same time, the inflow of talents is incentivized. Foreign students are attracted by the emergence of competitive ICT and business schools, following the reforms in education. Talented Estonians are sent to study abroad on condition of returning to Estonia.
- Private equity and venture capital flow into the country due to fast growth in skilled labour pool and government-promoted favorable business environment. This facilitates the flourishing of high value-added sectors and boom of start-up companies, especially in ICT.
- Estonia leapfrogs with its astute foreign policy. At the same time, structural unemployment and social tensions grow in face of rapid changes. Yet, the fruits of economic success allow to easily mitigate unrest.

FRAGMENTED,
WEAK



DEGREE OF BALTIC RIM



Economic growth stutters in the developed world while emerging economies continue to grow. As a result, new global order and balance of power emerge, igniting competitive tensions and protectionism. The neighbourly relations along the Baltic Rim and within the EU are also not what they used to be – every country is acting primarily in their own interests.



Estonia finds it difficult to carve a place for itself. The economic model is not modernized and remains inward-oriented, cost- and resource-based. In order to maintain employment, the state has to start taking control of enterprises. Estonia's development outlook remains meager even once the external conditions start improving.

- Aftershocks of global financial crisis continue to ripple the world economy through 2016. The economic recovery of 2010-11 turns out to be short-lived, with the exception of big emerging markets. Capital shortages create an obstacle to finding new sources of growth and making technological breakthroughs.
- Rearranging of economic balance of power speeds up to the disadvantage of Western countries. Due to high unemployment and dissatisfaction levels the governments react in populist manner by adopting protectionist measures.
- Bilateral relations are advancing and driven by self-interest whereas multilateral relations come to a standstill. This takes the Western countries and wider economic cooperation into a vicious circle that becomes ever harder to break.
- The Baltic Sea region and the EU take a back seat in the world as investors strongly turn to East. Economic self-preservation instincts prevail in the EU and Nordic countries with attempts to protect domestic companies and markets. Regional integration is reversed.
- After Vladimir Putin is again elected as president, Russia starts turning more attention to achieving control over the weakened neighbours.

- Estonia has a hard time finding its place in this harsh environment. High unemployment persists, foreign investors have at best lukewarm interest for investing in Estonia and business opportunities are lacking. Many talented and experienced people emigrate.
- In the name of survival, the government tries to direct the economic life and decisions more centrally by regulating and interfering more. The little state finances remaining available for investments are used to develop low-cost manufacturing based on local resources.
- In doing so, the economic model remains cost- and resource-based. The hardships of getting access to foreign markets leave us dependent on meagerly growing internal market. The capacity for investment has fallen even further by 2016, while Estonia-Russia tensions have grown.
- In order to maintain stability and employment, the state decides to take control of key enterprises by buying up their assets or taking over management control. Yet, the government has neither resources nor capabilities to turn these enterprises around.
- The economy stagnates. Even with the global economy starting to improve towards the end of decade, the Estonian outlook remains poor – it takes a while to be able to progress from such a situation.

STRONG RECOVERY FROM CRISIS AND FAVOURABLE EXPORT CONDITIONS



Regionalization increases in the world, fast recovery and further growth are led by both traditional and new business areas. Within Europe, Northern and Southern countries distance from each other. Cooperation around the Baltic Sea develops strongly with Germany and Russia participating.



In midst of deepening integration of Baltic Sea countries, Estonian companies thrive with nimble business models and especially in new business areas. Estonia becomes a prime investment destination in the region. In 2018, Estonia is an open, lively and cosmopolitan nation rich in skilled individuals.

- Due to the post-crisis political backlashes and new balance of power, international cooperation and economic interaction shift more into regions. Leaning on more intense regionalization, the globalization megatrend persists.
- Post-crisis recovery is strong and quite fast, both in traditional business areas (based on growing investments, especially into infrastructure) as well as new industries (e.g. green economy) based on advances in technological breakthroughs.
- China, India and Brazil have become important players in global arena. Despite the interim critical moments in euro-zone, Europe has not lost its clout compared to large emerging economies.
- North-south polarization and distancing occurs within the EU. Germany values fiscal discipline and finds like-minded partners in the Baltic Sea region, adding momentum to already ongoing regional integration.
- Having become a stable, prosperous and Westward looking country due to rise of Asia, Russia then joins the cooperation network around the Baltic Sea.

- Favorable external economic climate and the tightening cooperation around the Baltic Sea offer a large market to Estonian companies that have nimble business models, especially in technological and new business fields.
- Post-crisis generational change of state and business leaders sparks wide-scale structural reforms.
- The educational reform and wisely selective immigration policy ensure fast growth of skilled labor-force. Estonian universities make a strong contribution to this after becoming regionally competitive through reforms.
- Educational system and the development of cross-border technology clusters make Estonia a prime destination for regional investments (including R&D centres).
- Although income inequality grows and creates some unrest, general welfare advancements create a good platform for keeping the tensions at bay.
- Estonia successfully carves itself a niche in the Baltic Rim and significantly benefits from the region's political stability, close economic integration and talent mobility.

REGIONAL COOPERATION

HARMONIOUS,
STRONG



In a global slow-growth environment, large countries are mostly interacting with each other and wider cooperation is left for regional blocs. These emerge also within EU and one of them strengthens in the Baltic Sea area, although without Germany and Russia participating.



Scandinavian capital continues to dominate in Estonia, the economic model remains static and brain drain accelerates. Cheap labor brings work in the less valuable parts of regional value chains, but growth is sluggish and development has a clear ceiling.

- Global economy recovers slowly from crisis. Growth remains slow but stable, except in fast-growing emerging markets. The sources of recovery are public investments together with slow-paced innovation in traditional business.
- The big countries US, China, Russia, etc interact with each other closely, realizing that mutual cooperation is beneficial for ensuring post-crisis stability.
- The role of wider cooperation is diminished and globalization slows down. Regional interaction and economic cooperation take off instead (especially in Asia and Latin America).
- Although there are new members joining the euro-zone (including other Baltic states and Poland), EU members recognize the limitations of intertwined economic policies. Further integration decelerates and European economic growth falls behind the rest of world's.
- Such internal weaknesses leave Europe aside and out of interaction between the big players. More progressive member states form intra-EU regional cooperation alliances.
- One such bloc develops in the Baltic Sea region, where the Nordic countries try to restore their growth by more tightly integrating lower-cost neighbours into their value-chains. Germany does not participate in regional cooperation and Russia is merely a trading partner.

- The initially strengthening business opportunities in Nordic value chains and also in Russia create a sense of escaping from crisis. This leads to a continuation of current economic policy, major reforms are not introduced and economic model remains the same.
- New credit financing is impossible to get from Scandinavian banks, because Estonian outlook is not trusted and money is needed in home markets. Inflow of EU Structural Funds offer some refreshment though.
- The postponement of policy changes prevents a larger wave of FDI inflow apart from the initial transfer of production and support services from Nordic countries in the immediate aftermath of crisis. Finnish and Swedish capital acquires the last successful companies that have remained in the hands of Estonian owners.
- Cost-based economic model, slow momentum of development and lack of capital alienate talented entrepreneurs, innovators and college applicants. Emigration of best talents and skilled workers speeds up.
- Estonia somehow gets by and the situation remains relatively stable. Yet, there is a clear ceiling in productivity and the economy is destined to run out of steam - the cost advantages that were restored during crisis do not last long.

PAINFUL RECOVERY FROM CRISIS AND TENSE EXPORT CONDITIONS

Hanseatic League II

Southern Finland

Therefore, building the Estonian economic growth vision began with scenario planning for relevant future conditions. Visionary thinkers from different spheres of life jointly considered dozens of possible significant conditions, key goals and aspirations and (policy) responses. The result is four narratives about how the external conditions might change and how the Estonian economy might correspondingly evolve by 2018.

From scenarios to growth vision

The scenarios are not prepared for the purpose of selecting a vision. They are all realistic in specific conditions, but probably none of them will become reality exactly as described here.

Nonetheless, it is important to ask, for moving from scenarios to a vision and strategies, in which (of the four) world(s) described we would like to live in the future and in which not. In this way, it is possible to draw conclusions about what must be done in order to exploit favourable

It takes firm leadership and several changes in today's policies to benefit from the favourable external developments and to prevent the worst.

conditions to achieve the desired future path, and how can we avoid the worst-case scenario if unexpected or adverse conditions eventuate.

When comparing the situation in Estonia today with the four alternative futures, our economy is starting out along the development path similar to Southern Finland story. This is a

simple and low-risk path with clear growth constraints. To move along this path to a different future; that is, in case favourable external conditions emerge, to reach a Hanseatic League II or some kind of Skype-island growth paths, our actions must be significantly different from the ones so far.

In addition, it is worth analysing the common elements in all the narratives in order to understand the emerging opportunities and constraints that will appear most probably - and take them into account in decisions of today.

If we make the right decisions in these choice areas, then we can be more confident about our aims to create a globally competitive and locally attractive Estonia by 2018 - and we do not have to be wise in hindsight why it did not turn out this way due to some external conditions.

Therefore, here are the key choices before you, from which through further discussion and debate a futurewise growth vision for the Estonian economy will have to be built.

Main conclusions from the scenarios - **decisive points for working out the vision:**

- In all variations of future the ability to create, to keep, to bring in **high-calibre human capital** is substantial. For achieving the preserving of national talent pool needs to be more holistically approached, immigration better targeted and attractions created to induce talents to come and stay in Estonia.
- In most scenarios, a key opportunity and challenge is increasing **the openness of the Estonian society**. Next to surpassing current intolerance problems we need to get to know better our immediate geographical neighbours and potential remote partners gathering the importance in the world. This requires ability **to establish good bilateral relationships** in addition to our affiliation to multilateral organisations. It will have to be based on the ability to proactively create bi-lateral relationships in addition to belonging to multilateral institutions.

- Regardless of which scenario will come to life there is a need for Estonia to **build up a positive economic and political image of itself outside of its borders**. The key question for this is how to break free from the mind pattern that our only potential is to be a „servant“ or „little brother“ of the other nations. We need to present and develop ourselves as an equal partner, who uses its population as a competitive advantage and is jumping **out of the 'smallness' shadow, being more flexible, nimble and skilled than others**.

- The scenarios indicate that Estonian companies have **potential to move up in value chains** and to break out of the current structural boundaries in productivity. It requires from both the government as well as the private sector a much smarter approach to attracting and investing capital into developing the Estonian economy. In the process, hard choices have to be made between business areas and sectors, e.g. when offering stimulus. The scenarios provide guidance for the choices: **it is rewarding to set focus on the ICT sector in various fields, service economy, clean-tech business and wellbeing economy**.

- **Rearrangements in social insurance and protection systems** have to be part of future economic development path, because parts of society will have hardships in adjusting to new conditions and regardless of the scenario the demographic changes will begin to have a decelerating impact on the economy.

- For applying all of the previous implications and reaching a more prosperous path of development **requires strong and decisive leadership**, especially from the government's side. Success in growingly complicated conditions and with always limited resources presumes proactive and creative decisions, which are not of fragmented nature. Also, readiness to **take risks** is necessary, e.g. in more focused targeting of economic and educational policy decisions.

Further reading:

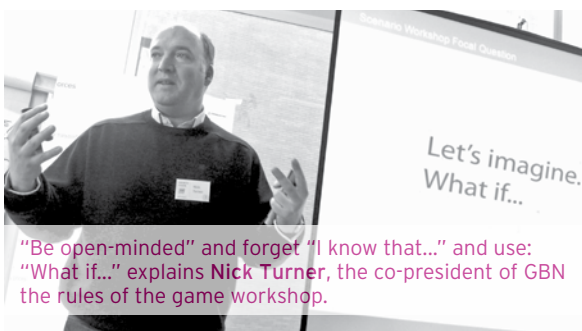
- Nick Turner on future scenarios
<http://www.arengufond.ee/eng/news/media/news1685/>
- Peter Schwartz gives some tips for success to Estonia
<http://www.arengufond.ee/eng/videocasts/videocast1888/>
- Background information on Growth Vision
<http://www.arengufond.ee/eng/foresight/growth/>



Growth Vision Workshops

During four days in spring 2010, a voluntary think-tank with experts from many different areas discussed alternative futures for Estonian economic development and key goals and aspirations for the growth vision, under the auspices of the Development Fund and with the help of the Global Business Network, which has drafted strategies for the governments of several countries.

1. Scenarios have been built in Estonia before, but they have been quite self-centred with almost no global perspective about the world events and their impact on Estonia.



"Be open-minded" and forget "I know that..." and use: "What if..." explains Nick Turner, the co-president of GBN the rules of the game workshop.

2. Scenario and vision planning is based on the key question to whom it is intended for and why. After heated discussion, the participants agreed that the key issue facing the Estonian economy is: "What will make Estonia globally competitive and locally attractive by 2018?"



Anvar Samost and Anzori Barkalaja reach consensus regarding a focus question.

3. What is definite as we head towards 2018? Which external factors have critical importance for Estonia, but are difficult to define in terms of their development? Are they grouped and if so how? Which of them will have the greatest impact on the Estonian economy in the future?



Aare Järvan and Hardo Pajula looking into the camera during the process of screening trends.

4. Usually plans are made based on today's knowledge and we prepare for one single future. But we need to look for events that could radically change developments. To this end, scenarios are good because they help us prepare for several futures. The financial crisis has shown recently that "black swans" do exist.



Priit Põldoja is considering under what conditions the "Southern Finland" development path could be replaced by the "Return of the State" scenario.



"The economic climate of Estonian foreign markets" and "regional cooperation in the Baltic Sea region" are characteristics, which may have substantial impact on the Estonian economy's future course, and therefore they are the axes of the scenario matrix.

Demand a Future Vision

The speech of the President of the Republic at the Development Forum, 6th of May 2010



For some time now, many of us have been attending various conferences and forums dedicated to exploring the options open to Estonia in the post-crisis period. There we discuss what can be done differently, what sorts of changes in direction would result in a more optimistic view of the future. The number and popularity of these so-called vision or future conferences should send a signal that the people are restless, that they sense a need to do something differently.

It is also a sign that many of our “accursed” elected officials have left things undone. The ones who should be mapping the way forward for all of us have done a substandard job. Yet we could just as well grant that, as the electorate, we have perhaps not been consistent enough in our demands for such a vision of the future.

I

When Estonia embarked on its course of radical reforms 20 years ago, decisions were made because there was no other way. Everyone realized that it was not possible to play a waiting game. When we look at countries who shared our status as captive nations in the Soviet Union, either *de facto* or *de jure*, we must openly acknowledge that Estonia has been successful because of its bold, future-oriented decisions.

This has been corroborated by scholars who have exhaustively studied the development of post-communist countries. Although their treatments highlight different reforms, the message is the same: among the countries with which it shares a destiny, Estonia stands out thanks to its resolve, its healthy risk appetite, its readiness to constantly reinvent itself and make a fresh start. Examples include monetary reform, deregulation, privatization or its prudence in amassing reserves and its readiness to cut back on public sector spending.

