Searching for the micro multinationals

A PwC report on behalf of Microsoft and Baltic Development Forum

2014

Jon Arwidson, Patrik Dreber, Magnus Kolsjö et al. 2014-05-20
Top of Digital Europe was launched at the 16th Baltic Development Forum Summit in Turku, Finland, 3-4 June 2014. Top of Digital Europe is part of Baltic Development Forum (BDF) that has for years been driving ICT policy discussions in the Baltic Sea Region.

www.bdforum.org

Foreword

The countries in the Baltic Sea Region (BSR) have established themselves as front runners in many aspects of the ICT sector. Over the last decade they have succeeded in attracting huge foreign direct investments in this highly competitive sector. The BSR is still among the world leading ICT regions with high level competences, talents, start-ups, and track record. However, as we are entering a new era with new challenges and tougher global competition, how can the BSR maintain and further develop its leading role?

There is a need to focus on joint business-society opportunities and take action on key areas within the digital economy to continue to be internationally competitive and further growth the potential.

On the initiative of BDF and Microsoft the regional ICT think tank “Top of Digital Europe” has been established to support and promote the Baltic Sea Region as a leader in the ICT sector. “Top of Digital Europe” is a neutral, non-profit think-tank. It facilitates dialogue on how the region’s role can be strengthened and provides concrete recommendations as to how this role can be pursued and how to further fuel the digital economy.

This report is the first delivery from “Top of Digital Europe”, and is a study on the state and ecosystem of ICT-related start-ups and SMEs, the so-called “Micro-multinationals” in the Baltic Sea Region. It is a first and much needed step towards a better understanding of the potential within the fast growing digital market.

Our hope with the report is to put a spotlight on some of the growth barriers and opportunities of SMEs in the ICT sector and the challenges they are facing when they want to expand their business to new markets. But also to inspire key policy makers and businesses cross borders to join forces and to act on some of the concrete policy recommendations.

Launched together with this report at the BDF Summit in Turku, Finland, June 2014, “Top of Digital Europe” welcomes partners within business, politics, academia and other actors with an interest in ICT as a driver for growth and competitiveness in the Baltic Sea Region and beyond.

This report is elaborated by PricewaterhouseCoopers (PwC) in Sweden, Finland, Estonia and Denmark, on behalf of Microsoft and BDF. PwC is responsible for the report, except for the foreword and afterword. An Advisory Group for “Top of Digital Europe”, key representatives within the digital sector in the region, has contributed with comments to the policy recommendations.

The work is conducted by Microsoft and BDF. Joakim Lundblad, Chamber of Industry & Commerce in Southern Sweden, has given priceless support and advice to the scope and content to the report.

Hans Brask
Director, Baltic Development Forum

Nanna-Louise Wildfang Linde
Assistant General Counsel WE-N, Microsoft

ICT SME REPORT
Executive Summary

The global market place has changed dramatically for smaller and medium-sized companies with the evolution of the Internet. Today, almost any company can potentially sell its products and services anywhere in the world. With Internet as a channel for sales, marketing and production, small and medium-sized companies can expand their businesses across the globe and become a so-called “micro multinational.”

The ICT-sector has a relatively large number of micro multinationals. The aim of this study was to learn more about the entrepreneurial environment within the ICT-sector in order to better understand how public policies in the Baltic Sea Region could enable and strengthen the ICT related SMEs’ growth. The countries in scope for this study were Sweden, Finland, Denmark, and Estonia.

The results of the study indicate that there are several cross border obstacles which SMEs in the studied countries face on their way to becoming international. Some examples of these findings are:

Difficulties in finding competence on the labour market and securing highly specialised skills.

A need for extended understanding of connection with other markets.

Difficulties in obtaining seed financing and financing for the development or realization of new products or ideas.

A need for affordable business support services within such areas as accounting, legal advice, and marketing.

A central cross border finding is also comprised of the fact that a number of the interviewed SMEs, regardless of the sub-region, do not, at present, have the intention or wish to grow or expand their businesses. This is an important finding as public policies in such cases may not have the desired effect on the ICT sector.

Based on our findings, we have suggested eight cross border recommendations in order to facilitate and stimulate the international growth of SMEs in the ICT-sector. Among the eight recommendations, there are three initiatives that we would like to highlight below that we believe will be of greater benefit to help ICT SMEs to grow within the Baltic Sea Region:

“Baltic Sea Region Information Society Business Academy”
An academy for SME-employees that primarily aims at further developing ICT-related niche competencies, but also to enable cross border networking within the sector. This academy should be a cooperative effort between existing universities and private companies, whereby the training takes place in different Baltic Sea Region countries, and should include a large number of virtual courses.

Baltic Sea Region crowd funding platform
Financing at early stages in the business life cycle, so called “seed financing”, is a perceived problem for many SMEs. We, therefore recommend that a Baltic Sea Region crowd funding platform is implemented, committed to SMEs in the region. This platform should then operate on a multinational level to promote Baltic Sea Region SMEs.

Tax reduction for business support services
In order to facilitate the access to, and use, of business support services that SMEs need to grow their business into a micro multinational we recommend a tax reduction for the SME that uses these services. The idea is inspired by the tax reduction currently available, for example, in Finland and Sweden where people who hire services for repairs, conversion, and extension or cleaning, maintenance and laundry can have a tax reduction of a certain percentage on the labour costs, limited to a certain amount.

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Introduction to the Study

A few decades ago the global market places were dominated by larger corporations; size mattered when starting up activities in new countries. A physical presence was often needed in order to complete sales transactions across borders. For smaller and mid-size companies, local markets were the easier choice and often the only choice. This has changed dramatically with the Internet and Internet enabled technologies such as cloud computing, social media, big data analytics and mobile services.

In today’s digital economy, almost any company can potentially sell its products and services anywhere in the world, regardless of financial strength, number of employees, or even production facilities for that matter. Most products and services, regardless of industry sector, have an ICT component. Even a small one-man soap producer in the Baltic Sea region, that normally falls outside of an ICT sector definition region, can manufacture its products in China and then, sell them to customers in Indonesia, Mexico or Chile at the click of a button. With the Internet as a channel for sales, marketing, and sometimes even production, any great idea can be spread to the four corners of the world. The common term for these companies is “micro-multinationals”. A business segment with a relatively large number of such Micro Multinationals is the ICT sector (“Information, Communication, and Technology”).

The aim of this study is to learn more about the entrepreneurial environment within the ICT-sector in order to better understand how public policy could enable and strengthen the ICT-related SMEs’ growth and empowerment within the Baltic Sea region. One of the underlying assumptions is that existing entrepreneurs may foster and inspire an entrepreneurial neighbour hood peer effect, and thus increase entrepreneurship in the long run.

Our approach in this study has been to conduct a country analysis for each of the four regions in scope, Sweden, Finland, Estonia, and Denmark. The individual country analysis is based on a desktop study where different statistical sources have been measured in order to draw conclusions on the state of the ICT environment in each country. Parallel with the desktop analysis, we have also conducted interviews in the sub-regions (Malmö, Tallinn, and Helsinki; 25 interviews in Copenhagen) with SMEs to obtain a better understanding of the practical difficulties entrepreneurs may have in growing their companies into micro multinationals.

Observations and recommendations which we believe could facilitate growth for these ICT related companies going forward have been formulated from these countries analyses. Recommendations proposed in this study are not intended to be complete reforms ready to be implemented in each country. The proposals are based on common issues within the countries aimed at promoting hands-on policy initiatives both within and between the countries. Each country has its own policy environment with its own framework to be considered. Also, the recommendations are formulated on the basis of the desktop research and the interviews, both focusing solely on SMEs within the ICT sector. In shaping implementable policy, consideration must be given to the fact that the issues addressed are part of a larger business environment which is not covered in this study.

Brief Description of our Approach

In accordance with the Commissioner’s request, PwC has conducted this study in two parallel work streams, a desktop study per country, Sweden, Denmark, Estonia, and Finland, as well as through 30 interviews with local entrepreneurs in each of the sub-regions; Malmö, Tallinn, and Helsinki. A total of 25 interviews were conducted in Copenhagen.

2.1 DEFINITION OF THE ICT SECTOR

Defining attempts have been made to define the ICT sector, but there is a general lack of relevant public and statistical information about ICT-related companies and Micro Multinationals. The public statistics offices in Sweden, Denmark, Estonia and Finland gather information about companies’ activities as such, but are not able to collect information as to the degree to which the companies rely on ICT related products and services to support their business models.

To overcome the shortcomings of the existing classification systems, the OECD has developed a definition for the wider ICT sector or the “information society” that has become commonly accepted and is being used by the OECD and the International Telecommunication Union (“ITU”). The definition is based on the International Standard Industry Classification (“ISIC”), but captures the cross-sectoral nature of the ICT-sector. This makes the definition useful as it provides a map between new- eologies and existing traditional statistical sources.

PwC has, with regards to the limitations in the data collected from third parties, based the analysis on the above mentioned OECD definition.1

2.2 THE DESKTOP STUDIES

The desktop study was completed by local PwC teams in Denmark, Estonia, Finland and Sweden to ensure that PwC made full use of local statistical material, previous studies and contextual understanding. In a broad sense there were five areas that this part of the study should cover:

The amount of (ICT-related) SMEs, potential micro-multinationals, and their share of the economy,

Start-up rate

Firm growth and expansion

Export rate

Specific policy programs for SMEs (ICT related)

For this purpose, and on the basis of the OECD definition of the ICT sector, the official statistical sources provided the most relevant information for our purposes. The majority of the statistics were also comparable between countries, to a large extent due to the fact that the national bureaus have to report data to Eurostat. However, in some cases local statistics offices have been able to provide data specific to a certain area which their counterparts in other countries have not been able to produce with reasonable cost and effort.

2.3 THE INTERVIEWS

In order to capture an entrepreneurial view of the ICT SME environment, 30 interviews were conducted, divided between the four sub-regions of Malmö, Helsinki, Copenhagen (25 interviews), and Tallinn. These interviews were mainly held by telephone or through personal meetings. All sub-regions used the same template of questions so that cross-sub-region conclusions could be drawn from the received information. All interviews were provided with the questions in advance. The interviews were held in the local language and the transcripts were then translated into English. The interviewer had the possibility to freely elaborating on areas of interest or “digging deeper” where they felt necessary. On average, the interviews took 50 minutes.
Sweden and Malmö

Authors: Patrik Dreber, Magnus Koljo, and Andrea Sandin Viberg
KEY FINDINGS

Sweden has a relatively large ICT sector at 4.9 percent of GDP in 2010, compared with the EU27 average of 4.38 percent. In 2012, a total of 66.9 percent of the companies were SMEs and of those, 5.3 percent, were active in the wider ICT sector including content and media production.

ICT SMEs seem to be a lot more resilient than average SMEs, showing a lower fail rate both in the start-up phase and in later stages. Content and media companies in particular demonstrate a higher resilience with an average fail rate over the five year period of 2008-2012 of 3.45 percent. In the same period, the overall average fail rate for SMEs was 5.77 percent.

Sweden in many aspects provides a good environment for potential micro- and small and medium-sized enterprises (SMEs) to establish and develop business undertakings. Perhaps the most visible of these is the World Bank’s Doing Business report, which gives Sweden 8th place between 2003 and 2013, and as 19th place for the years 2008-2012.

For instance, the awareness among SMEs of the economic benefits of e-participation, such as savings in time and reduced costs, is high compared to other EU countries.