We currently feel dissatisfied with our lack of vision, with our reluctance or hesitancy in making the big decisions in Estonia. It doesn't end there: we sense we are too conservative, too fixated on a success narrative that has served us well but has now outlived its time. It is a narrative that was

Progressive 21st century Estonia needs new success narrative.

appropriate for a country that extricated itself from the swamp of the former Soviet Union but not so much for a progressive 21st century country.

Have we reached a stage where we no longer want to change anything? Have we become so conservative that all of our past decisions – albeit correct decisions in their time – should be carved into stone? Is our confidence in the high calibre of our universities so great that the brighter young minds who tend to go abroad to study simply don't understand us? Perhaps they not understand what we know to be true?

That is just an example of how our mindset has become stagnant, no longer allowing us to see further, higher, broader. Yet we constantly hear that the professors do not consider our economic policy sustainable, that our business leaders do not find education sustainable, that near-sighted politicians are to blame for everything, and so on. Indeed, we have mastered the skill of pointing fingers.

I don't know what to call all of this. Is it complacency, sclerosis or stagnation? Or are we uncritically clinging to a success model that has long outlived its day and continues to decline in value where a post-transition economy and society are concerned?

II

We are facing a number of sizeable and complex tasks. They are more complicated than the ones over which we are currently toiling. The Maastricht criteria have been made abundantly clear to us. These are tasks placed before us, criteria others have agreed on. Tasks assigned by others can be difficult, but completing them nevertheless demands as little as solving a difficult crossword puzzle. Yes, it takes effort and it is easy to become frustrated. But ultimately it is a task assigned by someone else, a puzzle designed by someone else. The task we face consists of understanding and articulating the tasks we place before ourselves.

A small nation with limited resources cannot just drift around in a rapidly changing geopolitical situation. We have heard the phrase “too big to fail”. We have to realize very clearly that Estonia is not too big to fail. Many who are bigger than we have already failed, or if they haven’t, they are getting there. When we look around and see these failures – my office does not permit me to cite examples, but you can imagine them in your mind – the common denominator is the inability to solve existing problems.

True, in Estonia’s case, widespread corruption or huge sovereign debt are not issues. Not even run-of-the-mill gridlock. On our way to the European Union and NATO and in complying with the Maastricht criteria, we have always listened to criticism and resolved the problems despite being self-critical ourselves. But we want to be more than just an A student in a remedial course. Now we are all grown-up and we will not be handed any new tasks. Even if we sometimes act like bellyaching 19th century peasants who lodge their complaints not with the tsar but with Brussels in the hopes that someone high up and far off will call us to order.

III

Where to begin? We might start by mapping our opportunities, hopes and shortcomings. Yet we won’t get anywhere if we keep on quaking in our boots about *what if they come, or what if some other terrible thing should happen*.

Appeal to the Estonian people: to demand that the political parties define the objectives and answers to the questions about the future of Estonia and Europe at the upcoming elections.

Quality of life is difficult to define. It is about as fuzzy as “sustainability” and “administrative capacity”. The words of a former US Supreme Court justices would be apt: “I shall not attempt to...define (it), but I know it when I see it.” Quality of life has many components. I already mentioned some of them: education, infrastructure, access to and quality of health care. But quality of life also includes tolerance, willingness to help, friendliness and cheerfulness. This is well-being – it is ineffable, but we know when we see it.

But still, what is to be done to make dreams real, word become flesh? How to put into words our own tasks, the primary ones and the long-term ones? We are a people who demand objectives, directions and terms, and know that in 2018, the Republic of Estonia will turn 100 years old. It is also the year of Estonia’s presidency of the EU. This gives us an opportunity and an obligation to articulate the objectives and directions for the entire European Union. Just as Finland unveiled the Northern Dimension, which had a significant impact on regional policy, or Portugal and its less-successful Lisbon Strategy. We have eight years to put our ideas and aims into words. That is two full parliamentary cycles and at least two election campaigns.

We are living in a time when it is fashionable to put down and mock politicians. We live in a populist atmosphere with its presumption of a guilty party. Psychologically, this is understandable. But life in free and democratic Estonia also requires us to sense personal responsibility. There isn’t much point in cursing politicians if we do not set stricter expectations for our elected officials. If we really want the most positive vision to be fulfilled, it can only happen through the efforts of the entire nation. We must have high expectations of ourselves and others. If we are not demanding, our future will be merely the stuff of political theatre. And it will not be a one-off theatrical performance such as the one at the Saku Arena, but a bleak future and unending tragedy.

Futures Forum

On May 6th 2010 around 200 people tried to look into the future together or to see the unforeseeable. The four scenarios proposed by the think-tank were discussed and the future was played out both by persons and in groups.

1. Estonia's membership in NATO is the country's first star, joining the EU is the second, the third is adopting the Euro and the fourth star is entrance to the rich club of OECD countries.



2. Is it a growth vision or an equilibrium vision? Economy is just a device and being locally attractive has to be clearly stated in the vision.



3. The Finns, our northern neighbours searched for a vision in parallel with us. One must learn from the best, but who do the best learn from? Led by Sitra, Finland was looking for new wellsprings of vitality within itself.



4. It is difficult to put the abstract future into words. If at the same time something tangible is created, then a model of thoughts is built in your head and metaphors are formed, which are easier to put into words.



Welcome to FinanceEstonia!

Imre Mürk, Expert, Estonian Development Fund



As Estonia is putting together its portfolio of new growth fields of economy, it should consider adding financial services there alongside other business areas that are knowledge-intensive and allow for considerable added value. The results of the foresight activities performed by the Development Fund give the reasons why this should be done and show how an export-based increase in financial services can be achieved in Estonia.

An increase in financial services would mean a structural change in the economy of Estonia, companies and foreign direct investments that create higher added value, more well-paid jobs and more tax revenue.

The export opportunities of the Estonian financial sector are asset management and private banking services to the Central and Eastern European and the CIS markets, and performance of back office functions.

Liberalisation of service and goods markets, globalisation and the introduction of ICT have created good conditions for an increase in the export of knowledge-intensive business services, incl. financial services, all over the world. In 2009, right in the middle of recession, the Development Fund launched its financial services foresight project to find out whether Estonia could have prerequisites to participate in this globally expanding business and if so, then how to turn this potential into export success.

Our analysis, conducted with the experts of our partner, British financial services consultancy Oxera Consulting, showed that there are three reasons for Estonia to consider exporting financial services.

Firstly, today's major financial centres are struggling with toughening competition and constant rise of fixed costs, which promotes the geographic relocation of the different functions within the value chain of the financial services they offer. This means that we can expect increased interest in investments in countries where expenses are lower or legislation more favourable. Financial groups have grown very large and they are therefore thinking in regional terms. Central and Eastern European countries have not figured in this regional picture yet. However, if we consider the aforementioned change trends and recent examples of the success

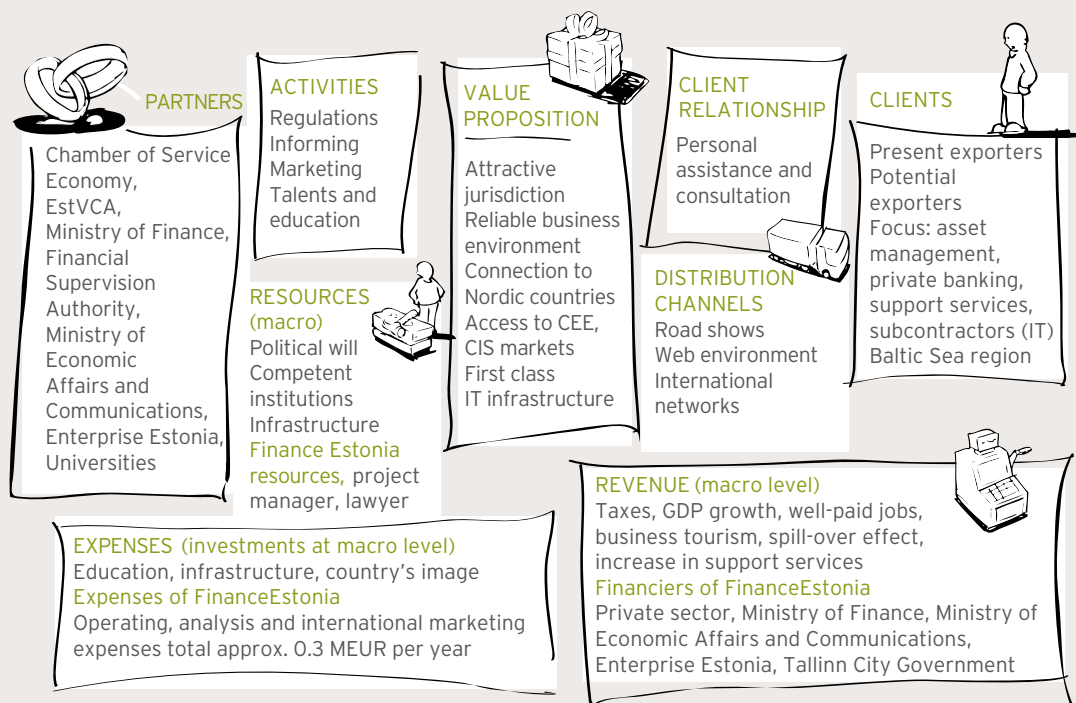
of Lithuania in luring global exporters of financial services to the country, we can conclude that the interest of investors in our region is increasing after recession.

Secondly, Estonia has certain attractive factors required to compete as a destination for provision of international financial services in the region. They include good geographic location and close connections with Nordic countries. It makes possible to offer competitive asset management and private banking services in the region and target them at the increasing markets of Central and Eastern Europe and the CIS. Integration with Nordic countries, i.e. broader cultural and economic closeness, and connections make Estonia stand out among our competitors in Eastern Europe. We can also offer added value to Nordic countries with our better understanding of the Eastern European cultural and business environment.

Thirdly, in addition to the fields mentioned above, Estonia can also increase export in the financial sector by performing back office functions (support services, e.g. accounting, administration, data processing, IT development and maintenance, legal issues, etc.) for international financial companies. Our ICT infrastructure and expertise could be the prerequisite for a stronger development of this direction if only we could solve our chronic shortage of ICT specialists.

The current financial sector of Estonia focuses mainly on the domestic market and the number of companies with export ambitions is very small. This means that export of financial services can be increased to a considerable level only by attracting new foreign investments. Considering the latter, it is important to understand the factors that determine our success or failure.

Business model of the FinanceEstonia cooperation platform



Source: based on the results of a brainstorming at Development Fund

The following factors are important for an international financial services company that is choosing a location: costs, labour (availability and quality), cultural and geographic proximity to the relevant markets, infrastructure (availability and quality), taxation and regulation, and other factors such as Estonia's image, quality of life, economic and political stability, and transport connections.

Good geographic location, integration with Nordic countries, labour expenses and IT infrastructure make Estonia competitive, but the availability of skilled labour in the fields of finance and IT is limited, legislation and the taxation system are not always favourable, the overall quality of life is rather poor and the image of Estonia (as well as the entire region) is weak for international financial services companies.

In order to be successful in attracting foreign investments in the financial sector, Estonia has to stand out in a positive light amongst competing countries in the region and then take more active steps to lure investors.

No country will ever become an international financial centre, even a small and niche-based one, just like that

Brendan Kelly, the Director of the Financial Services Ireland, said the following at the forum *Financial Services 2018* organised by the Development Fund in spring 2010 when delivering

No country will ever become a financial centre without long-term political support, and systematic and coordinated activities.

his inspiring speech about Ireland's path to becoming a successful niche-based financial centre: "It all started when the Prime Minister of Ireland, at the initiative of businessman Dermot Desmond, created the Clearing House Group in 1987 to promote export of financial services and declared the development of the field a national priority." These words as well as a broader analysis of the experience of other countries all show that it has never been possible to turn a country into a

financial centre without long-term political support, and systematic and coordinated activities. This is why developing Estonia into a niche-based financial centre requires political support and systematic long-term cooperation between participants in the public and private sectors.

However, Estonian economic policy does not have any experience in the kind of public-private partnership required for this task, which would combine top-down strategic coordination and bottom-up knowledge of the field and the market for the development of a new growth area for the country. This is why the representatives of the public and private sectors who took part in the foresight project of the Development Fund developed the FinanceEstonia cooperation platform (see Figure on previous page), which is based on a model that is new for Estonia.

The objective of the FinanceEstonia is to gather up financial service companies and supporting businesses already exporting or with export ambition and various state agencies and higher education institutions with mission to develop export of financial services and relevant supporting services in Estonia. The platform will be used to turn Estonia into an attractive business environment for exportable financial services within European Union legislation. Companies and institutions providing financial services and supportive services globally or regionally are also attracted to locate into Estonia. FinanceEstonia also focuses on creating awareness and enhancing positive image on the target markets and helps to improve the availability of qualified labour.

All in all, financial services certainly have the potential to contribute to a new economic growth in Estonia. The weight of this contribution depends first and foremost on whether or not it is possible to make the political leaders and the decision-makers to support the subject of exporting financial services and how proactively the necessary prerequisites will be developed in the nearest future.

Nothing to lose, everything to gain

Any concerns and preconceptions that may deter policy makers to stray away from the decisions that are important for the creation of a potential new economic growth field should be put to rest by the knowledge that in comparison to many other fields, the 'price of experimenting' in financial services is considerably lower than in such capital-intensive fields like industry or R&D.

The presence of financial institutions that focus on international markets in Estonia would be good for the internationalisation and competitiveness of the local business environment also in a broader sense. And even if we do end up with the negative case scenario where the international success of Estonia's financial sector is not as big as expected, a strong financial sector aimed at the domestic market would still support our economic development by ensuring better capitalisation of the private sector and availability of financial leverage instruments, and being the chain that links companies operating in the economic environment of Estonia.

The understanding that time is not on our side should speed up the decision-making process. Indecision may reduce our chances of success considerably, especially if Lithuania continues implementing its service economy development strategy, where financial services are one of the priorities, as successfully as demonstrated by the first strong steps the country has taken.

Further reading:

- Page 31 of the report: „Lithuanian 'Investment Czar' in the Service of his Country's Competitiveness"
- Video clip from Development Fund's forum „Financial Services 2018": Brendan Kelly, the Director of the Financial Services Ireland about Ireland's financial centre
<http://www.arengufond.ee/eng/videocasts/videocast1641/>
- Foresight report „Financial Services 2018: Estonia's Export Opportunities and Policy Choices"
<http://www.arengufond.ee/eng/publications/>



Estonian Growth Opportunities in the Cross-Border Healthcare Services

Kitty Kubo, Head of Foresight Division, Estonian Development Fund



The economy of Estonia is at a crossroads. The business fields and activities we have used to grow our income and welfare are running dry. We have to find new opportunities both in the industry and services with strong growth outlook, high value added and export potential. Healthcare services could meet these conditions very well.

Demand in this field is expected to grow fast in the world, provision of health services is based on highly qualified labour and modern technology, and generates considerable value added. There are several different ways in which health services could be exported:

- the patient travels – this includes, for example, health tourism where a patient travels to another country to see a physician;
- the model of service provision moves – this includes outward direct investments in other, usually less developed countries, e.g. for the establishment of a hospital/clinic (branch) on the basis of a model used in the home country;
- movement of knowledge – this includes solutions of telemedicine, diagnostics, etc., which allow specialists to provide remote services using technical equipment;
- physicians travel – this includes health professionals working temporarily in another country.

The first two, i.e. health tourism and export of business models, comprise up to 90% of all global export of health services. The annual turnover of health tourism in the world exceeds €15 billion and the lion's share of this amount is generated by patients travelling between the United States and Asia, and inside Asia. The prices of medical procedures are almost 10 times lower in quickly developing emerging countries. According to a forecast released in 2009 by Deloitte, the annual growth of health tourism will be 35% and by 2012, the flow of health tourists from the US will increase to 1.6 million people per year. It was still at the level of 0.75 million in 2007. However, also their earlier positive predictions never came true.

Although the trade in health services is currently linked to the US more than any other country, it is certainly not just an American trend. Citizens of developed European countries with rapidly aging population are increasingly more prone to use health services abroad because of lower prices or shorter queues. The EU healthcare directive gives an extra push to patients travelling inside Europe. Most common export model is health tourism between neighbouring countries with patients from more advanced countries seeking services in countries with lower level of development and more affordable prices.

The main concern associated with health tourism is that domestic patients get caught between the cogwheels of the health business, but it has proven to be unfounded. This fear has been feeding on examples of emerging countries, where top class hospitals for American health tourists stand out like sore thumbs amongst the poor medical facilities for local people. However, surveys have proven the opposite: export of health services improves the standard and quality of health services in a country as whole, which also benefits local patients. Developing the export of health services creates new jobs, offers incentive to doctors who have moved abroad to return home and motivates young people to study medicine. A country's economy and health system both benefit from this.

In the medium-term Estonia primarily has the opportunity to grow health tourism

Estonia's vicinity to Scandinavian countries and the high number of tourists who visit Estonia from these countries (1.9 million overnight tourists) are our biggest advantages on which we can build the export of health services by offering quality services at lower prices (service prices in Estonia are 1.5-2 times lower) and shorter queues. In the heart of such a strategy could be the synergy between Estonia's well-developed medical spa network, quality medical services and the tourism industry. It would also require improving Estonia's image in the target markets.

Estonia's model of health tourism could combine a well-developed spa network with quality medical services and tourism business.

Demand for health services is also increasing east of Estonia, where the growing middle class is not satisfied with the services offered in their home country and is looking for better quality abroad. Singapore is a country that has skilfully reaped the benefits of a similar situation by positioning itself as the main provider of health services to the growing middle class of China. Could we have a similar advantage in respect of Russia?

All in all, it seems that we have more to gain than lose, and the Development Fund believes that health and wellness services could be one of the paths that Estonia could take from its current economic crossroads. Estimates show that with a realistic plan and a lot of hard work, we could grow our export of health services to circa €65-124 million in the medium-term.

The expected growth of demand for health services and the increasing openness of the market (incl. the imminent adoption of the EU directive on health services) increase competition and allow countries with advantages in terms of price, availability or quality and the ability to make themselves visible to potential patients abroad to benefit from the changed situation.

Further reading:

- Summary of the report "Healthcare Services 2018"
<http://www.arengufond.ee/eng/publications/>
- Video clips from Development Fund's forum „Healthcare Services 2018“. The insight of health care service export from UK, Latvia and Hungary.
<http://www.arengufond.ee/eng/videocasts/videocast1800/>
- Healthcare Services 2018 Forum
<http://www.arengufond.ee/eng/events/event1769/>



Capturing Foreign Direct Investments Aimed at Export

Heido Vitsur, Economy Expert, Estonian Development Fund



The challenges set to the economic policy of Estonia by the recovery of global economy differ slightly from the ones we faced during the crisis. Balancing our expenditures was still our most important task in the winter, but as we look forward our priority should shift to the achievement of a more stable economic growth through structural changes. Our resources are currently limited, which means that we need to raise considerable amounts of foreign direct investments.

However, there are fewer foreign investments available in the world today. The wishes of investors and the motives behind their decisions have also changed con-

siderably since the crisis. But we have changed exactly as much. Estonia is no longer the country where the cheapest and simplest subcontracting can be found. We may soon have to leave many of the niches where we feel rather safe today. Our success in attracting foreign investments that create higher value added and are aimed at export will depend on how well informed we are of events in the region and the world, and how flexibly we can take it all on board. We have to gain a better understanding of the methods that are used in the fight for investments so we could utilize them more actively for the achievement of our goals.

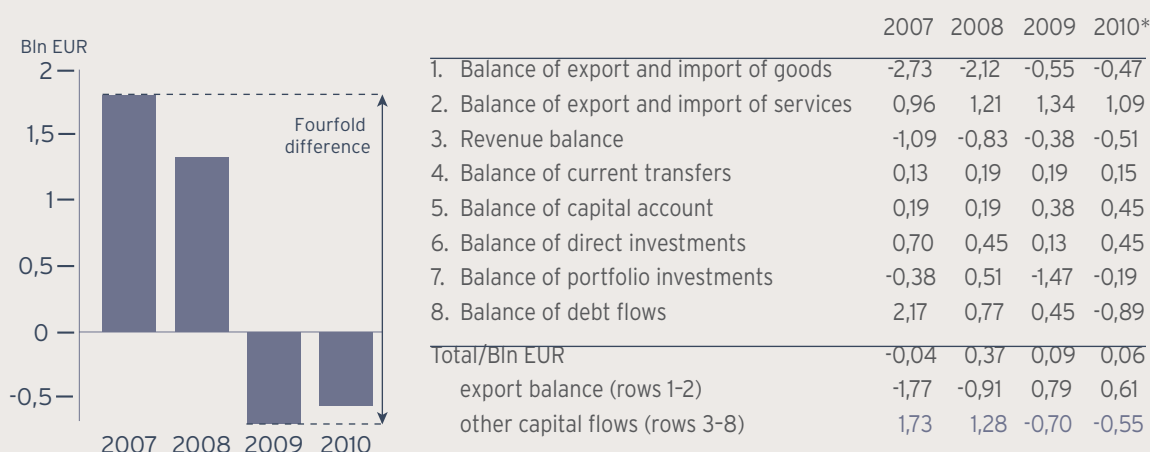
No time for rest yet

Although the second quarter of 2010 brought the encouraging news that Estonia's GDP was growing, mainly as a result of the increase in export of industrial products, our situation today is no different than it was a year or two ago. The current economic structure means that even if we do succeed in taking our export back to the pre-crisis level, it would still not guarantee that our economy would regain the level it had before the crisis, not to speak of financing the necessary structural changes. There has also been no noticeable inflow of foreign direct investments (FDI) that would be sufficient for new growth and structural changes.

Speaking about the importance of foreign direct investments, we must not forget that international and foreign companies already produce about one-and-half of the export from our manufacturing industry, that the profits they have reinvested have so far been the most important source of FDI, and that any increase in the credit offered to our economy depends almost entirely on the inflow and conditions of foreign funds.

Or in other words, economic growth based on domestic consumption and borrowing more money from abroad is no longer possible in the situation where the savings of the domestic private sector, both individuals as well as companies, are 1.6 times smaller than the loans they have taken. Our future prospects remain largely dependent on the inflow of foreign investments aimed at exporting knowledge-intensive products and services. However, will we manage to be reliable and attractive for foreign investors who focus on this field of economy, and how well do we pick up on the quick changes in the world that surrounds us?

Inflow of foreign funds to Estonia has decreased up to 4 times compared to top figures



Note: *Estimated on the basis of the data for first six months if the cash and capital flow received in the state in the second half of the year does not differ significantly from the flow in the first half.

Source: Payment balance as of 1 July 2010, Bank of Estonia

Looking at both incoming and outgoing capital flows over the last three and a half years we see (see Figure) that the inflow of foreign funds, which used to support Estonia's economic growth, has decreased drastically and turned negative, but the impact of the crisis on different types of capital inflow has varied. Data from the first half of 2010 are also not very encouraging. The balance of direct investments is the only one to have recovered well, but it is unable to balance the negative movements in portfolio investments and loan capital on its own.

All in all, the amount of money poured into our economy by all foreign sources (excl. the money earned from export of goods and services) by 1 July 2010 is up to four times smaller than in 2007 and 2008. The additional foreign funding we received in the first six months of 2010 is also 1.5 times less than the average for six months in the previous year, which was the result of the unsatisfactory balance of export of goods and services.

At the moment we cannot really expect to receive the same amounts of foreign credit, which were essential in financing our economic growth so far. Banks have become more cautious and the total debt of our private sector already exceeds GDP by 1.2 times.

The service sector has been the most stable in bringing foreign funds to Estonia. Export of services is important for us despite the amounts being smaller than in the export of goods, as each Euro of exported services contains approximately two times more value (work) created in Estonia than that of exported goods. In the latter, imported component represents a bigger share than value created in Estonia. This means that export of services is almost equal to export of goods in terms of the amount of value added.

We cannot base our future plans on the hope that Nordic businesses that are searching for a low-cost location will always be investing in Estonia.

However, we cannot balance our economy without a considerable increase in the net export of goods. This is why the development of our manufacturing industry – its modest ability to make money on the global market – is our main concern at the moment. Let us not be fooled by the amounts of gross export, as they contain so little value created in Estonia (20-25%) that it is not enough to export our economy out of the crisis. Unfortunately, the structure of our existing industry and its place in the value chain mean that value added or quantities cannot be increased much. We need foreign investments that change the structure of our industry in order to grow, and we need to create the conditions to attract them.

Last decade brought relatively few foreign direct investments into Estonian industry

First of all, we need to keep in mind that Estonia has never attracted many investments that are productive, aimed at export and bring additional funds from foreign markets in our economy. In the last ten years FDI have mainly moved into the sectors aimed at the domestic market, such as financial intermediation and real estate development, the share of which in total foreign direct investments has doubled since 1999: from 30% to almost 60%. The share of investments made in manufacturing industry, however, has decreased from one-third to 15%. The majority of FDI have been takeovers of existing Estonian companies (like banks, Estonian Telecom, Stora-Enso, etc.) rather than establishment of new companies over here.

The world is changing

Secondly, we have to keep in mind that the crisis changed the world and the preferences of investors have changed particularly fast. Growth in Asia has recovered sooner than expected, but the situation in the EU and US is still complicated. Firstly because they managed to stabilise themselves by reducing base interest and creating support packages costing trillions of dollars, which led to national debt and confidence issues in many developed countries; and secondly because they failed to pay attention to their demographic problems and the strength of the economic challenge coming from Asia at the right time.

And finally, we must also not forget that Estonia no longer competes for foreign investments as a cheap country and that production throughout Europe has to start changing fast in the coming decades.

Foreign investments will not come to us just like that, we have to work for each and every one of them and we have to work at least as hard as our competitors and neighbours

We have a sufficient selection of instruments at our disposal that we can use to achieve success, such as more expedient use of EU structural funds, motivation packages to investors, tax incentives etc. However, putting the emphasis on foreign investments does not mean that foreign and local investors are or should be treated differently. It is simply an admission that we do not have sufficient resources (capital, ideas and skills) to achieve new and more sustainable economic growth in the coming years, including the creation of new jobs, and that we depend considerably more than before the recession on FDI inflow.

It is important to see and understand the conditions that determine the direction of capital flows and to try and take advantage of them

Ernst & Young (E&Y) analysis of the attractiveness of Europe as a destination for FDI in 2010 showed that the prevailing trend in the movement of investments is the increasing dominance

of Asia. Western Europe will drop to fifth place among the most attractive destinations of investments in the next three years (first place in 2008). Central Europe (mainly countries that joined the European Union in 2004) will not lose its attraction and stay in the third place after China and India, but most investors are unfortunately prepared to invest here only after the global economy has stabilised. Although Europe is still an attractive place for investments, it is rather likely that the essence as well as extent of its role in the world economy will start changing faster than expected and this change is likely to have an impact on investments in Estonia. Other requirements will be set to our attractiveness as a result of the changes. This means that once economy in Europe stabilises, our traditional industries and services that are aimed at the domestic market may not receive as many orders from Nordic companies as we have been expecting. It is also not certain that the number of companies moving here will be as big as before the crisis and that investment decisions will be based on the same principles as today.

However, it seems certain that strengthening competition in the post-recession world will be 'putting an end' to the current geography more intensively than before and weightier investment decisions will no longer be made on the basis of sales and profits, but also on the ability of the host country to provide human capital required to maintain competitiveness, and an environment that is suitable for innovation.

The eternal problem: How to make foreign investments work better for the host country?

Three prevailing foreign investment policies can be observed in the period following the World War II.

The state controlled cross-border capital and cash flow in terms of direction, amounts and conditions in the first period, but most states had lost their controlling role by the end of the second period. Whilst the first period was an obstacle to rational investment of capital and thereby obstructed development, the problem faced in the case of the second approach was the emergence of regional (e.g. South-Eastern Asia, Mexico) or field-specific (e.g. Dotcom, property) speculative 'bubbles', the last of which acquired the proportions of a global crisis.

What will the future bring? The dominant standpoint at the moment is that even though the movement of capital flow must be favoured as much as possible, we need regulations that would limit the emergence of bubbles. Or putting it picturesquely: we need them just like we need speed limits and traffic signs to ensure a smooth flow of traffic. Also, no country would benefit from remaining no more than a place of occasional quick visits by foreign capital. This is why cooperation between capital and governments is considered the most important thing in ensuring stability and the most important aspect here is not legislation, but the attitude of the government. It is good if a broad cooperation network is created around a foreign investment (also for the purpose of finding new foreign partners together) and foreign investors are included in the discussion of Estonia's problems more actively than before.

Investors' optimism has increased in comparison to last year, but they haven't become more active

The abovementioned survey by E&Y showed that a year ago businesspeople lacked clear vision and pinned their hopes on the action taken by governments, but the situation has changed: now they feel that they are the main creators of growth while the government's role is back to more limited and supportive.

However, it is just a change in attitude and mood. More than half of the companies covered by the E&Y survey have currently no plans to invest in Europe, one-fifth have not decided yet and only 28% have investment plans with one-half of them just planning to expand their existing activities.