The majority of the interviewed companies have business activities in both the content and media sector in 2012 (ICT SMEs). The share of ICT SMEs in Sweden has, as share of the GDP, recovered some of the losses due to the financial crisis the sector has experienced. In later years, the importance of the ICT sector for employment has diminished as a result of adjustments to Sweden’s GDP. After the financial crisis the sector has, as share of the GDP, recovered somewhat and also shows signs of improved productivity.

ICT SMEs: where is the market?
It should, however, be noted that the concerns regarding the Baltic countries are, to a large extent, based on preconceived notions as most of the interviewees did not have any experience from doing business with or about the Baltic region. Since this was a recurring opinion among the Swedish interviewees, it could have a negative effect on the attempts to promote the Baltic Sea Region as an internationally competitive growth region.

3.4.2. Securing of Skills and Knowledge

In the Economic Freedom of the World Index Sweden ranks 17th in labour freedom and 9th in OECD’s Index Employment Protection Sweden has a score of 2.52 out of 6 regarding protection of permanent workers against individual and collective dismissals. This can be compared to the OECD average of 2.29.

According to data from Eurostat, the main reason SMEs in Sweden looking for personnel with ICT skills are finding it difficult to recruit is the lack of academic ICT related qualifications and/or training. The interviewees have repeatedly stated that it is difficult to find skilled programmers and developers, especially those who are also educated in business and have experience within the field. In a survey conducted in 2007, a total of 70 percent of the interviewees said that they had experienced a reason for difficulties in filling vacancies. This is higher than the EU28 average of 62 percent. The lack of qualified personnel among applicants for ICT related positions can partially be related to a low enrolment rate in secondary and tertiary education, where Sweden ranks 39th and 18th according to the Network Readiness Index. The quality of the Swedish mathematics and science education also ranks low, 36th place compared to Sweden’s overall Network Readiness rank of 18th.

“In informal networks are fundamental for SMEs and one of the main drivers behind this business sector”

There are, however, some cases where smaller, formal networks with peers in similar situations have been considered to be highly valuable. For example, one interviewee has been using a forum/think tank where people from different markets and industries with different skills and knowledge are able to lift problems and help each other with problem solving which is considered to have been highly valuable. Other interviewees use similar concepts, although in virtual form on social media such as LinkedIn.

When it comes to formal and/or government supported networks, the views tend to vary. These vary from interviewees requesting more government supported forums where entrepreneurs who want to start a business can come together, to those thinking there are too many meetings and seminars about ideas without any real support of the kind start-ups actually need. Support with product development and the practical testing of their idea or product.

3.5 INNOVATION

Sweden is among the top nations when it comes to innovation, ranked 2nd with 61.36 points in the Global Innovation Index 2013. The weakest areas are considered to be trade and competition, and creative outputs, especially intangible assets, but the country is still among the top 40 nations even in its weakest areas. In spite of these weak points, Sweden displays a general strength in all pillars in the Global Innovation Index, and is also among the leaders when it comes to the quality of innovation, ranking number eight among high income countries.

Sweden, together with Denmark, Finland and Germany, one of the innovation leaders in Europe. However, Sweden has among the lowest innovation performance growth. The country’s largest relative strength is, according to the Innovation Union Scoreboard, “Human Resources” measuring a relatively high quota of new doctorate graduates and youths who have completed tertiary and secondary education. The largest relative weaknesses are, according to “Firm innovation”, i.e. R&D expenditure in the business sector and Non-R&D innovation expenditures, and “Economic effect”, such as sales of new to market and new to firm innovation, and knowledge intensive service exports.

3.6 PUBLIC POLICY AND SUPPORT

3.6.1 Public Policy

The Swedish Corporate tax rate is 23 percent, putting it below both the OECD average of 25.5 percent27 and the EU27 average of 23.0 percent.28 The tax burden or “tax wedge” on labour income for single persons without children is 12.9 percent compared to the OECD average of 35.9 percent.27 In total, Sweden ranks number 41 as regards paying taxes in the Doing Business Index. Important factors to this ranking are the high tax levels but also the number of hours (22 per year) that it takes for a company to file their tax returns.

3.6.2 Financial Support

There are many different forms of public financial support available to startups and SMEs, loans, grants and venture capital. The table below shows some examples of these. At the Swedish “Point of Single Contact” Verksam.se there is a fuller guide to the different forms of support available.

Of the interviewed companies, very few have used any form of external financing. However, many of the interviewees also stated that they have had for it while others have actively chosen not to use external financing as they feel the cost is too high and they do not want to lose control over their company and in the direction in which they develop it.

Most of the interviewees think they have access to external financing if they would need it as some say they would like to have more knowledge about the kind of financing options that are available. Those who already have used external financing have often done so to finance a new idea or project.

“It is difficult to find proper financing in Sweden as most of the venture capitalists want a high return on investment and significant influence businesses that they do not know anything about.”

3.6.3 Non-Financial Support

As with financial support, there are many variations of non-financial support. At Verksam.se the government has gathered all information and e-services for starting and running a business, as well as providing several on-line tools and templates. Besides the on-line help, for example, Almi, the Swedish Trade and Investment Council and several regional organisations offer advice and support for SMEs.

A need for support that recurs in several interviews is the need for support when entering new markets. For example, help with cultural understanding, marketing and taxation

**FIGURE 4**

**NEW PATENTS ORIGINATING FROM SWEDEN per million of inhabitants 2011-2013**

<table>
<thead>
<tr>
<th>Provider</th>
<th>VINNOVA</th>
<th>VINNOVA</th>
<th>ALMI INVEST</th>
<th>ALMI</th>
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</thead>
<tbody>
<tr>
<td>Sources of public support</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VINNOVA</td>
<td>VINNOVA</td>
<td>ALMI INVEST</td>
<td>ALMI</td>
<td></td>
</tr>
<tr>
<td>Venture capital</td>
<td>2.450</td>
<td>2.400</td>
<td>2.350</td>
<td>2.300</td>
</tr>
<tr>
<td>Export loans</td>
<td>2.250</td>
<td>2.200</td>
<td>2.150</td>
<td>2.100</td>
</tr>
<tr>
<td>Start-up support</td>
<td></td>
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<tr>
<td>SMEs wanting to expand to new market</td>
<td></td>
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<tr>
<td>SMEs expanding to new markets</td>
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<td>SMEs expanding to new markets</td>
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<tr>
<td>SMEs in expansion phase</td>
<td></td>
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<tr>
<td>Export loans to firms with less than 50 employees</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>The entrepreneur must be unemployed and fulfill certain requirements</td>
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<td></td>
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<tr>
<td>SMEs in expansion phase</td>
<td></td>
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<tr>
<td>115-230.000 EUR in the seed phase and up to 440.000 EUR in the expansion phase.</td>
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</tr>
<tr>
<td>To help SMEs expand and create capacities for new sustainable ideas and companies to develop.</td>
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<tr>
<td>To help SMEs expand and create capacities for new sustainable ideas and companies to develop.</td>
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</tbody>
</table>

**TABLE 3**

**SWEDISH PUBLIC EMPLOYMENT SERVICE**

**Public Policy**

Most of the interviewees are aware of the possibility to seek public support but they can only name a few of the possible sources, if any. The most commonly named are Almi and Vinnova. Those who have some knowledge about the different forms of support are often negative. They say the public support is not used in an efficient manner and that the individuals involved in the decision making regarding support lack adequate knowledge of entrepreneur- ship and innovation.

In addition, it can be concluded that even though most of the interviewees state that they are aware of possible sources of public support, none of the interviewees have mentioned Verksam.se. However, several of the interviewees have requested the type of support offered by Verksam.se, it can be concluded that the general awareness of this single-point-of-access for information and support is low among the interviewed SMEs.

“A source of information to turn to in order to obtain information and help, such as the customer services department of the Swedish Tax Agency, would be helpful.”
3.6.5 Requested Policies and Support from the Interviewees

In general, the interviewees request “more carrot and less stick.” The government must show that entrepreneurship is something good and that they want small companies to grow. There are several ways that the government can do this according to the interviewed companies: simplifying the procedure around taxes, making it easier and less expensive to employ people, reducing the regulation associated with e-commerce, introduce apprenticeship educations for ICT and expanding the forms of non-financial support offered.

3.7 Perceived Obstacles for ICT SMEs and Potential Micro Multinationals

Lack of competence:

The lack of competence comes in many different forms. The interviewees have listed the lack of ICT skills, that the candidates applying for a position are too specialised to work in a small company, that it is difficult to find personnel who have an understanding for entrepreneurship and SMEs.

Difficulties to expand to new markets:

Many lack the necessary knowledge in their own company or the resources to pay for professional services required to venture into new markets. The companies need, for example, knowledge about cultural differences, the local market place and tax and other regulations.

High risk and high costs associated with hiring:

The interviewed companies who have hired or thought of hiring personnel believe that the costs and risk for doing so are excessively high. Some also say that potential employees regard accepting a position in a start-up or SME to imply a higher risk than working for a larger company. Many think it is too big of a responsibility to hire people and say that they rather work with subcontractors and as a part of a network with other SMEs.
Basic Data

<table>
<thead>
<tr>
<th>Population (2013)</th>
<th>5,602,628</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP (PPS per capita 2012)</td>
<td>32,100 €</td>
</tr>
</tbody>
</table>

4.1 KEY FINDINGS

The most important aspect for the Danish ICT interviewees was the use of their networks to secure a customer base, business support and advice as regards their activities.

The largest barrier seemed to be the difficulty in securing financing for their companies and, in particular, due to the fact that the Danish banks increased their requirements for SME financing in Denmark in 2009.

4.2 CHARACTERISTICS AND ATTITUDES OF THE INTERVIEWED COMPANIES

The interviewees from Copenhagen mainly consisted of representatives from companies who deliver or act as advisors for different IT support systems to other SMEs geographically spread around Denmark. No obvious pattern was noted as regards the companies participating in this study. However, the initial hit rate, when approaching companies and asking them to participate in the study was very low. Less than 1 percent, wanted to participate.

4.3 THE GENERAL BUSINESS ENVIRONMENT

Denmark ranks as number 10 in the Index of Economic Freedom 2014, and as number 14 in the Economic Freedom of the World Report 2013. The economic freedom is limited by the comparatively high taxes (27%), financial freedom (26%) and property freedom (27%), as well as freedom from corruption (25%).

In 2013 and 2014 Denmark ranked as number 3 in the World Bank’s and International Finance Corporation’s Doing Business Index.

In the Doing Business Index, Denmark ranks well in comparison the OECD average in several ways that can be of importance to start-ups and SMEs looking to become micro-multinationals.

However, on a global level Denmark ranks as number 40 in 2014, with a procedures and 5.5 days to start a business and a minimum capital for a limited company in the equivalent of 23.9 percent of income per capita in Denmark. This can be compared with the OECD average of 33 procedures, 11.1 days and a 10.4 percent capital requirement or New Zealand, ranking as number one, with 1 procedure, 0.5 days and no capital requirement.

According to the Doing Business Index Denmark also has some work to do in simplifying and speeding up the processes around enforcing contracts, the country ranks as number 32 with 35 procedures and ranks as number 32 with 40 days to enforce a contract. The index also includes the cost of enforcing a contract as a percentage of the claim. With a cost factor of 23.3 percent Denmark ranks as number 32 in the area of enforcing a contract.