Developments in tax issues can be expected to become the most interesting

It is fairly certain that states will continue supporting small and medium-sized companies, innovation and high technology even after the crisis, but the situation in taxation issues is more complicated. We can assume that ongoing globalisation, including liberalisation of investment conditions and toughening competition, will start another wave of tax competition in the world. As we are talking about investments, we can easily guess the direction in which this tax competition will be going – it's reduction of direct business taxes. However, we must keep in mind that huge public debt makes reducing taxes in Europe difficult and many experts predict that Europe is facing tax hikes in the future. The critical question for us is whether or how European Union and especially the eurozone will restrict or regulate tax competition between states in the future. Will ideas about tax harmonisation remain up in the air again or will it be necessary to take steps that have not found much support in order to ensure the stability of the euro? Whatever the case, we should start thinking about operating in different conditions than the ones in which we are operating today.

Europe's diminishing appeal increases the need for strong action in attracting investments

Although 70% of business leaders operating in Europe believe that they will continue with industrial production in Europe also in ten years' time, approximately 40% of the managers of Asian and American companies think that Europe will become less and less appealing for the manufacturing industry in this decade. Although Central and Eastern Europe are currently considerably more attractive for western investors because of their lower expenses, many investors no longer count on this, as they believe that convergence will equalise expenses by 2020 at the latest.

The future of Estonia depends on the country's own initiative and ability to attract new capital in its economy in the next few years as much as it does on the appeal of our investment environment. Only active seeking for cooperation with potential and current partners and offering them good investment opportunities would allow us to become an equal member of the club of highly developed countries in the Baltic Sea region.

However, if we fail to find sufficient foreign capital aimed at higher value added exports, and thereby change the structure of our economy and survive in post-recession competition, we may slide back into the role of a simple subcontractor.

The result depends largely on our will and ability to focus our actions and mobilize resources accordingly, especially in developing human capital and making our investment environment more competitive.

Further reading:

- Ernst & Young's 2010 European attractiveness survey
- World Investment Report 2010
- „Foreign Investor 2009“ - final report by the Faculty of Economics and Business Administration research team, University of Tartu

Lithuanian 'Investment Czar' in the Service of His Country's Competitiveness

Kitty Kubo, Head of Foresight Division, Estonian Development Fund

Prime Minister of Lithuania Andrius Kubilius seems to be looking at a shopping list of global technology and knowledge-intensive business giants – the kind of multinational corporations that people in this corner of the world have been too scared to even think about, and his goal is to bring them home, one after the other. His radar is aimed at carefully selected companies that could help Lithuania achieve its ambitious dream of becoming the largest regional innovation centre, where the emphasis is on knowledge-intensive services such as financial services, health services, IT, etc., by 2020.



Lithuania does not believe that its visions will materialise on their own: the prime minister has set his sight on finding as much foreign capital as possible. He visited the hotbeds of innovation in today's world and he did not return empty handed.

Summer 2009 saw the publication of the news that one of the world's largest banks, British Barclays Bank, is going to invest approximately €50 mln in Lithuania by establishing its centre for development of IT services over there. The factors that made the investor decide in favour of Lithuania were good level of education and availability of IT talent: 4500 bachelor's and master's degree students study information technology in the seven Lithuanian universities where IT is taught. This is why the first thing Barclays did when it arrived in Lithuania was establishing good relationships with the University of Vilnius. 280 highly skilled IT engineers have been successfully recruited by today and the centre plans to increase the number of its employees to 500 by the end of 2010.

In May 2010, two related messages made headlines. Firstly, the market leader of global money transfers Western Union, whose turnover is €320 million and who employs 6000 people globally, said it would set up its fourth centre of excellence of global operations in Lithuania. The centre will be dealing with so-called back office processing functions. Yes, it is not the sweetest part in the financial sector's value chain, but the salary level is relatively high, and the IT component is significant. The Letter of Intent, signed with the Lithuanian Ministry of Economic Affairs, says that the centre will be opened in the end of the year and it plans to create 200 jobs in three years.

The second piece of news, which outdid all previous ones, was that the Lithuanian Government and global technology giant IBM signed a memorandum of intent expressing the will of both parties to establish IBM's research centre in Lithuania. The project would be the biggest technology project in the history of Lithuania ever if carried out. The centre would do research in the strategic areas of IBM, which are nanotechnology, life sciences, innovation in health and intellectual property management. The centre would employ Lithuanian scientists whose motivation to stay at work in their home country would increase considerably. Lithuania considers the project a top achievement in its development and rightfully so – it marks the country's progress from a user of innovations created elsewhere to a place that creates innovations for the world. IBM is known as one of the largest creators of radical innovations in the world and its patent portfolio is awesome.

Another transaction was announced in summer and the Baltic media called it the fifth biggest transaction in the Baltic States of all time and the biggest business transaction in Lithuania after the era of privatisation: the US giant of scientific development products and services Thermo Fisher Scientific acquired Lithuanian biotechnology company Fermentas International for €200 million. The new owner confirmed its plans to expand research and production activities in Lithuania.

It seems that once you get some foreign investments in, more will follow. Especially if the first arrivals are as significant as the companies that invested in Lithuania. And many others have already found their way to Lithuania in the wake of the first investors: US aerospace equipment developer and manufacturer Moog, who will establish its branch that deals with R&D, service and manufacturing of medical equipment in Lithuania; US-based Computer Science Corporation will arrive with its service centre for foreign customers; Microsoft will create its innovation and training centre by the University of Kaunas; Ryanair opened its first Central European aircraft base at Kaunas, bringing along 115 million euros of investments. And this is not all: Lloyds, Barclays Capital, HSBC, etc., are still on the 'hit list'.

Vicinity to Scandinavia, close integration of the Baltic States and endless markets and partnerships in the East are the trumps that Lithuania offers investors. In interviews, new investors praise the abundance of educated and multilingual talents, the quality of the technological infrastructure and the clear foreign investment goals of the state in addition to the favourable macroeconomic factors. If the investor is a multinational corporation that owns a high value added globally recognised trademark and pledges to invest at least €5,8 million in Lithuania, they will receive support in the amount of €0,7 million from the state's Invest LT+ measure (totalling €58 million) in 3 years. The measure is as investor-friendly as possible and contains financing for all kinds of investor needs: the support can be used with a single package application for activities from scientific research to staff training, fixed asset investments and visits to trade fairs.

The focussed activities of Lithuania in restructuring its economy, where the shoots of new economy are imported to the country in the form of global foreign investors, have been impressive. The website fdimarkets.com rates Lithuania as the Baltic leader in the race for technology-intensive investments: according to their data, 28 foreign investments were registered in Lithuania in 2009 and they have promised to bring in 1 billion Euros worth of new capital and create 5,300 new jobs.

What could the next news be like? The Prime Minister of Lithuania has visited the US twice this year. He and higher education leaders from Lithuania also visited the world-class university MIT (Massachusetts Institute of Technology) and met with its president. I wonder if we will soon be reading about an alliance between the University of Vilnius and MIT? It's not that impossible considering that entering into such cross-border alliances is on the rise in the globalising world of higher education.

Using such an aggressive policy to obtain foreign investments is very similar to the approach employed by Ireland, Singapore and many other successful small countries. When the Development Fund pointed out in its White Paper to the Estonian Parliament (Riigikogu) in spring 2009 that in the middle of a crisis one should take a closer look at bringing foreign investments to the country, all the attention it gained was the media pointing out the funny name of 'investment czar'. Seems like Lithuania took the advice.

How does the activity of Lithuanians affect Estonians?

What the rest of the world sees is that we share the same region and have the same advantages and disadvantages as Lithuania.

We compete for foreign investments, labour and markets. Lithuania has built its sales strategy on the same points in which Estonia also sees its advantages: vicinity to the Nordic countries and closeness to the east. Lithuania has the advantage of having a market of considerable size, both in terms of consumers and talent. If Lithuania continues with the same level of success, it will have a serious opportunity to grab all the best investments and talents in the region, and get far ahead of other Baltic States. The strong rise of Lithuania in the Global Competitiveness Report of the World Economic Forum also gives reason to believe that the country's successful development will continue.

Structural Changes in the Economy Require Venture Capital

Heidi Kakko, Head of Investment Division, Estonian Development Fund

The limited inflow of foreign direct investments and lack of extensive natural resources means that the only way Estonia can improve its long-term competitive position is to build a model where the structural changes in the economy (moving towards manufacturing and services of higher added value) are based on educated labour and wisely invested capital. A number of small countries have taken decisive steps to support and guarantee the existence of these prerequisites to growth when facing similar challenges in order to be globally competitive.



The existence of successful international corporations such as Google, Apple, FedEx, Amazon, eBay and Genentech is proof of venture capital's ability to nurture the growth of stellar companies. Both the experience of USA as the country with the most developed venture capital market in the world as well as a recent survey The Global Economic Impact of Private Equity Report 2010 of the impact of private equity and venture capital on the global economy prove that companies and economic sectors that enjoy high commitment by venture capital grow faster than average in terms of total production, added value created and employment indicators. "Old" Europe has not managed to improve its position as a destination of investments nor attract capital. Harnessing innovation in companies of "Old" Europe has also not improved. Comparing US and European companies shows that the share of early stage innovative start-up companies in total research and development activities and turnover is considerably larger in the US than in Europe. Europe has decided to focus on supporting large companies during the recession in order to relieve its impact, even though 'young and furious' companies make a considerable contribution to the process of economic restructuring by launching products and services that are based on new technologies and force established companies to innovate.

Europe is alleviating the effects of recession by supporting large companies, however it is the 'young and furious' companies that are the ones making a significant contribution to economic restructuring.

Young innovative companies are the main engine of growth in a knowledge-based economy. Finland, which is one of the world leaders in competitiveness and the amount of investments in innovation decided according to Tekes that the number of its rapidly growing new innovative companies, the ambition of its entrepreneurs and the success with which activities are carried out are too low in comparison to the leading countries in these fields such as USA or Israel.

Israel is a good example - 30 years ago it was in a similar situation as Estonia - limited natural resources and capital supply combined with educated labour and research and development capacity. The Israeli government made a strategic decision: in order to create a strong

foundation for long-term economic growth, the focus had to shift on expanding knowledge based sectors and significant financial support had to be offered to commercialisation of the results of research and development. The objective was to eliminate market failure in the supply of early stage capital by creating a correctly focussed policy. Today Israel along with the USA is one of the world's leading countries in developing venture capital and globally competitive technology-based companies. For example, there are more start-up companies from Israel listed on NASDAQ than the whole of Europe combined.

Estonia is not overly appealing for capital suppliers

The development of our manufacturing industry depends on the inflow of foreign direct investments which is something that all other countries in the region are actively competing for. We also rely on finding willing investors if we want to develop new innovative growth

Investors see Estonia as a cheap subcontractor rather than the greenhouse of companies like Erply and SmartPOST. The more innovative companies come from Estonia, the more appealing we are for foreign investors.

companies. The survey conducted by the Estonian Venture Capital Association (EstVCA) among its full members (16 investment companies or funds) showed that several Estonian investment funds and companies invest actively outside Estonia (60% of the headquarters and 40% of the staff of companies in the investment portfolios of EstVCA members are in Estonia).

Although Estonia's position in terms of capital supply per resident is rather good (due to small population) when compared to other Eastern European countries, the absolute supplied amount of

capital and its availability, and the appeal of the state to venture capital investors are still low. According to the E&Y attractiveness index, Estonia does not measure up to more attractive countries in terms of general economic activity as well as business culture and opportunities as far as investors are concerned. The depth of Estonia's capital market or the supply of capital in any stage or form is insufficient and Estonia is seen primarily as a country of traditional industry/investments and not as a fertile hotbed of innovative companies. Estonia's favourable taxation policy is an advantage in terms of investments, but it does not make up for omissions in overall investor protection and the weak level of company management practise. Estonia lags behind the countries preferred by venture capitalists (the difference is almost double), which means that we have reason to be concerned and need to act.

The more seriously interesting, innovative and successful companies our country grows, the more attractive it becomes for capital suppliers looking at Estonia from the outside.

In regional competition with all other Eastern European countries, Estonia is in an advantageous position as a living environment and due to its more western business culture and investor protection regulations, but we are still lagging behind in the category of general business activity. In other words, we do not have enough active businesspeople or companies whose prospects would be interesting at the international level. The latter is certainly a result of our small domestic market, but our entrepreneurs also lack

the courage and skills required in going for strong international expansion. The more seriously interesting, innovative and successful companies our country grows, the more attractive it becomes for capital suppliers looking at Estonia from the outside. The number of positive examples of start-ups established in Estonia, which are able to find international investors in later stages, is fortunately increasing. Interesting examples here are GuardTime and Erply, who both included foreign capital in early stages, as well as the Development Fund's investment in SmartPOST, whose pilot network became sufficiently attractive for Finnish logistics company Itella in just a year and a half. However, we need certain support activities to accelerate organic growth as they would help Estonia to achieve better results in this field. Israel created its rapid

growth model with the programme where the state amplified the entry of private equity into knowledge-intensive sectors of economy as a catalyst. After the completion of an analysis, Finland found that the state has to play the role of market developer in the early stages and create a model where the public sector invites smart money in the form of business angels and second phase investors to develop start-up companies. This laid the foundation for the business accelerator (VIGO) model in Finland.

Research and development support must turn into investments in successful companies

Expanding the cooperation between companies and the research system, which in turn depends on the research and development (R&D) capacity of Estonian companies, is a prerequisite to the growth of innovative companies and going in the direction of a knowledge-intensive economic structure. The R&D capacity of most Estonian companies is currently low and the ability of research institutions to identify intellectual property suitable for commercialisation is also very limited. In the given situation it unfortunately means that cooperation with more capable foreign companies would be more realistic for Estonian R&D institutions, as they are able to give R&D institutions specific orders that can be commercialised. This opinion is shared by researchers, who believe that the current capability of Estonian technology companies is low and find that the gap left by the uneven capacity of the innovation system and weak industry is filled by international companies. The level of R&D expenditure as well as the supply of capital to the creation of products from the results of R&D or intellectual property are important in growing innovative research-intensive companies. Israel is the country with the highest R&D expenditure to GDP ratio in the world (4.7%), followed by Sweden (3.9%) and Finland (3.5%). The level of R&D expenditure in Estonia is 1.29% of GDP (2008) and the goal is to achieve the level of 2% in 2012. However, maybe this level should be even higher to make the pace of Estonia's development more competitive and faster?

The ratio of venture capital to R&D investments is low even in Finland, let alone Estonia.

When we compare the level of R&D expenditure and supply of venture capital, which would help early-stage companies to turn intellectual property into products or services and market them, we see that Finland's position in comparison to Israel and the US is relatively poor: venture capital investments comprise just 0.2% of GDP. The Finns themselves believe that they need to change their policy, as their supply of venture capital and R&D expenditure ratio is 3-4 times lower than in the US or Israel. Estonia could also learn from this and see its need for venture capital as considerably higher in order to be able to channel the results of research work into the products/services of start-up companies at least at the same level, or maybe Estonia should invest even more and use smart money to improve its currently weak position in the international race?

Result-oriented ecosystem for innovative growth companies

Estonia needs an operational ecosystem that increases the country's international competitiveness through the development of innovative companies, as this is the only way Estonian companies launched in an early stage can grow into internationally successful companies. There is currently no central agency responsible for the focussed development of rapidly growing companies. A number of activities and programs have a role in this ecosystem such as support of the state, attitude changing developmental activities, the *Ajujaht* (*Dash*) competition, the

Start-up Academies that bring together young entrepreneurs at the international level, visits to Silicon Valley, virtual incubators, garage accelerators, helping to create networks of business angels as well as early and start-up stage investments by the Development Fund and the private sector. Many of the valuable components this system needs already exist today, such as *Ajujaht* and venture capital supply, but we still lack integral management of these components and are unable to interconnect them in a performance-oriented manner.

The Development Fund, Enterprise Estonia and Ministry of Economic Affairs and Communications are working on an approach to supporting eager Estonian start-ups in such a manner that a performance based value chain would be available in all development stages in respect of preparation, implementation and financing. This is the only way we can foster the number of innovative companies that would be able to compete at the international level and help change the structure of economy in the direction of knowledge-intensive products and services of higher added value.

In conclusion - there is a big difference between a start-up and a start-up. In one corner are lifestyle companies that allow the entrepreneur and their employees to make a living; in the other are *born global* companies that try to conquer the world with a unique product, service or business model. We need both types of companies, but the latter are the ones that help us restructure our economy. Estonia could become the hotbed of start-ups in the Baltic Sea region, but just like the StartUp Nation of Israel it needs someone to lead and take responsibility for reaching this goal. We also need to understand that this work will take at least around ten years. The Development Fund is ready to take this responsibility and relevant preliminary work with the Ministry of Economic Affairs and Communications as well as Enterprise Estonia is already under way.

Further reading:

- Globalization of Alternative Investments. Working Papers Volume 3. The Global Economic Impact of Private Equity Report 2010.
- VICTA - Virtual ICT Accelerator, Tekes. Technology Review 219/2007.
- The Global Venture Capital and Private Equity Country Attractiveness Index. 2009/2010 Annual. IESE. Ernst & Young.
- New Opportunities for Estonian Firms - Business Models, Open Innovation and State's Choices. The Ministry of Economic Affairs and Communications.

Interim Appraisal of Venture Capital Activities

At the start of 2010 independent experts conducted an interim appraisal of how the Development Fund had implemented its venture capital strategy and tried to identify the impact the Development Fund has had on the development of the venture capital market of Estonia since 2007 and the areas that need to be improved in the future.¹

- Interview results show that the activities of the Development Fund on the Estonian venture capital market have brought about positive changes and played an important role in the development of professional venture capitalists.
The respondents found that the investing activities of the Development Fund have attracted more private sector investments for early-stage companies, rather than driving them away. The interviewed businesspeople emphasised that the Development Fund has improved the supply of capital with its activities and this is essential for launching ambitious technology projects on the market.
- The interviewees pointed out that financing the start-up stage has to be resolved, and the required financing is approximately 10,000 to 100,000 euros per investment project. They emphasised that the solution has to be connected to a broader development of the activities of business angels, which would allow them to spread risk through a balanced portfolio. In April 2010 the Investment Expert Committee granted the Development Fund the mandate to make start-up investments in the amount of 1 million euros per year. The Development Fund has made 3 start-up investments since June.
- The respondents were also satisfied with the initial volume of the Fund's investing activities and the initial size of the Fund. They estimated that the portfolio should contain 15 to 20 investments to allow for a balanced reduction of the risks that characterise early stage business projects.
- The respondents' opinion of the structure and team of the Development Fund was generally positive. They believe that the Fund's financial analysis and planning expertise is strong, but it should involve extra competence in the fields of technology analysis and international marketing. It is the essential experience brought by venture capital funds to projects in addition to money, as Estonian companies (similarly to many other countries) often have good technologies, but the country as a whole suffers from a lack of experienced serial entrepreneurs, knowledge of the international market and the skills needed to manage a growth company internationally.

Recommendations of the experts who prepared the interim analysis to the Estonian government:

- The Fund must be capitalised to a sufficient extent (at least 30 million euros on the basis of international practise) in order to allow it to make new investments, reduce the insecurity of co-investors and make follow-up or co-investments whenever necessary.
- Development of special support measures for young innovative companies should be considered, including incentives in terms of the taxation environment and social security, in order to lure technology companies to Estonia.
- Based on the requirements of Estonia and examples of other countries (e.g. the proof of concept programmes of the United Kingdom), to use the Development Fund in offering additional investments (in addition or as a supplement to the R&D support offered by Enterprise Estonia) in the amount of 10,000 to 100,000 euros per business project for prototyping growth companies and testing the international market.
- The Development Fund would be the logical fund manager of possible future funds financed by the state, but it is also important for the Fund to maintain the independence on which its current success is based, both in terms of policies as well as the ministries that govern different areas.

¹ P. Nightingale, A. Reid: Early-stage Investment by the Estonian Development Fund. An appraisal of activities 2007–2009 and scenarios for future development, SPRU, University of Sussex, Technopolis Group

In general, banks don't finance start-ups, as the risks of a start-up are too high for a bank: future cash flow is uncertain, the project often lacks collateral and repayment of the loan may prove to be too much of a struggle. Banks also don't want to invest in equity or participate in company management.

Heiki Raadik

Swedbank Eesti, CFO

Member of the Investment Expert Committee,
Estonian Development Fund



Killu Tõugu-Sanborn

PhD in Molecular Biology,
Oxford Finance Corporation,
Member of the Investment
Expert Committee,
Estonian Development Fund

A class of serial entrepreneurs has emerged in Estonia. They have a lot of initiative, ideas and abilities, and are locally very well networked. They must be supplied with money and other resources as much as possible to make sure they don't give up and go fortune-hunting elsewhere, or just stop working. *

Growing companies that are valuable at the global level and create the kind of commercial and intellectual value, which makes it possible to improve the structure of economy, requires a scheme that isolates the Investment Department of the Development Fund from political winds irrespective of who is in power and what is popular. Looking at the situation as a venture capitalist from the US, the biggest threat to the Development Fund (I highlighted this in writing in my first opinion I gave after seeing the first plans of the Development Fund, which I was asked to read several years ago) is determination of the existence and continuation of the Fund's capital through an annual political process. This is not the way to achieve success in a matter that is of long-term strategic importance for the state.

My advice is to develop support systems aimed at export. It is difficult for freely functioning business to cross the entry barriers of foreign markets, as it is very hard by using money originating from Estonia to provide services on foreign markets at the same level as companies that operate on those markets. The possibility to protect intellectual property has been an important omission so far. It is obvious that start-up companies cannot compete on the international market under the same conditions without the state's help. The state's support in protecting intellectual property would improve the companies' opportunities to succeed on foreign markets and create products of higher added value in Estonia instead of less valuable subcontracting.



Ardo Reinsalu

Curonia Research, CEO

Chairman of the Investment Expert Committee, Estonian Development Fund



Andrus Viirg

Enterprise Estonia, Silicon Valley

Estonian start-ups should go to Silicon Valley as operating there is the 'gold standard' in the technology sector. It is the most concentrated and advanced technology centre in the world, which offers the best opportunities to start-ups and small innovative companies. The main points in favour of going to Silicon Valley are an important and rich market, availability of additional capital and exit opportunities to start a new round with new ideas.

Investment Portfolio of the Development Fund

Start-up fund

SmartPOST Development Fund investment: €0.85 million in two parts. The purpose of the investment was to accelerate the arrival of the self-service parcel terminal technology, incl. software, developed by SmartPOST on the international market. In summer 2010 SmartPOST successfully sold its Estonian pilot network to Itella.

Ilmarine Engineering Development Fund investment: €0.65 million in two stages. The purpose of the investment is to develop the product development unit of Ilmarine Engineering OÜ.

Goliath Wind Development Fund investment: €0.25 million in two stages. Goliath Wind develops a new type of wind turbine that is cheaper and more efficient than its predecessors and would make it possible to cut the price of wind energy by approximately 20%.

Fits.me Development Fund investment: €0.31 million in two stages. Massi Miliano OÜ is developing a new robotics-based solution for online clothing stores under the Fits.me trademark.

United Dogs and Cats Development Fund investment: €0.189 million in three stages; the last payout was not made. The developer of the www.uniteddogs.com and www.unitedcats.com social networks for pet owners, was unable to carry out the business model as planned. A new investor was found for the company and they will take the development and management of the environments under their control.

BiotaP Development Fund investment: €0.84 million in four stages. BiotaP OÜ develops an efficient platform for microbiological testing of the environment.

Seed fund

GrabCAD Development Fund investment: €0.127 million in two stages. GrabCAD develops an internet environment for CAD engineers, designers and subcontracting and production companies. GrabCAD grew from the Development Fund's international business incubator SeedBooster.

Inner Circle Development Fund investment: €0.088 million in two stages. The company's ambition is to develop a user-friendly environment for group communication, which is private unlike Facebook, and take it to the world.

Sportlyzer Development Fund investment: €0.095 million in three stages. Sportlyzer develops a web environment for the international market, which will lead amateur sportsmen to training and motivation software. Sportlyzer grew from the Development Fund's international business incubator SeedBooster.

SeedBooster

Egolego is the developer of a professional web environment for work-related self-training.

SelfDiagnostics develops an innovative instant home test in pathogen-specific medical diagnostics.

ICT Education in Estonia – It Is Time to Change the League

Üllar Jaaksoo, Project Director of the IT Academy



A year ago a cooperation agreement “Estonian IT Academy” was digitally signed – this is an initiative to bring higher education in the field of information and communication technologies (ICT) in Estonia to a new level capable of breakthroughs of international significance. Universities, the Estonian Development Fund and the Estonian Association of Information Technology and Telecommunications (ITL) have joined forces in the matter for which an impetus was given from the conclusions of EST_IT@2018 foresight project.

The vision sees higher education in ICT in Estonia as a contemporary learning opportunity that is accepted by the world’s leading higher education institutions, envied by its neighbours in the Baltic Sea region and preferred by the majority in our target markets of those wanting to learn in the field of ICT.

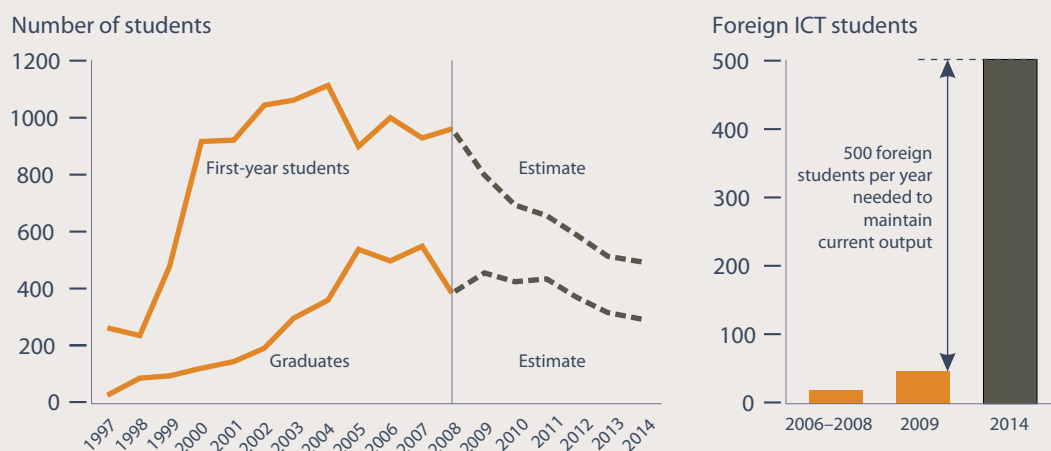
A year ago I started developing a solution for the founders of the “Estonian IT Academy” corresponding to this vision. Now I present you with this model, which has been selected as the best from a number of solutions, in order to promote further discussion and, more importantly, to help Estonia make strategically important decisions.

The state of IT in Estonia

There are very high expectations for the ICT sector in most of the development plans that have national importance for Estonia. There is a big task set before us; we have successfully established fast internet connections, but the management and finance models for a successful resolution of the task from the point of view of the development of human resources are missing.

Today, ICT higher education has great difficulty satisfying the current needs, both from the point of view of volume and, unfortunately, quality. A leap in the development of ICT higher education is not only an important lifeboat for the Estonian economy, but also a great opportunity. Since ICT is a huge creator of opportunities for other sectors, we need more students in this field and at every level from vocational education to doctoral studies.

A tenfold increase in the number of foreign ICT students is needed



Source: Marek Tiits, Development Fund 2009

There is plenty of room in the ICT sector for growth in development work and exports, and the success we have had so far in creating jobs can continue at a faster pace. ITL members estimate that ICT enterprises will be able to use a couple of thousand extra master-level ICT specialists on new projects within a year or two. The resulting additional tax revenues for the Estonian budget would be almost €32 million per year from direct taxes alone.

We are several thousand specialists short when it comes to using the potential of the ICT sector as a source of new economic growth. Even during the recession it has been impossible to find unemployed ICT specialists with a master's degree. Quite the opposite - there are hundreds of job offers for ICT specialists, and the larger new ICT development centres with hundreds of new jobs miss Estonia and land elsewhere, especially in Lithuania. IT companies cannot expand their business profitably in Estonia. Both existing companies and potential larger foreign investors are struggling, and are forced to direct their investments elsewhere for objective reasons. Looking into the future, we can see the problem becoming even more severe. Based on demographic trends in Estonia, we can predict that the number of potential students, including ICT students, will decrease substantially. In addition, our neighbours have employed a more successful strategy for obtaining foreign investments and this will start drawing qualified ICT workforce away.

Better higher education than in Nordic countries

A breakthrough improvement in the quality of ICT higher education is a big challenge. For it to be competitive against Nordic countries, however, requires even more effort.

Nordic countries are very competitive in Europe when it comes to ICT higher education and research. Within the framework of the European Union's initiative *European Institute of Technology*, Helsinki and Stockholm are considered the top locations where the latest ICT know-how is concentrated. The European Union relies a lot on our northern neighbours when it comes to raising Europe's competitiveness.

The internationalization of universities: the only way to increase quality and maintain volumes in higher education

Competition between universities for, primarily, foreign higher education students (and professors) in the world will continue and, most likely, intensify. In most areas of the world, first and foremost in Asia and emerging markets, the demand for higher education is growing and as a result so is the supply. Many OECD countries, on the other hand, face a decrease in the number of students due to the aging population and decreases in population. Today the number of students participating in foreign exchange programs all over the world is almost 3 million and this will increase to 7 million by 2025.