It was particularly emphasized by our interviewees, that the administrative burden of establishing and running a company in Denmark is quite low. This information is supported by the fact that between 2001-2002 the government has succeeded in cutting companies’ administrative burdens by 25 percent (14, 27). The governmental focus of minimizing administrative burdens for Danish companies is still a very high priority (14). The Danish Business Authority (Danish Ministry of Finance) launched several different new initiatives in 2012 aimed at decreasing company administrative burdens.

Company focus – A forum which all companies can contact regarding requests for simplification of administrative demands and tasks.

Prevention of burdens – The Danish Business Authority established at task force called Team Effective Regulation (TER) with the objective to make sure that new rules do not imply unnecessary new burdens for businesses.

EU smart regulation – In extension to TER in Denmark, the Danish Business Authority cooperate closely with the EU in regards to limiting administrative burdens.

AMVAB – Which is the Danish equivalent of the SCM method (Standard Cost Model), a tool for measuring and pin-pointing administrative burdens.

4.3.1 Markets and Growth Plans

According to the interviewees from the Danish survey the companies are fairly equally distributed between those who do not currently have growth ambitions, companies that find it adequate to only expand in Denmark within the next 5 years, and companies who wish to expand internationally. The primary export markets that have been considered relevant by the interviewees are mainly Scandinavian countries, but Germany is also mentioned as a potential market for expansion.

4.3.2 Securing of Skills and Knowledge

Our company is comprised of very talented and specialized technical personnel, so staffing is definitely a barrier. This applies particularly if we have to attract foreign specialists to come to work in Denmark, where labour costs for technical consultants are unreasonably high in comparison with other countries, due to the high Danish income taxes.

According to the Economic Freedom of the World index Denmark’s regulatory environment is one of the world’s most efficient. Relatively flexible hiring and dismissal regulations sustain an efficient labour market. In the above mentioned report Denmark is ranked as the 4th best nation in regards to labour freedom and the 2nd best in regard to business freedom.

In regard to personal and collective dismissals Denmark ranks as number 18 in 2013. This Danish figure is almost equivalent to the OECD average, which is 2.59 on a scale from 0-6.

The below chart, illustrating, in percent, the different reasons why vacancies have been hard to fill, indicates that Denmark lacks a sufficient number of applicants with ICT skills and with academic ICT related qualification.

Note: As shown in Figure 7 (page 16), the portion of ICT professionals in the Danish workforce is below the figures from Sweden, Finland and Estonia, but still well above the EU average of less than 4 percent.

The interviewees contacted in our study were divided according to the perception of the difficulty in finding competent staff for their businesses. Some found it, for example, very difficult to find a competent lead developers at affordable salary rates for a small and young company, whereas others saw no issues in the accessibility to IT skilled employees in the current state of the market.

A total of 81 percent of the population in Denmark is using the Internet daily, which is well above the EU average of 55 percent. People that have never used the Internet...
4.4 ICT SMES

The number of ICT SMEs per million inhabitants was approximately 2,500 in 2011. This was a minor increase compared to 2010.

Furthermore, the number of ICT SMEs was approximately 5 percent of all SMEs in Denmark in 2011. All in all, there were approximately 18,000 ICT SMEs in Denmark in 2011 and approximately 377,000 SMEs in total.

4.3.3 Use of Networks

The use of networks and relevant

account for a small 6 percent which is well below the EU average of 22 percent.

New data on mobile use of the internet shows that in Denmark, a total of 61 percent of the population accessed the internet via mobile devices in 2012, one of the highest rates along with Luxembourg, Sweden, and the UK and well above the EU average of 36 percent. In the same manner, 63 percent of the companies in Denmark provided their employees with portable devices to access the internet in 2012, which put Denmark amongst the top countries together with the Czech Republic and Finland, and well above the EU average of 48 percent.

According to a survey conducted by the European Schoolnet, more than 80 percent of Danish 8th grade students have broadband connection of more than 10 mbps. In network readiness index at an overall level, Denmark ranked in the top 5 places from the previous year, the country among the Nordic countries. Down four places from the previous year, the country worsened its ranking in almost two-thirds of developed countries.

The use of networks and relevant

The number of ICT SMEs per million inhabitants was approximately 2,500 in 2011. This was a minor increase compared to 2010.

Furthermore, the number of ICT SMEs was approximately 5 percent of all SMEs in Denmark in 2011. All in all, there were approximately 18,000 ICT SMEs in Denmark in 2011 and approximately 377,000 SMEs in total.

In terms of non-financial support, we have been extremely satisfied with the support we have received from the Danish consulate in Chicago, which should really be exposed as a best practice example. They have offered us a large number of growth-based initiatives and they are generally a super professional incubator for our company in the Chicago region.

4.5 INNOVATION

The innovation aspect has generally not been commented upon as a pressing issue during the majority of the interviewees. Innovation has mostly been referred to as a response to growing market competition. As an example, the market for standard ERP and software infrastructure consultancy solutions is quite saturated in Denmark, whereas the market for cloud based solutions is not yet as saturated, which provides added possibilities for growth in this new market.

“The competition in the traditional Microsoft infrastructure market is very tough both locally and globally since it is something that has been around for quite some time. As a consequence of this, and other factors, we have chosen to intensify our focus on the cloud based solutions, given that the local market is not as tough.”

4.6 PUBLIC POLICY AND SUPPORT

“We are living in a whole new era – the financial downturn in 2009 has changed the way businesses operate and make money. Before we focused on the ‘functions’ our clients needed, now money. Before we focused on the businesses operate and make money. Before we focused on the ‘functions’ our clients needed, now”

4.6.1 Public Policy

The Danish Corporate tax is 25 percent and will be gradually reduced to 22 percent by 2016, putting it below both the OECD average of 25.5 percent and the EU27 average of 23.9 percent. Furthermore, the effective rate might be lower, as business expenses and depreciations are tax deductible. The tax burden or “tax wedge” on labour income for single persons without children earning 50 percent of the average wage is 38.2 percent compared to the OECD average of 35.9 percent. Eurostat reports that the tax wedge for single persons without children is 77 percent of the average wage. Measured as such, the Danish tax wedge in 2012 was 36.6 percent compared to the EU27 average of 39.9 percent.

8.2. Financial Support

Vækstfonden (The Danish Growth Fund) is a government funded venture fund that aims to create and support more start-ups as well as growth among companies in Denmark by providing capital and industry expertise. Since 1992, Vækstfonden have provided more than DKK 3 billion through co-investments to approximately 5,000 companies. As a part of Danish entrepreneurial environment and to reach as wide as possible, Vækstfonden collaborates with other venture funds, private investors, financial institutions, innovation communities and regional growth hubs such as Accelerate and CONNECT Denmark, which primarily support start-ups with entrepreneurial and venture experience.

Another early-stage investor is DTU Symbion, which is Denmark’s largest pre-seed venture capital investor. Its primary areas of focus are life science, ICT, medico and technologies within cleantech. Like other Danish pre-seed investors, DTU Symbion mostly invests government capital on behalf of the Danish Agency for Science, Technology and Innovation. The venture funds mentioned above are drivers for many startups in Denmark. Nevertheless, the ICT companies interviewed for this report have solely relied on bank financing and were not in a dialog with any venture funds. Our interviewees initial financing of the ICT startups were mainly done via banks, which allowed an overdraft for the company, but since the financial crisis, banks in Denmark have greatly intensified the demand for hard risk and security for new company startups. Because of the recent sharpened demands by Danish banks, the difficulty of finding financial support was regarded as the largest barrier for almost all of our interviewees.

4.6.3 General Awareness of Available Support

Our interviewees did not mention any real viable alternative to finance their company startups other than via Danish banks. Denmark does have initiatives in place to assist companies during their start-up phase, e.g. The Growth Fund (www.vf.dk), which some of our interviewees mentioned. This however, was not considered to comprise a better alternative than their bank.
Finland and Helsinki

Authors:
Jukka Karimaa, Marko Korhakoski
and Lauri Lehtovuori
5.1 KEY FINDINGS

Finnish industries are heavily dominated by SME companies as they represent some 99 percent of all enterprises operating from a data-base. This is also the case within the Finnish ICT sector: SME ICT companies represent some six percent of total SME companies. During the past few years, the Finnish ICT SMEs have, on average, outpaced the SME segment in terms of revenue growth; between 2010 and 2013 the Finnish ICT companies grew some 7.4 percent compared to 5.6 percent of all of the SME companies. Furthermore, on average they employ more people than other industries, with 25 employees compared to 28 employees, respectively applying the same time period.

During the past few years, Finland has undergone a cultural shift that has raised awareness of and interest in the ICT industry, especially as regards software entrepreneurship. Most notable are companies such as Rovio, the developer of Angry Birds franchise, and Supercell which was one of the most profitable mobile game developers in 2013 with their games Clash of Clans and Hay Day and who has served as an example for new, young entrepreneurs. The key personnel and founders of these successful, new companies are committed to building the basis for the future development of Finnish ICT industry. According to this study, these examples and new start-up initiatives have a positive impact on the attitudes and growth ambitions of Finnish technology entrepreneurs.

It should be noted that the small size of the Finnish domestic market requires growth companies to expand into new geographical markets rather swiftly and their expansion often begins with other Northern European countries.

5.2 CHARACTERISTICS AND ATTITUDES OF THE INTERVIEWED COMPANIES

The interviewed companies in the Helsinki sub-region consist mainly of ICT companies employing a maximum of ten people and they have been founded after 2000. The majority of the companies operate within software development, IT consulting or data infrastructure. Technology entrepreneurship has traditionally been male-dominant and less than 10 percent of the interviewees were female.

For this study, over 300 companies were contacted in order to conduct 60 interviews. Roughly speaking, early-stage companies (founded after 2011) with high growth plans were more willing to give an interview than companies that have been operating for a longer period of time and who do not have high growth ambitions.

5.3 THE GENERAL BUSINESS ENVIRONMENT


In the World Bank’s and International Finance Corporation’s Doing Business Index 2014, Finland kept its 12th place. In areas important to start-up businesses, for example, the ease of starting a business, Finland fell from 8th to 15th between 2013 to 2014. In Finland it takes 14 days to start a business and a minimum capital for a limited company to be equivalent to 11 percent of the Finnish income per capita. This can be compared with the OECD average of 5 procedures, 11 days and a 10.4 percent capital requirement or New Zealand, ranking as number one, with 1 procedure, 0.5 days and no capital requirement.

However, in many indicators, Finland bores close to the OECD averages. For example, in terms of the cost of establishing a company as percentage of income per capita and paid-in minimum capital (percentage of income per capita), Finland ranks fairly average with 1.1 and 7.0 percent compared with the OECD averages 3.6 and 16.4. In protecting investors, Finland ranks at 68. In the OECD ranking regarding enforcing contracts, Finland kept its 8th place and was ranked 3rd in resolving insolvency, but only 14th in securing credit.

Finland was ranked 5th globally by the International Telecommunication Union’s in its development index, 7th by the Web Index of the World Wide Web Foundation and 1st in the World Economic Forum’s Networked Readiness Index while ranking reaches the top of the NRI rankings for the first time, thanks to improvements across all parameters. It shows progress on two-thirds of the 54 indicators of the NRI and posts a very consistent performance across all categories of the NRI. Especially interesting are the high rankings in laws relating to ICTs (4), availability of latest technologies (3), impact of ICTs on new services and products (3), number of procedures to start a business (5) and venture capital availability (5). However, rankings in total tax rate, percentage profits (8) and intensity of local competition (68) are not as flattering.

The Digital Agenda for Europe measures digitalisation in multiple categories. In exporting of ICT services, Finland comes in at 17th of total exports in 2012. The levels of computer skills are relatively high with the percentage of population with high computer skills being 43 percent, well above the EU27 average of 26.6 percent. Finland has the highest share of ICT-professionals in the total workforce at just below 6 percent.

Finland’s strong competitiveness is built on high levels of innovation. The economy continues to be amongst the world leaders in several of the 15 economic freedoms, including maintaining property rights and freedom from corruption. The sound regulatory environment encourages entrepreneurial activity and innovation. Commercial operations are handled with transparency and speed, and corruption is perceived as almost non-existent.

Several companies interviewed for this study noted that the overall business environment in Finland is supportive towards ICT companies and ICT entrepreneurship are both highly valued in the country. Further, Finland was seen as a relatively business environment due to stable legal and regulatory environment. Several interviewees saw a need for a change in the overall business culture as larger corporate cooperations are, according to the interviewee, reluctant to buy from or partner with small companies. This can be challenging for the smaller companies to grow their business in the already small market.

5.4 ICT SMES

In recent years’ economic turmoil the ICT-sector’s share of GDP declined steeply by almost four percent. The decline in ICT-sector personnel has not been as drastic however, but severance payments are not overly burdensome. According to OECD’s Indicators of Employment Protection 2013 report, Finland has a score of 2.17 out of 6 regarding protection of permanent workers against individual and collective dismissals. On average the score among OECD countries was 2.39.

According to studies by Eurostat, 85 percent of ICT enterprises considered the reasons such as difficult access for ICT specialist jobs to be the lack of, or too few, applicants with ICT skills, while above the EU27 average of 73 percent, only 56 percent of ICT professionals in Finland were not as big a concern, 43 percent of ICT enterprises considered the requests to share view this high of expanding the business rapidly to other geographical markets. However, in the Doing Business rankings by OECD, Finland renewed its ranking at 8th in 2014 in trading across borders. ICT services account for 7 percent of total exports (above the EU average) while goods account for 9 percent of total exports (above EU average).

5.4.2 Securing of Skills and Knowledge

In the 2014 Index of Economic Freedom, Finland was rated 15th in terms of labour freedom. The non-salary cost of employing a worker is high in Finland but severance payments are not overly burdensome. According to OECD’s Indicators of Employment Protection 2013 report, Finland has a score of 2.17 out of 6 regarding protection of permanent workers against individual and collective dismissals. On average the score among OECD countries was 2.39.

Sweden, Russia and Germany continue to dominate as Finland’s most important trade partners. International trade is an important factor for businesses, something that was also reflected in the conducted interviews. The vast majority of the interviewed companies considered the Finnish domestic market to be rather small.

Based on the interviews it can be stated that early-stage companies with high ambition levels and growth plans regard the Baltic and Scandinavian countries as their logical first steps in expanding their businesses and building international presence. However, these early-stage companies have plans to operate in larger markets, such as in the United States and China, including businesses that have remained small in terms of annual revenue and employment often do not be excessive. This is below the EU28 average of 53 percent but higher than Sweden’s 43 percent.
Germany. Its innovation performance is above the EU average for most indicators. Most notable, however, has been the network being formed within the operations of the Start-up-Säätiö. The foundation was established in 2012 to assist the development of the ICT industry and to provide non-financial support to ICT SMEs. The network is open to all ICT companies and organisations operating under it.

Finland has a relatively high number of patents filed per million of inhabitants in 2010–2012, with 341, 328 and 337 respectively, compared to Sweden with 273, 249 and 217. The EPO ICT patents at the national level have been fewer, around half of that of Sweden, with 531, 496 and 163 in 2008–2010.

In the Global Innovation Index (2013) Finland is ranked 6th out of the 142 countries compared, behind the 2nd ranked Sweden but before other Nordic and Baltic countries. Particularly high rankings were received in institutions [2] and human capital and research (5). Market sophistication and business sophistication were ranked out of the top-10 at 33 and 14, respectively, which may indicate that Finland has high levels of research with lower capabilities of monetizing the results.

Finland has a well-developed ecosystem for innovation and innovation-led business. The government has been very active in applying for EU funds and innovation financing for years. The government has introduced public research funding for research and industry development. The most important target group consists of small and medium enterprises (SMEs) helping them to promoting innovation for years, with a national innovation strategy, various on entrepreneurs and start-ups in the regions and technology parks.

In conclusion, Finland’s ICT ecosystem is dynamic and growing. In addition to startups, there are several things that foster start-up companies and growth entrepreneurs in Finland and the Baltic Areas. The most notable, however, has been the network being formed within the operations of the Start-up-Säätiö. The foundation was established in 2012 to assist the development of the ICT industry and to provide non-financial support to ICT SMEs. The network is open to all ICT companies and organisations operating under it.
such as Tekes and Finnvera. This is not surprising as both of the organisations are generally known in the business world. The question remains how well the companies know which instruments and programs are available to be utilised in their business operations. To elaborate, the young innovative companies (YIC) program by Tekes was widely recognized by many of the interviewees that fulfil the requirements of that program, however, newer instruments such as the Vigo program were not as familiar.

5.6.4 Requested Policies and Support from the Interviewees

The policy and support recommendations can be categorized in three main categories: 1) developing early-stage and growth funding instruments and programs 2) developing taxation to boost growth for new companies and 3) changes to labour laws.

The seed and venture capital market has been developing in Finland during the past few years but can still be described as rather small. The Finnish Funding Agency for Technology and Innovation, Tekes, plays a key role in funding early-stage innovative ICT companies. According to the interviews, Tekes and other public organisations providing financial support are seen as bureaucratic sources of funding. In order to receive funding from these organisations, the companies have to deal with a significant amount of paperwork and usually the funding will be delivered in exchange for receipts for work performed i.e. the company has to carry a financial risk and first be able make payments and receive funding from Tekes afterwards. Many of the interviewees were hoping to see these processes become more efficient and transparent.

In addition, the inclusion of a smart money component was widely requested. Examples were given where the government would take a more active part in private investment. One way could be that the government would match the private arm’s length investments with grants, rather than equity.

Taxation and labour laws were also seen as too heavy for early-stage companies. It was hoped that Finland would pay closer attention to helping to grow young businesses through taxation and some suggested Finland should benchmark Estonia for these purposes. Hiring full-time workforce was seen challenging by many companies. Firstly, after the employee trial period has ended it might be difficult to adjust the workforce and secondly the indirect wage costs impose a financial risk to the company.
6.1 KEY FINDINGS

Nearly 98 percent of Estonian ICT companies are SMEs. The total number of ICT companies is increasing, at the same time the total share of the ICT sector has not grown at the same pace. It is notable that the number of personnel working in ICT companies remained almost the same over the years. This leads us to conclude that the increase of ICT companies is caused by an employment market shift – instead of employment, ICT specialists prefer to act as subcontractors.

The new generation of ICT entrepreneurs is more focused on product development than on providing services. This shift has taken place with the help of support measures which young companies have often utilised, such as grants and/or mentoring programs.

Due to the small size of the internal Estonian market, many companies focus on foreign markets, mainly Scandinavia. Growth is hindered by the lack of qualified specialists and the lack of skills in business development, R&D, and marketing. International expansion is also difficult due to the general lack of trust towards companies from Eastern Europe. Almost social security contributions are considered excessively high for ICT companies, which can lead to negatively impact competitiveness.

6.2 CHARACTERISTICS AND ATTITUDES OF THE INTERVIEWED COMPANIES

It was relatively difficult to gain access from the entrepreneurs for the interviews. Interview requests were usually turned down by companies who had zero employees and small turnovers. Companies who had achieved some kind of success were keener to participate. Only one out of the 50 interviewees was a woman.

“The in the future, the only barrier will be my old age.”

The activities of the micro companies participating in the survey were quite versatile and ranged from digital media production to software development. Certain of the target companies required convincing that their business was related to the ICT sector, which meant that some background work was required by the interviewer.

Most Estonian companies were optimistic about the future and growth, but there was significant part of entrepreneurs who were satisfied with their current size and did not have plans for growth.

6.3 THE GENERAL BUSINESS ENVIRONMENT

The Doing Business Index ranks Estonia in 22nd position in 2014 and it was number 21 in 2013. Estonia is a member of the European Union and the Eurozone. In the OECD Product Market Regulation, Estonia has improved its ranking when it comes to the Barriers to entrepreneurship indicator. In 2008 it had the 46th position and in 2013 the position was number 13. In “Barrier to trade and investment” Estonia ranked as 26 in 2008 and in 2013 the country fell to the 24th place. In State Control aspects Estonia was ranked at the 4th position in 2008, as well as in 2013. In 2008, the Estonian over-all position in Product Market Regulation was at number 9 and during 2013 that position fell to number 13.

The Global Competitiveness Report 2013 ranks Estonia in 32nd place and points out the country’s excellent educational system, highly developed goods, and the financial market. On the public sector side, the positive note is Estonia’s strong commitment to advancing technological readiness and macroeconomic stability sustained by well managed public finances. Compared to the rest of the EU, Estonia has a more flexible and efficient labor market.26 Starting a business takes only 6.1 days, while the OECD average is 11 days. New enterprises can be registered via e-services and the current record is 18 minutes and 3 seconds.

The number of start-ups measured, as the number of companies per million of inhabitants, shows a small increase between 2004 and 2011, from 4.353 to 6.443, with one exceptional year of 2008.

Based on studies conducted by World Economic Forum in 2009/2010, Estonia was ranked at 25th place with a score of 4.8 in the network readiness index. This score remained the same in the following year, although the ranking had, then, declined to 28th place. By 2012, the score had risen to 51 and the ranking to 24th place.27 In 2013, the score remained the same but the ranking had declined to 22nd place.28 The 2012 Global Information Technology Report classifies Estonia as a transitional country in terms of digitalisation, while other countries in the CEE region are classified as advanced although coming in at a lower level in the network readiness index.

The Digital Agenda for Europe applies a couple of measures to categorise digitalisation. The summary of these categories points out the following.29

1) Broadband in 2013 – The take-up of fixed broadband was lower than the average in the EU, although the 45 mobile broadband is more available and its take-up is above the EU average.

2) Internet usage and digital skills in 2013 – 75 percent of the Estonians use internet on a regular basis, compared with an average of 69 per cent in mobile devices to connect to internet was the same as the EU average, 37 percent. Use of internet banking in Estonia is 68 percent while in the EU the average is 46 percent. Computer skills are at the same level as the EU average. E-commerce was at a significantly lower level in Estonia compared with the EU, with an average of only 23 percent, while the EU27 average was 45 percent. Furthermore, Estonia is highly ranked in e-government rankings based on a citizen uptake of 53 percent using filled-in forms.

3) Education 2013 – Access to computers in schools is, on an average, at European level, but many of the schools have high speed broadband connections. Teachers use ICT equipment frequently in lessons and students often have their own laptops or mobile phones. Teachers have confidence in the skills of students and the support for ICT tools is strong.

4) ICT R&D 2013 – In the period between 2007 and 2012, only 20 companies received financing from the EU Framework Program, and 7 companies received financing for R&D activities. A total of 32 percent of the funding went to research centres and universities. The main areas of funded activities were education, future and emerging technologies, and trust worthy ICT. Areas with low participation were photonics and organic and large area electronics.

As a result of high Internet penetration, there are many online services only 6.1 days, while the share grew at a slower pace than new companies being formed, points to the fact that each new company adds actually less value to the economy than what the previously newly founded companies added. This could be explained due to two factors: 1) new companies have already decreased their size, or 2) employees have founded their own companies and are working as subcontractors for larger ones and owners of new companies have founded the companies to manage their own personal finances.