The biggest threat to the Estonian higher education system is our decreasing population. The percentage of students who are Estonian citizens will fall to 50% or even lower by 2015. This poses the challenge of how to preserve the system or even to improve it in areas that are most important for the country. The only way to do that is to take decisive measures to make the system more international and to involve foreign students because the percentage of locals in the higher education system is too large. In addition to ensuring the number of students and securing the necessary human resources for a knowledge-based economy, internationalization will also help improve the quality of higher education.

Universities that are successful on the international level are characterized by:

- a notable percentage of foreign students and faculty members. The universities that have international success have managed to involve high-level academics and talented students globally and regionally. The percentage of foreign students is at least 20%. Universities that favour students and scholars from their own countries are unable to reach the top level. The percentage of foreign students in Estonia is 3.1%;
- autonomy and powerful leadership based on vision. University administrations must develop a future action plan, objectives and a development plan and also have the ability to make faculty members as well as all staff believe in the common goals and objectives;
- quality research work that is only possible to achieve through strong foreign partners and close international cooperation. This requires allocating significant resources to doctoral studies;
- attractive curricula and targeting international markets. Work and learning environments at universities that are competitive at the international level are also foreign-language-based (most commonly English-based). When targeting foreign students we need to focus on countries that are of major national importance.

Internationally successful universities can emerge through:

- modernising existing universities. This requires the availability of high-quality educational institutions. Non-egalitarian positive discrimination always accompanies this option, meaning that one or several higher education institutions will be favoured compared to other institutions;
- merging existing universities. This enables us to overcome divisions, old-fashioned structures or to eliminate systemic shortcomings. The result is a larger scale (critical mass), synergy and mutual benefit between various scientific and study units and a higher position in international rankings;
- building new cooperation models on the basis of existing universities. To this end, stronger units in existing universities in the fields that are most important for the country are concentrated into clusters, and the private sector and foreign partners, including prominent universities, join them. This is accompanied by preferential treatment of one specific field compared to others;
- creating new universities from scratch. This is the most expensive way, but it has its advantages. In this case it is easier to implement a new academic culture than to transform an existing one; it is politically easier to give a new university the academic freedom and the room to manoeuvre when it comes to management and administration, and it is easier to employ new enrollment principles and to establish different payment systems.

Source: the article is based on the Estonian Development Fund report "An Internationally Competitive University".

If we take stock of the top levels in Nordic countries in the coming years and evolve in cooperation with them, we will inspire our schools and people to reach the right level for Estonia as well.

It is for objective reasons that the quality of studies at the educational institutions offering ICT higher education in Estonia falls behind the Nordic countries by a considerable margin. The quickest way to make a leap forward in quality is to bring in competence. Unfortunately, with the current funding system the universities are not competitive when it comes to involving the world's more gifted people. The problem is both in the volume of funding and its management. The salaries offered are considerably lower compared to those offered both by the ICT industry and by universities in the Nordic countries. To quote candid conversations with faculty members, unfortunately faculty positions in Estonia are filled, in essence, without competition and they teach within the limits of their average abilities and not at the required level and with the required content.

The current development plans in schools offering ICT higher education do not anticipate a significant increase in the number of students, and neither do they foresee a notable increase in the percentage of foreign students or breakthrough leaps in the quality of the curricula. Most of the plans describe the same level of or even a decrease in the output, and anticipate only a marginal increase in the number of foreign students and faculty members.

If these circumstances in the ICT higher education remain, it is futile to dream of competing in the top ICT league and enjoying some of the benefits of the high added value ICT industry. According to Christian Ketels, a prominent *Harvard Business School* scholar, Estonia needs to break free from the prison of former glory: "You are to gaze to the future; move from creating favourable conditions to clear choices and concentrating resources". The level of ICT higher education in the Nordic countries is undoubtedly one target for Estonia to aim for.

Solutions

The task for ICT higher education = cover the shortage of IT specialists + inject the economy with additional talent bringing high added value + raise the quality of ICT higher education to the level of the Nordic countries. The solution relies on a significant increase in the number of foreign students and faculty members in Estonia compared with what we currently have. This will be expensive and complicated and with inevitable setbacks, but in the mid-term it will still pay off. The strategic involvement of foreign students from target countries that are important for us will also support attempts by Estonian ICT businesses to operate in these foreign markets and to increase proceeds from exports.

Meaningless duplication within Estonia should be excluded from ICT higher education. The universities are independent and free to compete with each other, but it may turn out that there are not enough resources in Estonia to pay off the consequences of this competition and to ensure the required level of quality.

It is necessary to develop international curricula and to offer ICT higher education clearly distinct from that offered in the Nordic countries. This means cultivating a new type of talent - interdisciplinary, enterprising and connected to the worldwide network of knowledge. We must concentrate forces on cooperation directed outside Estonia. We must raise our ambitions and invest in resources respectively.

In order to compete in the new top league of ICT higher education we must:

- drastically increase funding,
- ensure substantive and continuous cooperation between universities and update the management model to that end,
- staff the academic community oriented towards innovation.

First, the decision is a political question, and hopefully it will soon be tabled by the *Riigikogu* (Parliament of Estonia). The reason is still the same – to take bold decisions that shape the future. The field of IT has been made a priority on paper and in speeches for years, and now it is time for it to become so in reality as well. This means funding that is appropriate to the quality requirements – both in the detail and as a whole.

Increasing the funding is justified only if the task can be clearly worded for the universities, divided among them and also consciously accepted by them and covered by action plans. Just adding money to the current fractured system cannot be considered sensible. An audit of state-commissioned education conducted by the National Audit Office of Estonia has clearly identified that the content of ICT education is lagging behind. Dozens and dozens of support programmes funded locally and through the EU structural funds have been set up as project competitions in order to promote various skills. What is missing, however, is the complete picture of the effect of the funding, or the advances in the content and quality of the resulting education.

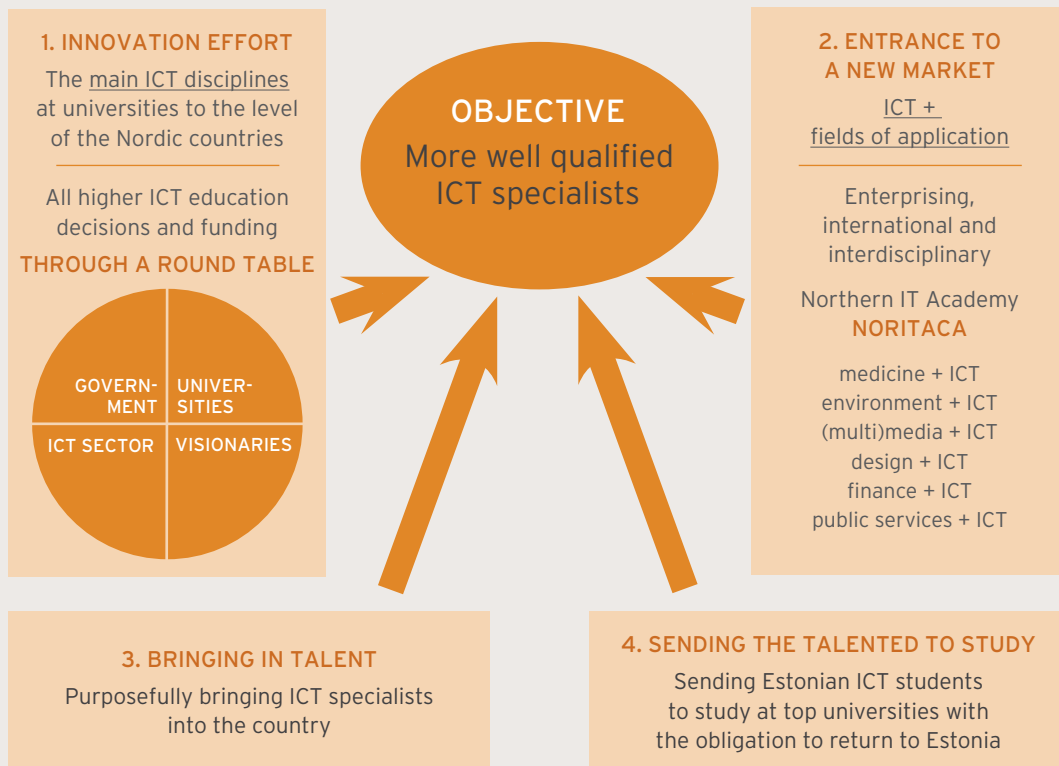
Secondly, the universities themselves primarily, but also the institutions that organize and fund higher education, must substantially update current practices. Successful cooperation was possible, for example, in the top scientific centres where all participants work together efficiently and the tasks and responsibilities are clearly agreed upon. It is also important to overcome cliquish interests in offering higher education.

Thirdly, it is necessary to review the values and ambitions among, primarily, the academic community offering ICT higher education. Today's mentality is rather distrustful and this has been fuelled by the underfunding that has lasted years and the schizophrenic divergence between national priorities and day-to-day activities.

To summarize

- We must train several times more ICT specialists than today. This is imperative and the costs will be compensated.
- Due to the demographic situation in Estonia we must be able to engage foreign students as well.
- ICT higher education must reach a competitive level compared to the Nordic countries because our talented young people deserve this and the talented foreign students expect this. It is not possible to reach this level without bringing in foreign professors.
- In order to reach the new level we must increase the funding of ICT higher education several times, and above all for masters and doctoral studies and research work in English. The “positive discrimination” must also be ensured when it comes to state funding for higher education and for science.
- In addition to a good basic ICT education, we must also build up a new interdisciplinary and enterprising higher education in ICT that will create the necessary prerequisites for the growth of the ICT sector and for more rapid development towards products and services that have higher added value.
- We must stop distancing ourselves from foreign students and learn to welcome them. In addition to curricula in English, this also means the learning environment, accommodation, jobs, migration rules, scholarships, social interaction, etc.
- Even if we start with all this right now and keep on implementing it consistently it will unfortunately still take time before the number of specialists that the IT sector needs is achieved through reforming higher education. For now we must bring the ICT specialists that are needed for the development of the ICT sector to Estonia from other countries and by design send our brightest students abroad to top ICT universities with the necessary support, but also obliging them to return home.

Solution model for launching a new ICT success story



Source: Business plan for the IT Academy

The founders of the IT Academy cooperation agreement have decided to compile an ICT higher education modernization plan by autumn 2010 at the latest – to simulate various options, agree on the necessary steps and then to mobilize all contributors to put the vision into practice. I have presented an important summary of this plan to you in this article.

I believe that it is quite possible to move up the league in the field of ICT higher education. Let us abandon the internal national championship together with the cups and the injuries. If the IT Academy pilot project is successful, it will be possible to use the experience gained from it in the future on a wider scale by finding effective ways to make all higher education in Estonia more open and international.

Further reading:

- Cooperation agreement „Estonian IT Academy“
<http://www.arengufond.ee/eng/news/foresight/news1468/>
- ICT foresight project: policy recommendations
<http://www.arengufond.ee/eng/publications>
- Report “Internationally competitive universities”
<http://www.arengufond.ee/eng/publications>

The Tiger's Second Coming

Kristjan Rebane, Information Society Expert, Development Fund



In the Estonian consciousness the tiger metaphor is associated first and foremost with the utilization of information technology in education. This is thanks to the Tiger Leap programme that was launched over ten years ago. At the same time, there have recently been increasing claims of the tiger falling asleep, referring to signs that the previous development pace is fading. We can gain new momentum through the wide-scale application of our IT skills and experience to pull the education

wagon forward, and we can strive to become a spokesman in the field of education technology innovation not only in Europe, but also beyond.

Estonia is known as an e-country and we have had success in several areas. Internet access exists in even the smallest of schools. This means that we are in the second position in the world when it comes to internet access and the number of computers per pupil has exceeded the European average. Now that we have successfully brought computers into our schools, we should start using them in an appropriate 21st century fashion. This means using computers in our studies more than just as advanced typewriters and pictures displayers - according to the latest

IT-education study in Estonia the computer is still used in schools for searching simple information and writing assignments.

A representative working group consisting of education and IT experts came together under the auspices of the Development Fund to discuss the use of information and communication technologies (ICT) in education. The result of their work is the vision that within ten years a push supporting innovative thinking will emerge in general education.

ICT allows us to make quality education equally accessible regardless of geographical location and to utilize better the limited resources currently available.

Teachers will have good ICT skills and a support system that encourages education to become more available and interdisciplinary, encouraging pupils' individuality and interest in nature and technology-related subjects. When this vision becomes a reality, high-quality education will be available for every child despite the low tide in demographics (e.g. 183 general education schools have been closed between 1995 and 2009). The structure of university graduates will correspond to the expectations of the economy and society (so that we do not have to talk about the perpetual lack of a thousand IT specialists). Interest in learning shall support each pupil's individual development (in addition to good results at school, the international studies will also show pupil's interest in learning and a higher assessment of his or her own achievements). At the moment the national statistics and studies still confirm the opposite, which means that if we don't meet these challenges in education we will not be able to be more successful tomorrow than we are today. A computer connected to the net offers increasingly new effective ways for bringing the best learning opportunities within everyone's reach - for considering the students' individual needs and for increasing interest in learning in order to meet these challenges and make the vision a reality.

ICT can help improve **the availability of education** through implementing e-learning tools (net-based learning materials, user forums, online lectures, consultations, automated tests, etc.) in addition to the conventional learning process or as a partial substitution for it. This will make high-quality education equally accessible regardless of geographical location and allow for better utilization of the limited resources available (be it, for example, the alleviation of the shortage of teachers in the remote country areas or pressure on the national budget).

Learning-ware is of critical importance when it comes to improving the availability of education – without systematic and interactive learning tools neither an e-textbook nor an e-workbook can emerge, and without existing learning-ware it is pointless to train teachers to use it. This means that one of the criteria for integrating ICT into education is whether in the next few years we will be able to successfully establish a systematic basis for creating, maintaining and using “e-learning materials”. The existing interactive ICT-based study-materials can serve as the basis for e-learning materials, to which we can add electronic materials created in other parts of the world and integrate them into the learning process as well as create new e-textbooks and e-workbooks. The costs of reproducing, distributing and updating electronic materials are several times smaller than the costs of producing printed materials. In 2010 there was over €5.7 million in the national budget of Estonia allocated for textbooks and workbooks and one must add to that what the local governments and parents pay, which amounts to €2.5-3.8 million.

Electronic study materials can be tailored to individual learning styles and used to match the pace of the pupil's progress.

The difference between the cost of an e-book and a printed publication is almost ten-fold as discussed in a recent issue of Newsweek (the cost of producing one hard-cover copy is 4.05 US dollars vs the cost of creating an e-book is 0.50 dollars per download). With the same budget allocation and cost ratio, this means creating learning materials for Estonia can be eight times cheaper – less than €1 million. The same economic reasoning is behind California's decision last year to immediately stop funding conventional textbooks with tax payers' money with the aim of converting all textbooks to digital by 2020 (having started with the ten main mathematics and science textbooks).