6.4 ICT SMEs

The Estonian ICT sector share was 5.9 percent of GDP in 2009, and during the following years this rose to 6.8 percent, but in 2012 the share fell to 5.5 percent. In 2013, the sector share rose back to 6.9 percent. The share of ICT sector companies in terms of number of companies has been steadily rising from 4.5 percent of total enterprises, to 5.84 percent of total enterprises.

The number of ICT SMEs has grown over the period of 2010-2013. Due to this, the share of ICT SMEs has increased from 5.1 percent in 2010 to 5.8 percent in 2012. The number of startup companies per year increased from 752 in 2010 to 1249 in 2013. Latest data is not available.

The number of ICT SMEs grows in hand with the total number of ICT companies. Estonia is somewhat stable around 97 percent but is slowly increasing and by the end of 2013 it was approaching to 98 percent.

Despite the fact that the number of companies has been increasing, the number of employees in ICT sector had significant growth in 2012 when it increased by 2.2). After that, it increased by 2.3) in 2013. It increased again, by 7.1) and the size of ICT sector surpassed the 2.2) in 2013. The number of ICT companies grew, while the number of employees remained the same: Taking account of the fact that the ICT sector share grew at a slower pace than new companies being formed, points to the fact that each new company adds actually less value to the economy than what the previously newly founded companies added. This could be explained due to two factors: 1) new companies have already decreased their size, or 2) employees have founded their own companies and are working as subcontractors for larger ones and owners of new companies have founded the companies to manage their own personal finances.

6.4.1 Markets and Growth Plans

According to the Economic Freedom Index, Estonia is ranked on 1st place in the world,20 Estonia’s main trading partners are the countries around the Baltic Sea. One of the more important sectors is logistics and there is heavy emphasis on transit of goods between Western Europe and Russia. Estonian companies are interested in the Scandinavian market as they get better prices for their goods and services. Many Scandinavian companies have invested in Estonia and, therefore, a significant part of

<table>
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<th>FIGURE 12</th>
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<td><strong>TABLE 7</strong></td>
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| **ESTONIA’S MAIN IMPORT MARKETS**
| Share of imports (%) |
| Finland | 16.90 |
| Germany | 10.58 |
| Sweden | 10.12 |
| Latvia | 9.52 |
| Lithuania | 8.96 |
| Poland | 7.95 |
| Russia | 5.77 |
| United Kingdom | 6.18 |
| China | 3.36 |
| Netherlands | 3.29 |

| **TABLE 8** |
| **ESTONIA’S MAIN EXPORT MARKETS**
| Share of exports (%) |
| Sweden | 16.79 |
| Finland | 16.13 |
| Russia | 11.44 |
| Latvia | 10.37 |
| Lithuania | 5.86 |
| Germany | 5.46 |
| Norway | 3.65 |
| United States | 2.92 |
| Denmark | 2.60 |
| China | 2.31 |
Estonia's international trade is undertaken between international parent companies and their Estonian subsidiaries. According to data reported by Eurostat, the main reason why SMEs in Estonia, who are looking for personnel with ICT skills, considers it hard to recruit these skills is that there is a lack of candidates with ICT skills. The second reason is that the salary requests are too high. Hence, there is a problem for the Estonian economy in that there are not enough ICT specialists. It is predicted that by 2020, Estonia will need 4,500 experts within this field. The lack of these specialists is a severe limitation to the development and growth of ICT companies.

6.5 INNOVATION

The second identified issue related to skills, according to the interviewees, is the lack of business development skills. This problem is currently primarily solved by including experienced people on the boards of the companies, either as investors of mentors.

6.4.3 Use of Networks

From the interviews, it has been noted that the awareness of formal and informal networks seems to quite be low. For example, during the interviews, the interviewers often had to explain the meaning of the term “network” and give practical examples. Among the companies who were aware of networks, they preferred informal networks that were based on personal contacts. Formal networking websites were somewhat less valued and more suitable for the time when a company had grown over certain size. Preference of informal and personal networks can be explained by the small size of the country where it is possible to get a hold on somebody by just one or two phone calls. This actually compensates official participation. The preference of personal networking can be observed in the case of trade fairs, which were highly regarded among interviewees. Instead of being a part in formal delegation companies often saw their chances in direct contacts that could be established in fairs.

Most common types of networking were mentoring programs, accelerators and incubators. In addition, one company had created its own support network for foreign entrepreneurs in Estonia.

6.6 Financial Support

The tax for corporate entities in Estonia is 21 percent, although enterprises do not have to pay income tax on funds reinvested into the company. The enterprise income tax is only applicable to dividends. Several interviewees pointed out that the social security contributions are too high, the tax burden percentage of labour cost is around 40 percent. Considering the fact that wages in the ICT sector are higher than average, this becomes a significant burden according to some of the interview companies. Some companies have even mentioned that labour related costs can make up for 50 percent of a company’s expenses.

Public procurement procedures should be changed so that they are quality, not only cheapest price.

The current system is going through a reorganizing phase and some support measures are being discontinued while new ones are being created. The Estonian entrepreneurship 2014-2020 has three goals: 1) Information and communication technology horizontally across sectors, 2) R&D and technologies, and services, and 3) efficient use of resources. In order to achieve these goals, a focus has been placed on developing networks, creating market demand for innovative products, supporting startup companies on how to find new sectors and niches. The main implementing agencies are: 1) Estonian Development Fund – long term policy and economic analysis, 2) KredEx – offers different financial instruments (loans, credit insurance, state guarantees), and 3) Enterprise Estonia (EAS) – focused on so creating and supporting entrepreneurship and entrepreneurial policy, consulting, training and grants. Full information on starting a company and applying for different support measures can be found in point of single contact eee.

6.6.1 Financial Support

Enterprise Estonia (EAS) is the largest and most well-known agency that provides financial support. The interviewed ICT companies preferred grants and only a few had considered financial instruments. The most widely used measures were financial support for the reorganizing phase and some support measures can make up for 50 percent of a company’s expenses.

The expected result of the program is achieving the goals of created companies in a manner described in the business plan.

The subsidy is granted in order to develop an economic activity with the purpose to obtain a sufficient income.

TABLE 9

GRANTS THAT WERE MENTIONED IN INTERVIEWS

<table>
<thead>
<tr>
<th>Provider</th>
<th>EAS</th>
<th>EAS</th>
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<tbody>
<tr>
<td>Name:</td>
<td></td>
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<tr>
<td>Start-up grant</td>
<td>Development grant</td>
<td>Business start-up subsidy</td>
</tr>
<tr>
<td>Phase:</td>
<td>Foun ding the company</td>
<td>Already established company</td>
</tr>
<tr>
<td>Limit:</td>
<td>5 000 €</td>
<td>32 000 €</td>
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The expected result of the program is achieving the goals of created companies in a manner described in the business plan. The subsidy is granted in order to develop an economic activity with the purpose to obtain a sufficient income.

6.6.2 Non-Financial Support

Mentoring programs organized by the EAS are offered to entrepreneurs who have been active 3-5 years and who have specific business goals in terms of what they want to achieve. Findings from the interviews indicated that younger entrepreneurs considered this to be somewhat valuable for but not crucial to their business. Privatized founded business accelerators programs were not referred to the same degree, however, the interviewees spoke highly of them due to the strong focus on business development of such programs. On some occasions it was mentioned that founders of accelerators invested into companies.

6.6.3 General Awareness of Available Support

Overall, the awareness was quite high in regards to financial support measures. Companies knew about different agencies providing grants and about the related procedures. The most commonly mentioned support was the EAS grants, but since the EAS is a relatively well-known state institution, this was not surprising. Awareness of non-financial support was significantly lower. The support that was most often mentioned were mentoring and certain training programs, but, overall, this was not considered to be very important.

6.6.4 Requested Policies and Support from the Interviewees

The policy suggestions from interviews were primarily related to 3 grants, 3 tax, and 3 mentoring.
Grant related measures included making the system more transparent and less bureaucratic. The main complaint towards the EAS was that since the application to receive any kind of grant from the EAS is too lengthy, it is hardly worth the effort to apply as the time spent had a higher value than the actual grant.

Tax related suggestions referred to tax exemptions on social security contributions for micro companies in order to make it easier to start a company. Another suggestion was to provide sector specific remissions.

The third type of suggestion was related to mentoring and advisory services. Several companies said that it would be of interest to have international mentoring programs. The suggestions included creating more specific chambers of information, either based on specific activities, such as a legal counsel, or based on target markets, such as exporters targeting the UK.

6.7
PE RCEIVED OBSTACLES FOR ICT SMES AND POTENTIAL MICRO MULTINATIONALS

Lack of qualified labour
This problem has been mentioned in several interviews, as well as in many studies and newspaper articles. Essentially, companies want to expand but there are not enough specialists available.

There have been many solutions proposed to deal with this problem, starting from improving to educational system, to making IT education vocational or easing up on the immigration of specialists.

Insufficient sales and business development skills
Several companies mentioned in the interviews that when they started they did not consult with anyone, although, at the same time, many said that they need someone with sales and business development skills in order for the company to grow. To deal with such issues, especially within the area of business development, mentoring programs were started, but unfortunately amongst the people interviewed, only a few had participated in these activities.

Niche education is lacking
Many companies requested more specific skillsets from the labour market, while only very general IT specialists were available. As a result, they had to focus on internal training programs to turn these general IT personnel into specialists in specific fields. Due to the small size of the country, this issue will probably not be solved by the educational system, due to very high costs of creating specific educational programs.

Trust
Companies trying to become international had encountered a serious barrier of trust as they were perceived as having inferior skills or being untrustworthy because of their base location.

“The most significant barrier, so far, has been convincing multinational clients that Estonian competencies are as good as British competencies.”

Official networks are undervalued
Most companies were not part of the official networks. Some said that the official networking institutions like the association of Estonian ICT companies was suitable for medium and large companies. Despite lack of official networks most interviewees mentioned consultancies with friends whom they knew to have entrepreneurial experience of working in same business area, so the value of informal networking was much higher.

Within the European Union several initiatives have been taken to support digitalisation and pave the way for new and growing SMEs. Among these initiatives are the Digital Agenda, The Small Business Act for Europe, Enterprise Europe Network and Erasmus for Young Entrepreneurs. Entrepreneurship, innovation and new technologies are at the core of the Europe 2020 growth strategy and an essential part of many of the seven flagship initiatives. Successful ICT SMEs can also contribute to meet the challenges identified by providing for example solutions enabling a more resource efficient Europe or opportunities for jobs and social inclusion.

7.1
THE DIGITAL AGENDA FOR EUROPE

The Digital Agenda for Europe is one of the seven flagship initiatives of the Europe 2020 strategy. The strategy was launched in 2010 and identified seven main obstacles for Europe to harness the full potential of digitalisation:

1) Fragmented digital markets
2) Lack of interoperability
3) Rising cybercrime and risk of low trust in networks
4) Lack of investment in networks
5) Insufficient research and innovation efforts
6) Lack of digital literacy and skills
7) Missed opportunities in addressing societal challenges

The Agenda was updated in December 2012. The full implantation of the Digital Agenda is estimated to increase the European GDP with 5 percent or 1,500 Euros per person, over the next eight years creating 3.8 million new jobs in the long term.

In all the Digital Agenda contains 101 actions organised in seven pillars. Progress is measured towards 13 specific goals and reported annually in the Digital Agenda Scoreboard where achievements can be followed per member state.

In brief the seven pillars cover among other things:

1) Digital single market – boosting the content download business, open up public data resources for re-use, establishing a single area for online payments and further protect EU consumers in cyberspace
2) Interoperability and standards – improved standard-setting procedures, legislation on ICT interoperability and the European Interoperability Framework implemented by member states
3) Trust and security – a coordinated European response to cyber-attacks and reinforced rules on personal data protection
4) Fast and ultra-fast Internet access – funding of high speed broadband, national broadband plans in member states and safeguarding the open Internet for consumers
5) Research and innovation – a new generation of web-based applications and services, web entrepreneurs action plan,
a more business friendly environment for start-ups and doubling the annual public spending on ICT research and development by member states.

- Enhancing digital literacy, skills and inclusion - digital literacy policies in member states, grand coalition for digital jobs and skills and prioritising digital literacy and skills in the 'New skills for jobs' flagship
- ICT-enabled benefits for EU society - seamless cross-border e-government services. Points of Single Contact should function as fully fledged e-government centres and measures to support cultural and creative industries.

7.2 THE INNOVATION UNION

Another of the seven flagship initiatives is the Innovation Union. The initiative aims to make Europe into a world-class science performer, remove obstacles to innovation and revolutionise the way public and private sectors work together. To reach the goals set out the initiative comprises 34 different action points covering for example education and skills development, mobility and cross-border cooperation, initiatives to ensure simple access and stronger involvement of SMEs in research and innovation programmes, and initiatives to enhance access to finance for innovative companies.

7.3 THE SMALL BUSINESS ACT FOR EUROPE

The Small Business Act for Europe from 2008 pre-dates the Europe 2020 strategy and was developed under the Lisbon Growth and jobs strategy. It has since been enhanced and supplemented through a review process and with the Entrepreneurship 2020 Action Plan, which is a continuation of the Small Business Act. The Small Business Act was reviewed in 2013 emphasizing the need for SMEs' access to finance, easier access for SMEs, helping SMEs to contribute to a resource-efficient economy, and promoting entrepreneurship, job creation and inclusive growth. Similar actions are also a part of the Entrepreneurship 2020 Action Plan built on three pillars:

1. Entrepreneurial education and training
2. Creation of an environment where entrepreneurs can flourish and grow, for example, through better access to finance, easier business transfers and unblocking new business opportunities in the digital age
3. Developing role models and reaching out to specific groups such as women, seniors, migrants, the unemployed, young people

One example of a contribution to the Entrepreneurship 2020 Action Plan is Startup Europe, focusing on strengthening the business environment for web and ICT entrepreneurs.

7.4 NETWORKS AND EXCHANGE PROGRAMMES

There are two key network and exchange programmes available to SMEs and entrepreneurs. They are the Enterprise Europe Network and Erasmus for Young Entrepreneurs.

Enterprise Europe Network brings together 600 organisations in more than 30 countries to offer advice, access to finance and research funding, and help with networking and matchmaking between potential business partners in new markets.

Erasmus for Young Entrepreneurs is a part of the Youth on the Move flagship initiative. The programme aims to give young entrepreneurs the chance to learn from more experienced entrepreneurs in other countries. The exchange is meant to be beneficial for both parties where the young entrepreneur gains skills to run a small business and the host will get fresh perspectives and the opportunity to learn about a foreign market.

7.5 INFORMATION AND E-SERVICES

The European Union has worked purposefully to collect and disseminate information regarding regulations, business support and entrepreneurship to promote growth and the creation of new companies, as well as to promote the free movement within the Union. Information is available both at a EU level through the European Small Business Portal® and Your Europe® where it is also possible to find comprehensive information about the more important regulations and support systems in each member state.

On a member state level, each country has a point of single contact where it is possible to access e-services and find the information necessary to start and run a business.

Through the pilot project Simple Procedures Online for Cross-Border Services (SPOCs), the EU, together with the member states, worked between 2009 and 2012 to build the next generation of the points of single contact. The project resulted in a number of building blocks that can be used to offer cross-border e-services through the points of single contact. The result of SPOC is now being further developed within the e-SENS large scale pilot.

8.1 INTRODUCTION

The four countries in scope for this study are geographically close to one another and the four different country reports that have been presented above show that there are many common aspects of the SME ICT environment between the countries. The need for specialised competences is one such area which many of the interviewed entrepreneurs in all of the countries have seen as important to future growth.

However, there are also many ways in which these countries differ, both in terms of general business culture and in terms of more tangible aspects, such as, the manner in which the labour market policies and taxation laws are formulated. There are also a number of local initiatives in these countries that are already in place to promote the empowerment and growth of SME companies.

8.2 KEY OBSERVATIONS

8.2.1 Sweden

There is a broad consensus in Swedish policy regarding the comprehensive welfare state. A consequence of this is a higher than average tax pressure. Because of this, we are not suggesting any major changes in taxation.

Another challenge for Sweden is the high cost and extensive regulation of labour. Labour regulation is a coin of two sides. It can appear burdensome for the companies but it also provides security for the employees. There are room for reform within the Swedish model of collective bargaining but it would be irresponsible to take part in a race to the bottom regarding labour rights. Instead Sweden ought to press for international agreements raising the level of worker protection.

The third challenge is within the educational system. Sweden lags badly in many international comparisons as regards both to enrolment, the quality of the education and the results achieved by the students. It is therefore important to focus available resources to improve both secondary and tertiary education.

8.2.2 Denmark

The interviewees in the Danish ICT sample were using their networks to a large extent to build and manage their customer base, but also in order to receive useful business support and advice. Networks are therefore deemed as an important aspect in order to grow their businesses.

Concerning the obstacles to growth, financing was brought forward as the major barrier to growth, especially since the new requirements from the post-financial crisis when it comes to bank loans.

Danish immigration policies were also highlighted as a barrier to growth, making it more difficult for Danish firms to use these means to overcome the lack of local competences with the help of foreign labour. The relatively high income tax.
rate further builds on this problem since it increases the motivation, according to some of the interviewees, for some companies to establish themselves abroad. They perceive Denmark to be disadvantageous in terms of serving as a base when running an international ICT company.

8.2.3 Finland

First of all, Finland should review its taxation, labour and funding policies in order to boost new growth in SME ICT companies.

Secondly, it should be made easy for companies to find (or train) skilled workforce, especially in international sales and marketing and software development. This could be facilitated through pan-Baltic education programs where different nationalities would learn key competencies and also build cross-country networks in their field of work.

Lastly, venture capital and ‘smart money’ investment activities should be made more effective and transparent. Baltic countries could have an effective asymmetric funding program/vehicles that would have more resources than current national funding schemes and which could attract interest from the wider public i.e. international venture capitalists. Boosting cross-border investments within the Baltic area and attracting international venture capital to the Baltic area could have a significant positive impact on the development of individual companies and on the area in general.

8.2.4 Estonia

Many entrepreneurs said that the pressure of taxes is high for start-up SMEs, but because the policy goal in Estonia is to keep the tax system as simple as possible, there are no suggestions for major changes in the system.

The first suggestion is to build cross-border coaching and networking in order to gain trust and establish contacts more efficiently. This type of coaching should lead to door-opening activities as the SMEs can leverage from the existing networks.

Secondly, any measure adding skilled ICT workers to the market is most welcomed. However, this requires long-term strategies and does not result in quick wins.

Concrete suggestions that could generate quick wins would be measures helping SMEs to gain skills in areas of international business development, sales, and marketing. These measures can be either investment support for the learning or hiring programs.

A third suggestion for measures is investment support for niche education abroad. This can help SMEs to secure necessary skills much quicker, supports growth and can help them to be more successful in Baltic Sea Region.

9 CROSS BORDER RECOMMENDATIONS

The similarities and differences mentioned above under section 8 are, of course, making it challenging to formulate cross border recommendations applicable to all Baltic Sea Region states. Our objective, when formulating these recommendations, has been to address as many issues as possible as regards the common challenges faced by these entrepreneurs in all four countries.

Our ambition with these recommendations is to inspire reforms that can improve the business environment and help SMEs in the Baltic Sea Region to become micro-multinationals. Our proposals do not provide a detailed road-map for each reform, but rather, recommendations and ideas that may require further studies and preparations. Some of these proposals may be technically easier to implement than others, since a functional framework upon which they can be built already exists.

However, the fact that they are technically easy to implement does not necessarily mean that they are politically easy to bring to fruition.

It should also, however, be noted that a central cross border finding is that a number of the interviewed SMEs, regardless of sub-region, do not, at present, have the intention or wish to grow or expand their businesses. This is an important finding since public policies in these cases may not have the desired effect on the sector as a whole.

These recommendations are the results of a common effort by the four local PwC teams editing the country reports.

9.1 “BALTIC SEA REGION INFORMATION SOCIETY BUSINESS ACADEMY”

During the study, we have noted that several of the interviewed SMEs consider it to be difficult to secure highly specialized skills, as well as secure personnel possessing a broad range of knowledge (e.g. technology knowledge, as well as business knowledge). We have also found that there is a demand for better networks between peer, as well as between large companies. In order to meet these needs and barriers, we recommend the implementation of a niche education forum/Academy e.g. “Baltic Information Society Business Academy”.

In our opinion the academy should organize educational activities for SMEs in the Baltic Sea region in cooperation with universities and private companies. This could, for example, include educational programs with courses organized in varying countries to which the SMEs can send their employees in order for them to gain specific technology skills and business training, learn about the cultural differences, and network with SMEs in the other countries. Even though we believe it is important to include universities in this cooperation the training offered through the academy should not be limited to academic courses. There is also a need for specialized vocational training. Other
offered activities should, for example, include virtual guest lectures from experienced entrepreneurs or the possibility to participate in courses sponsored by other companies.

One of the reasons behind this recommendation is that it is more cost-effective to organise this kind of exchange and training on a multinational level. The academy will increase the possibility for SMEs to further educate their employees according to their specific needs and, hence, reduce the problems related to finding and recruiting these types of skills and knowledge. It could also potentially facilitate cross-border networking between SMEs and, as a result, also open up new international markets and cooperation opportunities for the SMEs. In addition, the possibility for SMEs to offer "in-house" training for their employees could potentially increase the attractiveness of SMEs as employers.

9.2 LOWER REQUIREMENTS FOR EUROPEAN BLUE CARD

Several of the interviewees have men- tioned that they have difficulties in finding the right competence on the labour market. Some have also pointed out the problems in hiring specialists from, for example, Russia or India due to current immigration regulations. They have also mentioned the need for a reduction of the time spend- ing of connections with other markets and the European Union today has a common work permit regimen called "EU Blue Card" for highly skilled workers: the requirements for obtaining an EU Blue Card are:

Valid travel documents
A degree from an institution of higher education involving at least three years of study post-secondary education or at least five years of relevant professional experience
A valid work contract or binding job offer for five years of relevant professional experience
A valid work contract or binding job offer for at least five years of relevant professional experience
A salary equivalent or higher than 1.5 times the average gross annual salary in the member state
Evidence of having, or having applied for, sickness insurance

For many SMEs looking to hire special- ists, these requirements can be too high. A skilled hacker can be more valuable than a person with an academic degree. Furthermore, a SME might not be able to maintain the minimum wage required to give an EU Blue Card or to promise employment for at least a year. Lowering the require- ments to a minimum, for example for a valid work contract or binding job offer matching the person's qualifications to a salary equivalent to at least an acceptable living standard in the member state, would increase the possibilities for SMEs to find the required competences, as well as ex- panding their networks in other markets.