The topic of copyright is also important when it comes to study materials created through public procurement. The Creative Commons (CC) legal framework offers a present-day solution to this where some licensing forms allow (free) sharing, modification and distribution of the materials. For example, all OpenCourseware course materials at the Massachusetts Institute of Technology (MIT) are published under the CC license. The Estonian Information Technology Foundation has already translated and published an Estonian version of the CC licensing terms adapted to the local legal environment.

ICT helps take **individual needs** into consideration – while the standardized classroom textbooks and workbooks do not offer much in the way of individual options, electronic learning materials are more flexible in this respect. It is possible to create variations of the learning materials for the most common individual learning styles and to use them in accordance with the pupil's progress rate. Just as important is enriching the learning materials with sound, video and other multimedia in addition to the written word and pictures, which makes learning interactive (either with the help of a computer or of fellow pupils) and playful.

Using ICT in the learning process increases the pupil's **motivation to learn and interest in technology** – enriching learning with modern learning materials and methods cultivates the desire to learn and to move forward (even more so if they take into consideration the learner's individuality). For the generation that is going to school right now, the numerous technical gadgets and services (mobiles, GPS-enabled cameras, MP3-players, tweeting, and Foursquare location-based services) are such a natural part of their everyday lives that an opportunity to learn in a similar environment will make studying more interesting and enjoyable.

Contact with ICT resources awakens their interest in technology which later promotes career choices in favour of engineering / technical fields. This interest is also encouraged by the pupil's involvement if there is an emphasis on the role of tech-savvy pupils in implementing innovations into the learning process. It is important to develop the skills among teachers and administrators to involve pupils in the creation of their learning environment. A recent study on this subject acknowledges, unfortunately, that Estonian pupils are very poorly involved in making decisions about school matters. It is necessary to encourage pupil's readiness to be responsible for their own studies: self-assessment, pupil feedback on the learning process, more individual projects and tasks related to real life.

Implementing large-scale changes that involve the education system as a whole is a time-consuming undertaking requiring a great deal of resources. This is why it is advisable to attempt deeper integration of ICT into studies from a narrower perspective; for example, limited to a specific subject matter. Science, technology, and exact sciences (STEM) are natural choices for an intensive implementation of ICT since their scientific nature offers a rich base for using information technology. Also, concentrating on STEM corresponds to the society's need for

It is necessary to support the pupils' preparedness to be responsible for their own studies.

well-educated engineering/technical workers by increasing interest in studying, among others, priority subjects listed in the "Knowledge-based Estonia" strategy (information and communication technology, biotechnology, materials technology) from an early age, and through that increase the number of pupils wishing to acquire higher education.

Achieving the desired changes requires both the coordination and leadership of activities and offering teachers an opportunity to apply and disseminate good ideas:

- Purposeful and successful implementation of the base-setting changes requires leadership at two levels - both at the state and at the school level. For the former it is necessary to find or create an organization responsible for applying ICT in general education, one that can coordinate the procurement of larger information systems, ICT solutions and software for schools, and initiate sustainable lead ICT projects in general education in cooperation with vocational and higher education. The capacity of schools to procure and develop ICT solutions is limited and/or varies greatly, which is why it is practical to centrally coordinate and consult the development of the more important systems for the purpose of creating standard solutions.

On the other hand, the school principal's role is just as important - the openness of an organization to innovation-minded changes starts with the leader as the one who inspires and leads. This means that we should motivate the school principals more to invite and promote change, apply new technologies to the learning process and acknowledge positive steps in the general education school culture that promote and motivate interest in learning, cooperation and creativity. It is also important to promote the role and the profession of the school principal and to bring visionaries from various spheres of life into the school management.

- On "grass roots level" teachers' innovation fund and teachers' training are these resources that help to promote the consideration of individual needs in the learning process. In order to inspire trialling and integrating digital versions of existing learning materials and creating new materials, we suggest establishing a teachers' innovation fund. Innovative teachers or groups of teachers along with pupils, higher education institutions and ICT enterprises will be able to apply to the fund for money to finance testing new teaching methods and ICT materials, to consolidate subjects using ICT and to create ICT-based support and learning materials. Next to ICT skills, using modern teaching methods and cooperation between various subjects are at least as important. Together with developing new materials, the teachers must receive training on their use, which means changes to teacher training both in basic teacher education and in-service

training. Basic teacher training must provide the skills and ensure the readiness to use ICT in one's subject. Older (and not only) teachers, in addition to in-service training, also require the support of an education technologist; a mentor or other teachers may also be of help.

Considering there are no examples in the world of applying IT so that it changes the education system of the whole country, and that we have good prerequisites for this, Estonia has the potential to become a spokesman for applying ICT to education (i.e. not just e-learning but in the area of integrating ICT deeply into the learning process) as it did in the field of electronic security services (identification, authentication, etc.). Granted, there are several progressive examples of using ICT in the learning process in the world at the level of single schools and communities, but we have the opportunity to undertake innovations in educational technology end-to-end - involving the complete educational system, for example, to deal with the topic of standards, which is growing in importance as the process of the globalization of education continues.

The European Union will soon face similar choices when it comes to regulations, including the topic of software and hardware formats and platforms. Tens of e-readers have emerged in recent years (the more popular of those are Amazon's Kindle, Sony Reader, Barnes & Noble's Nook, Apple iPad), and none of them supports all of the more than 15 most popular e-book formats.

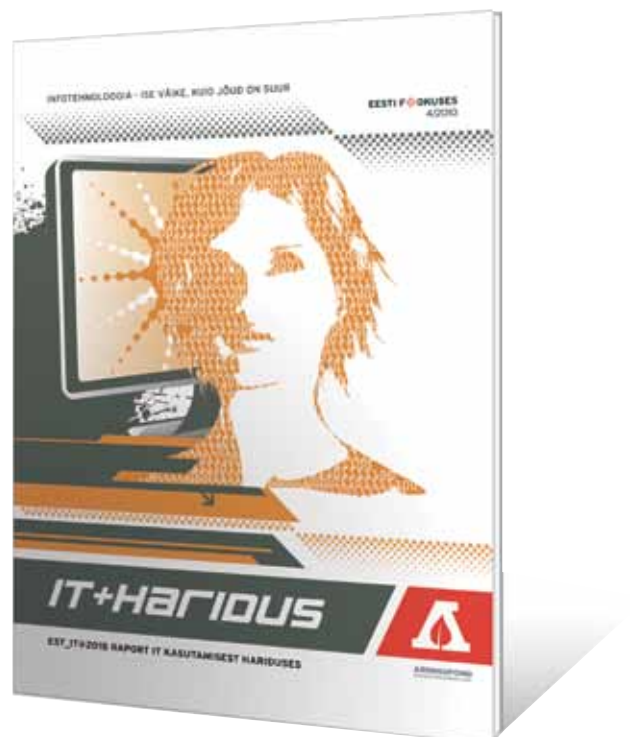
A variety of opportunities is welcome, but it means that making the correct technological choices is even more important so that one does not become locked in with dead-end technologies. Fortunately, our skills in using information technology have not diminished; they have rather been enriched by our experience, and all the work done so far to establish a strong information society infrastructure has created good conditions for "the second coming of the tiger". If we use ICT materials appropriately for a knowledge-based society in every subject and considering every pupil, in ten years each an Estonian pupil will carry an e-schoolbag, which instead of weighing 4-5 kilograms will be ten times lighter, and despite its size will bring the wisdom of the whole world within reach.

This article has been written as a joint task by education and ICT experts on the basis of the Development Fund report "IT+haridus" (IT + education), which analyses the opportunities for applying information technology in education.

Estonia has the potential to become a spokesman in the world for ICT usage in education at the same level as it is in the field of electronic security services.

Further reading:

- The EST_IT@2018 foresight exercise
<http://www.arengufond.ee/eng/foresight/estit2018/>



Innovations in Governance That Leads to Future

Siim Sikkut, Economy Expert, Estonian Development Fund



The role of the public sector in a world of fast and complicated changes is to be the strategic leader of national development that gives the push to preparing for opportunities and threats. This means that governance must be strategically agile – future-looking, interdisciplinary and constantly innovative and experimenting under the stewardship of its leaders. This is the only kind of governance that can take us to the future we envision as our growth vision.

The foundation of Growth Vision is the understanding that taking advantage of opportunities fast, preventing obstacles or at least mitigating their impact will lead Estonia to a successful future.

The role of the public sector in a changing world is to be the leader of strategic development.

Opportunities and threats arise from the changes taking place around and inside Estonia. The speed at which these changes occur and run is increasing; the scales for measuring their impact and the complexity of the tests we face are constantly growing. Aging population and the high unemployment rate caused by recession are examples of these. There is no one and only measure that can be used to resolve all these problems – we

have to work hard in many areas and coordinate our activities. Besides, such measures have to be very flexible, and they must be implemented and developed in parallel to the continuing changes.

Hence policy making that is required for development is becoming increasingly more complicated, but also more important. The role of the public sector in a world of quick and complicated changes is to be the engine of strategic national development, who lays the foundation for a broader (re)alignment of the entire society and economy according to changes. The state apparatus is the only one that has the necessary substance and levers, and it is also the only one that can guarantee a balance between different interests and needs. The public sector itself will become an obstacle to changes and slow down the development of the entire country if it doesn't want or isn't able to perform this role.

The role of a leader in future circumstances is based on governance, which is rather different in comparison to the principles, customs and structure of traditional public administration. Countries that are strategically agile, as the OECD calls them by the example of the Finns (according to the so-called strategic agility management concept), are ready to embrace the changes.

Governance in such countries is based on looking into the future and responding to changing circumstances in a manner that is flexible, ready for innovation and comprehensive. For that heads of state make brave and quick decisions and ensure that they are successfully carried out.

This is what governance in Estonia must be like, as we have to be able to take advantage of the economic opportunities of tomorrow and pass all the tests. Simulation of the possible future paths and important influences in the economy of Estonia during the creation of the growth vision illustrated it very well.

Everything starts from initiative and visions of the future

The state can become the engine of development when its leaders realise that the job of state agencies is causing and managing changes in the economy and society. The role of managers would then be to spread the required way of thinking among their employees by their example and shaping values, demanding relevant results, creating stimuli and launching necessary organisational changes.

Let's be honest - the public sector of Estonia still believes its main task is to guarantee functioning of the state apparatus, i.e. administration of the state. Future public officials are also trained with this in mind.

Instead of administration, the working hours and attention of the highest-ranking managers to the lowest level staff should be dedicated to the management of changes in their fields and organisations in order to make the state constantly more agile. At the *Estonia after the Euro* conference, Jüri Raidla suggested that the prime minister should play the key role in leading development in governance, and he should be assigned the relevant legal obligation for this task and given the legal competence currently lacking.

Leading this development effort thus requires forerunners or leaders. Current managers have to be trained in the required manner in order to increase the number of such leaders and achieve the critical level. Growing future public sector leaders from among present officials and students who will have the ability to manage changes may even be more important for our future success. A good example here is Singapore, where educating leaders with global reach is among the main priorities of their educational institutions and the public sector.

Looking into the future takes a different way of thinking and skills than the usual analysis of the past.

Leading with policy change has to be based on understanding the future, or it will not lead to actual progress in the economy and everyday life. Noticing future opportunities and threats in the public sector requires skills and people, whose task is to constantly monitor and analyse trends and influences, and advise leaders accordingly.

The Development Fund is the only agency to which this task has been assigned in Estonia, but in the United Kingdom, for example, all important state agencies employ such officials. The recently completed *Ireland 2025* vision also highlighted the creation of such a job function and competency in all government agencies as a premise to future success.

The role of these officials is to constantly remind the leaders that looking into the future is important and to help them navigate in future conditions. And these officials are not ordinary analysts. Observing and interpreting trends and changes that are just about to appear requires a different way of thinking and set of skills than ordinary analysis, which looks into the past.

The everyday contribution of foresight officials consists of proposals for new decisions or amendment of old ones. They guarantee that the state approaches the future with a proactive attitude and prepares early on for the circumstances that will arise. Estonia should introduce the requirement that every development plan and strategy should be prepared directly on the basis of analyses of the future environment. Then we can appoint the people (with the resources and a clear task), who prepare these analyses and advise leaders on the future.

Flexible administrative arrangement favours efficient activities

Almost all of the problems and opportunities in Estonia's path of economic development require similar efforts in many fields simultaneously, which must be made by many different participants.

For example, if we want to achieve an increase in the export of quickly growing health care services from Estonia as suggested by the Development Fund, we have to initiate major changes in the cooperation between several state agencies, hospitals and companies in order to improve the export capacity of our health care sector. All these parties agree with this goal and the need for

Working together in the name of a common interest is bureaucratically complicated.

cooperation in principle, but the road to action seems to be very painful and the participants are in desperate need of a leader.

The reasons are the highly inflexible borders between the work areas of various organisations, which mean that resources are also allocated for use in tight frameworks and interests are not broad enough. Investing resources together in common interests in such conditions is difficult, if for no other reason than just for the clumsy bureaucracy. The end result also depends on the contribution of the others in their areas of responsibility and nobody dares to rely on that. This is why good initiatives often fail to get launched, as nobody wants to be the leader with partial resources and limited decision-making power. It is always easier to leave others to worry about the common concerns, but it doesn't take the country forward.

This means that Estonia really needs to reduce obstacles to cooperation between different areas in order to reach effective action in respect of complicated challenges and opportunities, and to get going in general. The goal must be to overcome fragmented governance and the 'every man for himself' approach in its policies.

Making the organisation of public administration more flexible in a manner that would allow for a flexible development and implementation of horizontal policies and service solutions without inflexible borders between agencies would be a way out. Director of PRAXIS Annika Uudelepp has suggested that Estonia could function like a large Lego set. The pieces would be structural units, which correspond to the present functions of current agencies, with their expertise and resources.

The solution is a state apparatus without strict borders between agencies.

They could be quickly assembled in any combination to form task forces or ministries according to (the government's) priorities and they would work together for a common goal over a certain period of time.

Another, quicker option would be increased use of change management with horizontal policy programmes instead of or at least alongside the measures of single ministries that are strictly separated from each other. Separate state budget resources, cross-ministry governance, responsibility and competency would characterise these programmes. In the conditions of recession, we could use a programme like this in the area of foreign economic policy, and we could use it to develop and pilot the management model of the programme as such.

Programmes like this, and actually all solutions to multi-faceted problems and opportunities, work the best when the relevant private and third sector parties also take part in them in addition to public sector agencies. PPP-type cooperation schemes are extremely rare in Estonia. Sufficient knowledge, experience, ideas and resources, without which the state's activities will not have enough impact, could often be included into within PPP scope in order to achieve a common goal.

Constant innovation and courage to experiment

Most of the opportunities and challenges of Estonia can be resolved by developing and implementing innovative solutions, and renewing and developing them further in line with changing circumstances. It is often necessary to be ready for extensive innovation. This means that constant innovation in the public sector makes a state strategically agile.