9.3 BRING AN SME ABDROAD

One of the ways that some of the inter- viewees in this study have been able to create micro multinational is to work in close relation with larger corporations, ei- ther as a sub-contractor or as a supplier of products and services implemented by the larger corporation in its global activity. The benefits for the SME are many, but it is a challenge for SMEs to identify what is the right moment to enter into new markets and knowledge about how to do business in these markets. Working with larger international corporations will also give well needed references in new markets when seeking other customers and skilled workers for the market in question.

We recommend a mentor program initiative that can incentivise larger corporations to "Bring an SME abroad" more systematically. This can for exam- ple be modelled after, or built upon, the "Enterprise Europe Network". One can liken this concept to the remote fish that accompanies larger water living animals around the oceans. The benefits for the larger corporations are primarily CSR related ("Corporate Social Responsibility"), but there are also long term business advantages since the objective with such an initiative also is to strengthen the home market and develop valuable know-how and skills. For the larger corporations the costs associated with such initiatives could, to a certain extent, be tax-deduct- able and covered through public financial support.

9.4 PEER TO PEER COACHING

It has been noted during the study that there seem to be a demand for support that can facilitate SMEs’ entry into new international markets and help them to find new business opportunities. We have also found that the kind of networks that are most appropriate for SMEs are those where they can discuss actual challenges and lessons learned with peer in similar situations.

With this in mind, we recommend the im- plementation of a cross border peer-to-peer coaching network between SMEs in the Baltic Sea Region. The “Enterprise Europe Network” has a database with potential business partners and a list of events where networking can take place. The purpose of the network that the programme goes even further than this. It is intended to create a channel for SMEs to learn about regional differences from SMEs in the other countries. As a result, the SMEs will be able to help each other learn about the different business cultures on the different markets, establish customer and partner connec- tions on new markets, and also enable and facilitate the possibility of cross border business initiatives.

Models for this can also be found in the “Nordic - Baltic mobility programme for public administration" and "Nordic – Baltic cooperation in education and research". To initiate a programme like this, a certain amount of public funding and organisational support would be necessary.

9.5 CROSS BORDER BUSINESS CHECKS

Many startups and micro companies express the need for certain types of pro- fessional services that they, for different reasons, require to expand their business- es to new markets. Typically, these are general business development services such as consulting and marketing services or advice on legal and the regulatory envi- ronment of the new markets. To procure services available on the market. In addition, it can be difficult for individual startups and micro companies and there is not much public support offered from other companies wanting to expand into new markets and the support that is publicly available is, as far as we can see from the interviewees, not well known among the startups and micro companies.

We recommend that a cross border busi- ness support network called for SMEs seeking to implement or grow their activi- ties in other Baltic Sea Region countries. Even though this kind of national market initiative, this initiative should be administered by local publicly funded organisations that have the competence and capacity to procure professional services. This can preferably be set up as a consumer-choice system, meaning that the user is free to choose a service provider among those procured by the public organisation. The procurement process would be made on a Baltic Sea Region level.

There are certain national and regional programs offering business advice and/ or access to publicly procured professional services, often through different variations of “Business checks”. These types of pro- grams can serve as a model for developing cross border business checks offering start- ups and micro companies.

9.6 BALTIC SEA REGION CROWD FUNDING PLATFORM

Several of the interviewed SMEs considers it to be difficult to get seed financing and financing for the development or reali- zation of new products or ideas. It is, for example, stated that the currently avail- able investments do not fit the current conditions that are considered to be too demanding or that they are too complicated to warrant applying for them.

We recommend, in order to facilitate these types of financing for SMEs, the organi- zation of a Baltic Sea Region crowd funding platform. Such a platform allows SMEs to campaign for their ideas and, as a result, receive contributions of different sizes from anyone who would like to support the project or venture. The contribution could, for example, comprise funds provided as voluntary donations. It could also be implemented as an investment where the crowd is able to buy shares in the compa- ny. We suggest a Baltic Sea Region crowd funding platform committed to SMEs in the Baltic Sea Region, aiming to operate at a multinational level as a compliment to similar platforms offered from companies wanting to expand into new markets and the support that is publicly available is, as well as being able to access tax reduction up to a certain amount for the cost of specific types of business support services, such as tax and legal advice, accounting services, translation services, legal IT-consulting (e.g. web development), marketing and business development ser- vices within the new cultural context, and other services needed for SMEs to expand their businesses to new markets.

As a result, business support services would be more available to SMEs, and hence a larger number of SMEs would be able to make use of the professional services provided, such as tax and legal advice, and hence a larger number of SMEs would potentially be able to expand to other countries or regions. The tax reduction could be restricted to apply only to services purchased from other SMEs.

We recommend the implementation of a tax deduction for business support services in order to meet the needs described above. Such deduction could be further enhanced by adding conditions or the tax deduction possibilities currently available in, for example, Finland and Sweden where people contracting services within the areas of repairs, extensions and conversions to homes, or cleaning, mainte- nance and laundry work can receive a tax deduction equivalent to a certain percentage of the labour costs, up to a certain amount.

In a similar manner, we suggest that the tax deduction could be more available to SMEs.

One commonly noted problem among the interviewed SMEs is that although they of- ten possess the necessary knowledge about their specific technologies or provided services, they often find it complicated to handle other areas of their business, such as accounting, legal issues, and marketing. There is plenty of professional expertise available on the market for hire within these areas, however, since these are usually expensive, many of the SMEs are currently not able to use these services.

With the implementation of the Service Directive all EU member states now have what is called a “point of single contact”. Through this point, companies can obtain all relevant information and deal with all administrative formalities regarding the establishment of a business and cross border business services. One of the most frequent requests from the interviewees is better and more accessible information that is available. We are inspired from the idea that SMEs could have a "point of single contact", which is, for example, constructed on a national level as a compliment to the Vizar network.

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In a similar manner, we suggest that the tax deduction could be more available to SMEs.
WHAT’S NEXT?

We are in the middle of a fundamental shift. The combination of digitization and globalization is a worldwide game—change in many areas, and in this report we have focused on its impact on enterprise and entrepreneurship. We set out to look for a new type of ICT-fueled SMEs with a global market and a scaling business plan - micro multinationals.

These new businesses often fall outside of traditional policy frameworks for promoting entrepreneurship, firm growth and internationalization. Historically, a company first developed and grew on a national market before expanding and opening offices in other countries. Micro multinationals, on the other hand, depend on international business models from day one, they access new customers and enter into contracts over the internet, they use data about their customers to improve their business, they are just as likely to deal in data as in physical products or services and they move fast.

In the wake of this ongoing shift, old policies are increasingly in risk of inhibiting new forms of entrepreneurship. ICT-driven SMEs have a new toolbox of opportunities at their disposal, but they are also extra sensitive to time-consuming and cost-driving bureaucratic processes and policy frameworks. Political reforms aimed at traditional business models are often too little, too late and sometimes even completely wrong. In fact, we know very little about the actual micro multinationals and their conditions in the Baltic Sea Region. Therefore, the primary ambition of this report has been to provide their perspective on the Baltic Sea business climate.

The interviewers and the research presented here provides a starting point for adapting the business climate to promote new, technology-driven and global business models and enterprises. Cross-border networks, education and recruitment of relevant skills and technology adoption in public support systems are three common core challenges among the interviewed companies. Even though they are in no way exclusive to micro multinationals, these challenges seem particularly important to promote a better ecosystem for ICT-driven startups and SMEs. Even with global communication, people need networks to do business, access new markets and recruit new talents. Almost all of the interviewees report difficulties in finding and recruiting people with a mix of business and technology skills. Finally, public support systems often lack knowledge about new technologies and new business models. For instance, they could benefit from using crowd funding or crowd sourcing tools to better aid early-stage startups. Public actors need to become more tech savvy, both to understand micro multinationals and to be able to help them.

Micro multinationals have a remarkable, but often not fully realized potential to boost the economy in several ways. And the Baltic Sea Region has all the prerequisites to become a front-runner, both in the EU and globally, in promoting ICT-driven startups and SMEs. However, this requires that the region comes together to not only look for micro multinationals, but also to enable and accelerate them.
Appendix A – Methodology

DESKTOP STUDY METHODOLOGY

The first task in the desktop study was to identify sources that could contribute to answering the questions set out by the Commissioner. An initial assumption made was that a mix of statistical sources and comparative studies, supplemented with reports regarding specific national conditions, would be necessary to produce the best results.

On this assumption, a set of statistical sources and international comparative studies was selected as the basis for the study. These sources were, then, supplemented for each individual country with national statistical sources and studies as described below.

Sources of Statistical Information

To create a comparable between the different countries in the study, certain statistical information has been recalculated to indicate a value per capita or in terms of a specific number of inhabitants. The numbers used as the basis for the population parameter in this calculation are taken from Eurostat’s population statistics.

In instances where national curren- cies have been used in the study, the Eurostat exchange reference rates annual averages have been used to recalculate the data. For background data regarding average annual wages we have used data from OECD StatExtracts™.

Data from OECD available in the OECD Tax Database™ has been used to analyse and describe corporate taxes and taxes on labour.

Where possible, we have used statis- tics covering the entire Information Society (wider ICT-sector) as defined by OECD. However, certain statistics are only reported as ICT-sector excluding the content and media producers of the Information Society or are only available as statistical information regarding SMEs in general. Often, there are no statistics available for micro companies or companies with nine employees or less.

The Eurostat’s Information Society Database™ has been used to identify the reasons for difficulties in filling vacancies for ICT specialist jobs in SMEs, the ICT sector’s share of GDP and Percentage of the ICT personnel on total employment. In this database, the ICT sector is limited to ICT manufacturing and ICT services and does not include the content and media sectors. Data regarding innovation and patents has been retrieved from the Eurostat’s Science, Technology and Innovation Database™, and the World Intellectual Property Organization’s IP Statistics Data Center™.

Comparative Studies

To compare the economic freedom and the rules and regulations pertaining to the coun- tries, the following sources have been used:

- 2014 Index of Economic Freedom™
- Economic Freedom of the World 2013 Annual Report™
- Global Competitiveness Report 2013-2014™
- OECD Indicators of Product Market Regulation™
- The information society and ICTs have been measured and compared by the use of the following indexes:
  - The Digital Agenda Scoreboard™
  - Network Readiness Index in The Global Information Technology Report 2013™
  - Measuring the information society 2013™
  - Web Index of the World Wide Web Foundation™
- Last, in order to compare innovation be- tween the different countries, the follow- ing sources have been used in the study:
  - Global Innovation Index 2013™
  - Innovation Union Scoreboard™

Swedish Sources and Definitions

In addition to the above sources, the Swedish portion of the desktop study has also used publicly available statistics from Statistics Sweden (SCB) regarding imports and exports as well as information regarding different kinds of public support to start-ups and SMEs available at the Swedish single point of contact Verksamhetsstatistik.se™.

The data regarding ICT SMEs and SMEs in general has been sourced from SCB spe- cifically for this study. The data originates from the Swedish Business Register™. The Business Register is comprised of data from several different sources where the most important contributors are the Tax agency, the Swedish Companies Registration Office and Svensk adressin- dering AB. The data in the database are updated with different intervals, some as often as every week while other data only is updated on a yearly basis.

There have been some difficulties in re-trieving data to obtain the fail rate for ICT SMEs and SMEs in general. For the reason that this is a great deal of information regarding a given company is deleted when it closes down. To obtain the fail rate, the data from the year in which a company classifies need to be compared with the data from the previous year in order to re-introduce information regarding the number of failed enterprises and SNI codes (i.e. NACE codes).

In the Business Register the term for start-up is “newly activated”. This means a company or place of business newly registered for VAT purposes, as an employer or, regarding businesses exempt from VAT, a business that has obtained a notice of assessment regarding corporation tax. This means that start-ups are more or less limited to businesses with actual economic activity.

As regards the fail rate, this is calculated on the basis of “terminated companies” meaning companies that have been closed down due to bankruptcy, liquidation or merger and companies that have been deregistered, removed from the register dissolved. This number has then been divided with the number of comparable existing companies i.e. SMEs or ICT SMEs.

The growth rates and employment rates of Finnish SMEs and ICT SMEs were calculated based on the data provided by a Finnish statistical data provider, Statistics Finland, as well as information available from the World Intellectual Property Organization’s IP Statistics Data Center.

In the Business Register the term for the death of a company is not caused by a death of enterprises or restructuration of existing company. The death of a company is defined as the registering of the business information in the Commercial Register. Consequently, the Danish Business Authority may decide to delete the company from the register a company from the register a company fails to submit annual reports (as the period of the deletion process of such companies varies from approximately 2 to 5 years this as- sessment is based on general practice and not on any official statistical data) as of the due date for the submission of the annual report. The process of the deletion of a company from the Estonian Commercial Register is described below.

The Estonian Commercial Register may issue a notice to delete a non-active company from the register after 6 months have been passed from the date of the sub- mission of the annual report. The Estonian Commercial Register will prescribe a time period (can not be any other period than 6 months) to submit the annual report. If the non-active company fails to submit the annual report within the prescribed time period, the Estonian Commercial Register is entitled to publish a notice in the official publication Ametlik Aastaandam By publishing such a notice, the Estonian Commercial Register invites the creditors of the non-active company to inform the debtors of their claims and apply for the liquidation of the non-active company. The creditors of the non-active company must submit their claims and apply for the liquidation of the non-active company within 6 months as of the publication of the notice. Should the creditors fail to notify their claims or apply for the liquidation of the non-active company, the register shall issue a court ruling for the deletion of the non-active company from the Estonian Commercial Register. The non-active company fails to appeal against the ruling within 30 days as of the service of the rul- ing, the register shall delete the non-active company from the Estonian Commercial Register.

In addition to the aforementioned sources, the Finnish country reported included in- formation from various publicly available sources. These sources were mainly websites of organizations relevant to this study i.e. Ministry of Economy and Employment.

There were difficulties in obtaining infor- mation on statistical data. The selected statistical data provider was not able to produce reliable information on Finnish SMEs. The sources available included the number of active ICT SMEs and SME during each year between 2011- 2014. The reports are available on the same intervals as SME category and years. These difficulties ex- tendeed to inclucde challenges in receiving data on fail rates.

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The number of interviews for each category reflected each category’s total number of companies in relation to the total sample. The requirement was established that at least one interviewee had to be conducted in each category regardless of the actual distribution of the sample.

The companies on the sample lists within each category were, then, randomized and approached in the order they occurred in the list:

First of all, companies with very little activity (or no activity at all) had to be eliminated. A minimum turn-over limit was imposed, set at 50 percent of each country’s average production worker’s salary (this limitation was set already during the initial sample selection).

Secondly, when studying the random sample to some companies were found that were part of larger groups (both local and international) and would therefore not be suitable for the study’s overall purpose.

Thirdly, the Baltic Development Forum particularly wanted to interview companies with a multinational ambition and it was, therefore, decided that the interview companies must have a website written in more than the local language.

Danish Methodology Variation

The sampling of interviewees in Denmark was initially based on the construction of a contact list of all ICT companies between 1-250 employees based in the greater Copenhagen area. The list was generated from the PwC database of all ICT CVB registered companies listed in the Copenhagen area. This initial list comprised a total of 5,230 ICT companies in the range of 1-250 employees. A smaller sample of this list was then extracted in a randomisation process which produced a similar distribution of company sizes (employees) in the smaller list, and according to which we established contact with the companies.

In this way, we made sure that our company selection resembled the general profile of distribution in the Copenhagen area.

The number companies willing to participate in this study was, however, very limited. Five different employees from PwC have been engaged in booking these interviews, but have all had close to the same list rate in regard to companies willing to participate. Several times, we tried to change the way in which we presented the study to the potential interviewees, but without remarkable difference in terms of response.

With this initial approach we contacted more than a 150 companies by phone from the list, but with a hit rate of less than 1 percent in Copenhagen area. The tactics of contacting companies on the list and varying the presentation of the study was pursued for quite some time, before we concluded that the hit rate was too low and something different had to be done.

As a consequence we decided to send out a request to assist us with this study to our SME ICT clients through our PwC auditors, which ultimately secured a few more interviews. A request for interview participation was also sent out to several different online platforms through Microsoft’s partner channels.

This strategy does entail a somewhat larger risk of generating a biased sample of interviewees as they are not selected from a randomized sample, but based on companies who are actively willing to participate in the interview.

The Interview

The interviews were mainly held by telephone or personal meetings. All sub-regions used the same template of questions so that cross region conclusions could be drawn from the received information. All interviews were provided with the questions in advance. The interviews were held in the local language and the transcripts were then translated into English. The interviewer had the possibility to freely elaborate on areas of interest or “dig deeper” where they felt it necessary. On average the interviewees took about 50 minutes.

OECD Definition of ICT sector

The OECD definition is based on the ISIC4 standard and has, for the purpose of this study, been “translated” into NACE codes as follows:

The 2006-07 OECD ICT sector definition based on ISIC Rev. 4*

<table>
<thead>
<tr>
<th>ISIC Rev. 4</th>
<th>NACE Rev. 2</th>
</tr>
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<tbody>
<tr>
<td>2610 Manufacture of electronic components and boards</td>
<td>2611 Manufacture of electronic components</td>
</tr>
<tr>
<td>2612 Manufacture of loaded electronic boards</td>
<td>2612 Manufacture of loaded electronic boards</td>
</tr>
<tr>
<td>2620 Manufacture of computers and peripheral equipment</td>
<td>2620 Manufacture of computers and peripheral equipment</td>
</tr>
<tr>
<td>2630 Manufacture of communication equipment</td>
<td>2630 Manufacture of communication equipment</td>
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<tr>
<td>2640 Manufacture of consumer electronics</td>
<td>2640 Manufacture of consumer electronics</td>
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<tr>
<td>2680 Manufacture of magnetic and optical media</td>
<td>2680 Manufacture of magnetic and optical media</td>
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ICT MANUFACTURING INDUSTRIES

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</tbody>
</table>

ICT MANUFACTURING INDUSTRIES

| 4611 Wholesale of computers, computer peripheral equipment and software |
| 4652 Wholesale of electronic and telecommunications equipment and parts |
| 4611 Wholesale of computers, computer peripheral equipment and software |
| 4652 Wholesale of electronic and telecommunications equipment and parts |
ICT SERVICES INDUSTRIES

5820 Software publishing
5821 Publishing of computer games
5827 Other software publishing

6110 Wired telecommunications activities
6110 Wired telecommunications activities

6120 Wireless telecommunications activities
6120 Wireless telecommunications activities

6130 Satellite telecommunications activities
6130 Satellite telecommunications activities

6190 Other telecommunications activities
6190 Other telecommunications activities

6201 Computer programming activities
6201 Computer programming activities

6202 Computer consultancy and computer facilities management activities
6202 Computer consultancy activities

6203 Computer facilities management activities

6209 Other information technology and computer services activities
6209 Other information technology and computer services activities

6311 Data processing, hosting and related activities
6311 Data processing, hosting and related activities

6312 Web portals
6312 Web portals

9511 Repair of computers and peripheral equipment
9511 Repair of computers and peripheral equipment

9512 Repair of communication equipment
9512 Repair of communication equipment

The 2006-07 OECD Content and media sector definition (based on ISIC Rev. 4)*

NACE Rev. 2

BUSINESS DESCRIPTION
What product or service do you provide?
What year did you start your business?
What do you consider to be your market?
What markets/countries are you active on today?
What is the proportion of your turnover on your biggest markets?
Who is your customer?
How would you describe your competition?
How many Full Time Employees do you have in your business?

SKILLS AND KNOWLEDGE
Do you have (or have access to) the skills and knowledge necessary for your business now/in the future?
Are there any skills necessary for your business that are difficult to obtain?
How do you secure these skills?

If yes, what is your growth strategy?
(Organic, Mergers & Acquisitions, new products, new markets, etc.)

Did your company start as a provider of local services/products and grew (or plan to grow) to be international, or was it international from the beginning?

What do you perceive to be the greatest barriers to future growth/ expansion (growth strategy)?

Greatest barriers to internationalization? (Local regulations, lack of knowledge about markets and cultures, financing, certifications, the right competence, marketing, finding partners, language, administration, other?)

SUPPORT AND FINANCING
Have you ever sought external financing?

If yes, what type of financing (VC, Loan, Family&Friends, Business Angels, Public (for example, Vinnova), Kickstarter, etc.)?

Why did you choose that specific form of financing?

At what stage in the business life cycle (start up, growth, maturity, and decline) did you seek external financing? Did you get it?
Do you know of any available sources of finance from public organizations?

If yes, which ones?
Do you have “access” to external financing to the extent you would like to support your growth strategy?

If no, why not?

What types of non-financial support, from public or private sources, have you benefited from.

For instance:
1. Public Procurement process education
2. Public internationalization programs/services (international fairs, trade missions, international matchmaking etc.)
3. Seminars/workshops, training programs, public or private?
4. Incubators, science parks or other public organizations?
5. Networking platforms, public or private?
6. Informal networks, startup communities and such
7. Business coaching, public or private?
8. Others:

   • How important were those non-financial support to your business (Not important, Important, Very important)?

Do you know where to obtain information and help regarding the rules and regulations pertaining to your business?

How do you perceive the regulatory burden for your business?
NETWORKS

Did you have any contact with other entrepreneurs when you started your business? If yes, did they advise or inspire you to start your business in any way?

- If yes, did they advise or inspire you to start your business in any way?

Are you currently taking advice from any other entrepreneur or network regularly on how to develop your venture?

- If yes, what type of networks?

Do you mentor other entrepreneurs or startups?

Do you have more contact with similar/competing firms?

Do you have any formal and informal networks in your geographical region and across different regions?

- If no, have you tried to make such connections or do you wish to?

What type of formal and informal networks do you have in your business sector (locally, nationally or internationally)?

Have you hired employees from outside of your geographical region or other countries?

- If yes, from which regions/countries?

Do you wish to do so?

Do you see any barriers to hiring from outside your geographical region or other countries?

BARRIERS (SHOULD CONSIDER ALL OF THE AREAS ABOVE)

We have already discussed barriers with in some specific areas before, but looking at it in general terms:

What have been the most significant barriers so far for your business? (Locally? Nationally? Internationally? Politically and/or economically? Patents? Technical standards and certifications? Administrative and legal burdens?)

Do these barriers still exist?

- If no, what do you believe will be your most significant barriers in the near future for your business? (Locally? Nationally? Internationally? Politically and/or economically? Patents? Technical standards and certifications? Administrative and legal burdens?)

What policy changes or public policies would you propose to facilitate and stimulate growth for SMEs in the ICT-sector?

What kind of support would you propose to facilitate and stimulate growth for SMEs in the ICT-sector? (Governmental support, policy changes, structural changes or other support)