A few innovations here and there or just development projects and reforms are not enough, although this is what people in the public offices of Estonia are used to think. It is important to get to governance of the state, as innovation and openness to innovation should be its underlying principle and main feature. If this were the case in the state apparatus of Estonia, then people would constantly be thinking creatively about innovations, initiating and carrying out numerous ideas. The only way we can achieve this is by removing any obstacles to innovation in current governance and creating better growth conditions for innovative ideas.

Special attention should thus be given to supporting the experimentation. Creation of functioning and flexible solutions in rapidly changing conditions requires experimentation and sometimes risk-taking, especially when moving into new areas on the back of emerging opportunities. Estonian public sector leaders still fail to see the value of experimentation or are afraid to take risks. However, it is possible to look for new solution models successfully and with limited risk by using pilot projects. They help to establish the path to bigger changes by amplifying and distributing the lessons and results of the pilot project or using them to test different solutions.

Therefore, it is particularly useful to initiate pilot projects in areas that are riskier than the average or where inertia against change is stronger. For example, the need for higher education reform has been discussed in Estonia for years, but nobody has been brave enough to initiate it due to the enormity of the task. This is exactly the kind of situation where a pilot project would help. It is also the reason why a year ago, the Development Fund decided to start developing a model for taking Estonian higher education in ICT to an internationally competitive level. The goal is to create an understanding and lessons about how the entire higher education system of Estonia could become more modern and international.

Testing and experimenting with pilot projects should be encouraged.

New governance leads to growth vision

The above shows that if Estonia wants to become strategically agile, it has to improve the capacity of its governance, think and do many things differently than before in order to ensure that active leading, shared vision across all areas, innovation and piloting become the pillars of governance.

The thoughts and recommendations given in this article are based on the experience of the Development Fund in making proposals to state agencies within the scope of foresight exercises and cooperating with them in the course of which each slightly more innovative or untraditional idea, even if it has potential, tends to drown in the everyday routine of administration.

These are not the only and necessarily new ideas that are circulating – to the contrary, more and more similar ones are being constantly revealed. There is a broader realisation that we need changes and it is important to get to the specific steps of innovation. Soon we want to reveal the ones based on the work of an expert group that has been convening in the framework of the growth vision process, in order to make governance in Estonia suitable for future conditions. We will then be able to make the next development leap with our economy and society – to the future we see in our vision of growth.

Further reading:

- OECD, “Public Governance Reviews: Finland 2010”
- OECD, Forthcoming Reviews “Public Governance Reviews: Estonia”
- Mikko Kosonen’s presentation on developing the vision for Finland
<http://www.arengufond.ee/eng/videocasts/videocast1889/>

Ideas for acceleration of innovation in public sector*

The Development Fund organised a coffee morning in spring 2008 for the purpose of starting a discussion about the importance of innovation and the prospects of accelerating innovation in governance in Estonia. The participants came up with many specific ideas how public sector agencies in Estonia could generate more innovation, both immediately and in a more distant future.

1. Creating an attitude and environment that favour innovation:

- to focus on strategic management instead 'running the house' at the level of the management of ministries;
- to promote and plan public sector innovation in the coalition agreement;
- to expand the reach of the current innovation strategy that focuses on economy and R&D to one that covers different sectors and state agencies, incl. public sector innovation;
- to assess and analyse the changing needs of service consumers/clients and include them in developments (e.g. by the user-driven innovation and living lab principles)

2. Empowerment of innovatively thinking managers and employees:

- to bring more managers who focus on innovation and have the ability to lead change into the public sector;
- to find people who are 'itching' in their positions and let them lead innovation projects;
- to introduce innovative officials to the wider public (as motivation);
- to create a so-called indulgence fund, which would redeem promising leaders of innovation projects in the case of failure (they are not punished in terms of career opportunities).

3. Increasing innovation stimuli and guaranteeing the necessary resources:

- to create stimuli that favour innovation in the budget process in order to avoid 'punishing' the innovator for innovation by depriving them of the funds saved through innovation;
- guaranteeing resources to innovation should be preferred in the allocation of funds (incl. the working time of officials), or separate resources should be prescribed;
- the amounts of regular financing should be made dependent on innovation, e.g. the extent of state-commissioned education could depend largely on the extent and content of innovation applied by institutions of higher education in improving their quality;
- to develop measuring scales for measuring the success of ministries, especially (the quality of) their services;
- to reduce excessive bureaucracy in the public sector (e.g. State Treasury transactions) to leave more resource/time for actual service provision and innovation.

4. Improving cooperation that leads to innovation:

- to make sure that all ministries discuss and participate in innovation discussions and projects to ensure that they are all covered by innovation;
- to increase the rotation of officials between different organisations;
- to increase cooperation and synergy between state agencies by encouraging them to cooperate with the allocation of common resources;
- to further international cooperation in innovation, to combine certain services internationally in the future (e.g. in higher education or health).

* The public sector means all agencies and organisations that are fully or largely funded from government funds and which deal with the development and carrying out of national policies, or provision of public services

The Staff is Everything – the Joy and Pain of Managing a Start-up Company

Heidi Kakko, Head of Investment Division, Estonian Development Fund

Which of the two possible versions is more likely to grow into a successful company: an excellent, unique idea in the hands of a mediocre team or a mediocre business idea in the hands of an experienced, goal-oriented team? The international and local experience alike confirm that management decisions and commitment to an idea are more important than the uniqueness of an idea or financial possibilities.



An entrepreneur may have various visions when they launch a business. Managing a rapidly growing start-up that is aimed at the international market is very different from managing a lifestyle company. In fact, there are more differences than common features, starting from the possible sources of financing the company uses in the early stage (lifestyle companies don't usually appeal to investors) and ending on the management practises needed as the company grows. An ambitious start-up's hopes for success are based on some unique competitive advantage that brings about many things that are unknown: how will consumers react to the new product or service and how will competitors respond. Growth is breathtakingly fast when the company is successful, but it may have to react to changing circumstances in an instant. This is why managing a start-up company is like a rollercoaster ride – the speed is breathtaking and there are unexpected twists and turns. This sets a number of different demands to the leader of a start-up.

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The leader needed in the first stage is a visionary and multitalented, someone who is able to create a business strategy and to make everyone understand it, to attract the best talents to the team and to continue to motivate them and make sure that money doesn't run out. At first, the director has to do a lot of the work oneself. Administration skills become more important as the company grows and the director no longer needs to get most of the things done oneself, because there is no way one could do everything in a growing company anyway. In the worst case scenario a visionary who is too lively will obstruct the implementation of an agreed strategy by constantly offering new ideas. As the organisation grows and the hierarchy deepens, a large part of organisational work moves into the hands of middle managers, revealing another skill that the leader needs to have: delegation. The importance of leadership and motivation increases further and in addition to the company's staff, the director now has to spend more and more time on motivating people who do not work for the company – the partners, the clients and the public. The leader has also become the main salesperson of the company. There is a reason why people say that a company looks like its leader and that people go to work in a company, but leave to get away from the leader (in negative cases). Many outstanding companies are managed by charismatic people who motivate their employees to give their best and in addition to direct management participation in a conscious creation of the organisation's culture, finding time for this by using delegation, which also enables the lower management levels to be successfully involved in all processes.

People who have the competence and personality that is suitable for managing a company in all its development stages are so rare that it's often thought that they don't even exist. The risk and competence of the leader is one of the key issues when an investor is involved in a start-up company and it is something that is discussed in negotiations. Venture capitalists prefer making investments in people and undertakings that have already proven themselves. However, the history of modern business in Estonia is just 20 years long, so there are not many entrepreneurs who have had the chance to gain experience in the field of start-up business aimed at the international market.

In an ideal case, an entrepreneur understands their competencies adequately and actively helps to find managers suitable for each new development stage of a company. It is therefore important that the entrepreneur and the investor are in accord in regards to the need for additional human resources and the timely inclusion of missing competences from the start. In worst cases no mutual understanding is achieved and rumours about an evil investor start spreading, who wants to take the company away from the founders by trying to replace them with a new manager.

Survey by German universities

It focussed on the participation of venture capital and private equity funds in increasing

the value of portfolio companies and showed that successful investors mostly participate in the development of strategy and tactics, including a contact network, and offering new ideas and approaches. In addition to helping a company increase its value, such a contribution also increases the value of the venture capital fund itself and improves the knowledge of investment experts. Working with a company's management is also rather important, including initiation of restructuring or changing the director. No venture capital investor who wants to succeed would take that last step lightly, as bringing in new managers often causes financial and motivation problems.

An investor expects the management of a company to be a priority for the founders and the managerial staff, they expect them to act as an entrepreneur. Paid employees have an option to pack up at 5 pm and enjoy agreed salaries, as stipulated in the Working and Rest Time Act and in their employment contracts. They can also escape like rats from a sinking ship when serious problems arise.

Entrepreneurs should be motivated by the growth of their company's value. They are expected to make personal contributions and they have to take more risks than ordinary employees. They may even have to tighten their belts in the foundation and creation stages, hoping that their companies will be successful in the future.

Not many companies manage to escape discords. It is difficult or even impossible to predict results and market behaviour or make detailed plans in the case of a start-up company that offers a truly new approach. Plans cannot often be carried out to the intended extent, which means that a flexible reaction is required. If a start-up does not become profitable after going through all the intended stages, then as a rule it stops operating when the money runs out and its team, which has gained some new experience, is free to try and make another ambitious idea a success.

A business idea and model alone are not enough. Some undertakings end in failure, which is something all start-up entrepreneurs and venture capitalists have to keep in mind. Of course, it does not mean that investors and entrepreneurs should not increase their chances of success. It makes a big difference when preliminary work can increase the probability of success from 3 per cent to 30 per cent. It is true that failure is still highly likely, but the few extremely good projects that succeed compensate for the losses generated by failures. Entrepreneurs can even become addicted to carrying out ideas, but there is a difference between doing something and getting something done.

Ardo Reinsalu

Chairman of the Board, Curonia Research; Chairman of Investment Expert Committee, Development Fund

The biggest 'pain' in dealing with start-ups is that failure is almost inevitable. It is impossible to grow all start-ups into large generators of profits. And, unlike the American start-up market, failure is something that is not well looked upon in Estonia. An entrepreneur who has gone bankrupt with an undertaking often finds that getting financial backing for their next idea is extremely difficult. However, how will we learn if we do not support gaining experience in these early stages? There are numerous examples in America of business-people who have learnt from their first attempts and found success in the end. Another thing Estonia needs to learn is to pull the plug at the right time and move on. There is a moment when most start-ups realise that they have not achieved the growth they forecast and continuing with the company becomes questionable. Often, people decide to soldier on for emotional reasons (we have buried so many resources in here) and carry on 'burning' money. What you really need to do is be pragmatic and ask yourself whether it would not be more reasonable to invest the money in a new enterprise and remember the lessons this experience has taught you.

Toivo Tänavsuu

Journalist, *Eesti Ekspress*, comments section in *Eesti Ekspress* on 1 July 2010

It is true that the risks involved in a company like this are bigger than in a furniture factory. Not seeing a business model to the end is excusable in a start-up and a valuable lesson for its team. But the worst thing we could do for our young start-up culture here in Estonia is to cultivate the mentality that throwing money away is OK.

Sometimes one can learn more from failure than success. People learn from experience and a good team will start chasing new goals with new ideas. Enterprise and great ideas are an important part of the wings that help to get economy off the ground, but good wing muscles or experienced people are also essential. It is also important to have a support system for growing human capital, because big things and big enterprises start at the grass root level, i.e. from an enterprising attitude and business education.

Killu Tõugu Sanborn

has a PhD in molecular biology and venture capital experience gained in the US currently manages the Oxford Finance Corporation

The goal that most Estonian companies have set themselves is not an approach that would appeal to venture capitalists, i.e. high capacity for growth, risk hedging and bold plans for global success. Changing this attitude requires sufficient amounts of authoritative venture capital that would promote the creation and development of rapidly growing companies. Secondly, entrepreneurs and the entire business landscape should be educated consistently and at an international level so they understand what companies with great growth potential are, why we should be building them, how they are organised, what we can expect from them and what are their advantages and shortcomings. We have to carry on supporting those who have tried to fly high, but burnt their wings - their experience is more valuable than the experience of those who haven't even tried yet, who haven't learned from failure yet, or haven't had the courage to set high goals. Estonia has capable people and ambitious ideas, but it doesn't have a system that would support, tolerate and even favour them. However, we can change this. The advantage of Estonia is that changing opinions, knowledge and attitudes is relatively easy, as the country is small and there are only a few media channels. We should use this for and in favour of enterprise and 'thinking big'. We also have enough patriotism to motivate people, even if 'typical Estonians' don't agree with this - it is very noticeable from the outside.

Will Cardwell

Head of Aalto Centre of Entrepreneurship:

Growing excellent start-ups depends on the network: the ability to create capital syndicates, partnerships, open doors for new sales. Estonia should cooperate with those in the Nordic countries who have already developed the best networks and find out how Estonia could bring value to these networks and thereby improve its own benefits. My experience tells me that local business angel and venture capital investments as well as the entry of international investors must both be encouraged in Estonia. Estonia should create strong ties with the world's leading venture capital and start-up centres such as Silicon Valley, the Boston area in the US, Israel, Singapore, Japan, China, the UK, India, and of course its Nordic neighbours. However, creation of meaningful networks with good and strong contacts is very expensive and time-consuming. I believe that building cooperation networks that really work and keeping them running is currently the most important thing that the Estonian government should do for start-ups.

Rapidly growing start-up companies are the cream of start-ups - they grow into flagships of entrepreneurship that are an example and source of motivation for the ambitious start-ups of the next generations. Being at the top sets its own requirements. You have to compete with the best of the best on the world market. This means that no manager is too capable, no investor is too well connected and no team is too experienced. In Estonia, where we are still lagging behind in growing internationally capable teams and companies, we have to pay even more attention to the development of human capital, use all possible support structures wisely and absorb experience from places where the results of best practice are clearly evident. People who have long-term experience in growing start-up companies advise to take a broad approach to the development of start-up companies and managers, and Estonia is advised to work on the development of cooperation networks and to learn with the support of successful countries.

In conclusion: Building rapidly growing successful companies financed by venture capital is too resource-intensive to be done half-heartedly and without committing yourself one hundred percent. This is why nurturing start-up leaders and teams is essential, as the human factor is extremely important. The staff is everything, both in terms of founders and managers as well as through the creation of a support system and support network outside the company and the people in the company's network.

Development Fund's forum

Health Services 2018

On 7 October 2010 at 12–17.30 at the
conference centre of Swissôtel, Tallinn

The theme of the forum is global development trends of health services and the possibilities of Estonia to be part of the international health service business. What are the export models used and the markets available? Which is the most suitable strategy for Estonia to make the health services the new growth area of our economy?



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