



# EMCC case studies

## Knowledge-intensive business services cluster in Helsinki and Tallinn

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## Background and economic history

This cluster study concentrates on the respective capital cities of Finland and Estonia, namely Helsinki and Tallinn. This cluster area was chosen because of the dynamic nature of the economies located in the region. Finland has one of the most developed information and communication technologies (ICT) sectors in the western world, and is regularly cited among the world's most competitive economies (Robert Huggins Associates, 2004).

Estonia gained independence from the former Soviet Union in 1991, which was followed by its accession to the European Union in May 2004. During this period, Estonia has undergone a difficult period of transition from a planned to a free market economy.

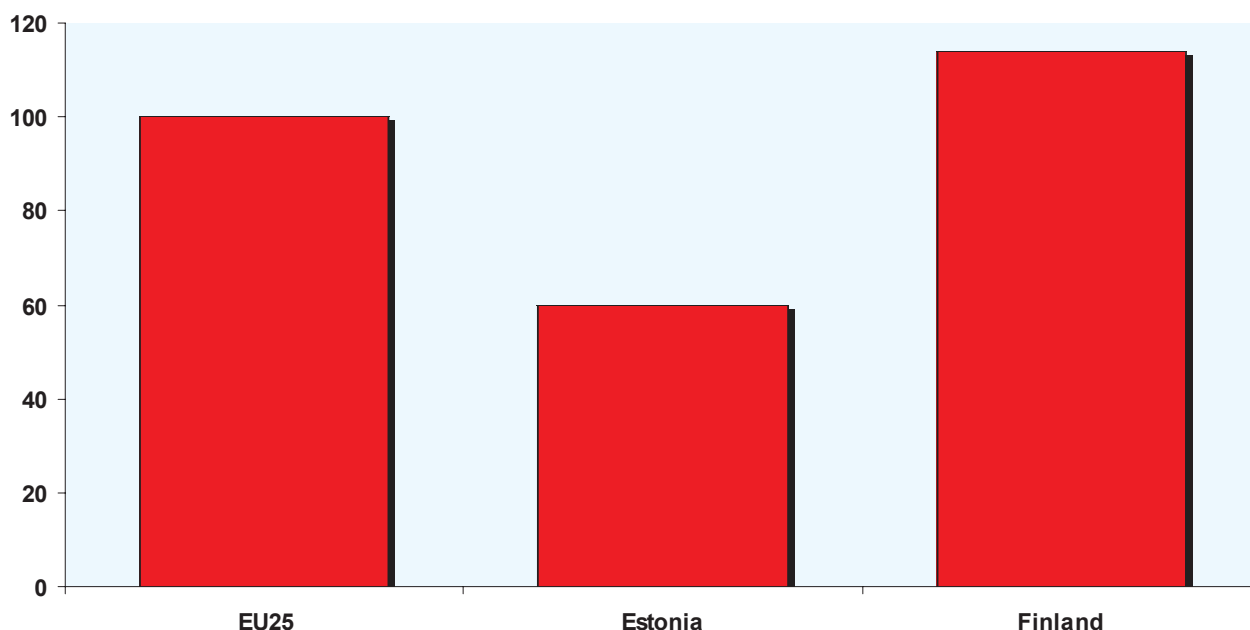
Although separate cluster studies could have been carried out in Helsinki or Tallinn, it is interesting to look at both together given the political agenda to integrate and enhance economic and innovation-related cooperation between the two regions. For instance, a key initiative is the Helsinki-Tallinn Euregio association (see Text Box 7), which started in 1999 with the objective of fostering more cross-border cooperation between Estonia and Finland. Euregio acts as a catalyst by initiating activities in the areas of common interest for the parties involved, as well as a tool for mediation and facilitation bringing together stakeholders and paving the way for further cooperation within the region.

A further initiative is the Helsinki-Tallinn Science Twin-City Project. This project has been developed to create a 'science bridge' uniting the two regions into an area of multicultural excellence by strengthening the pool of people with top qualifications and diverse knowledge capital. This 'science region' benefits from the economic momentum of the whole Baltic Rim area as well as from its location on the internal and external border of the EU.

Some policymakers also consider that each region by itself is too small to compete separately on the global market. Finland has been extremely successful in developing a knowledge-based economy and society; however, key challenges remain in attracting the large companies that are currently tending to pursue opportunities in China and India which seem to provide a better business environment. The long-term objective of the Helsinki-Tallinn science region initiative is to constitute a coherent twin region in terms of science, education, art and knowledge-based business.

Finland and Tallinn are situated on opposite sides of the Gulf of Finland. Finland, or more specifically the Uusimaa region around Helsinki, has developed a global reputation as a centre of advanced ICT developments. The highly-developed and advanced manufacturing sector is probably best represented by Nokia, a household name in mobile communication technologies. ICT manufacturing plays an important role in the Finnish economy, and manufacturing as a whole contributes significantly to the national economy in comparison with most other EU countries. Eurostat data for 2005 estimates that around a quarter of the economic output of Finland was derived from manufacturing, compared with one fifth for the EU25 Member States (Eurostat, 2006). Economic output per head in Finland exceeds the average for all EU25 countries by more than 12% (Eurostat, 2005).

Figure 1: *Gross domestic product (GDP) per head in purchasing power standards (PPS), 2006 forecast*



Note: Index EU25=100

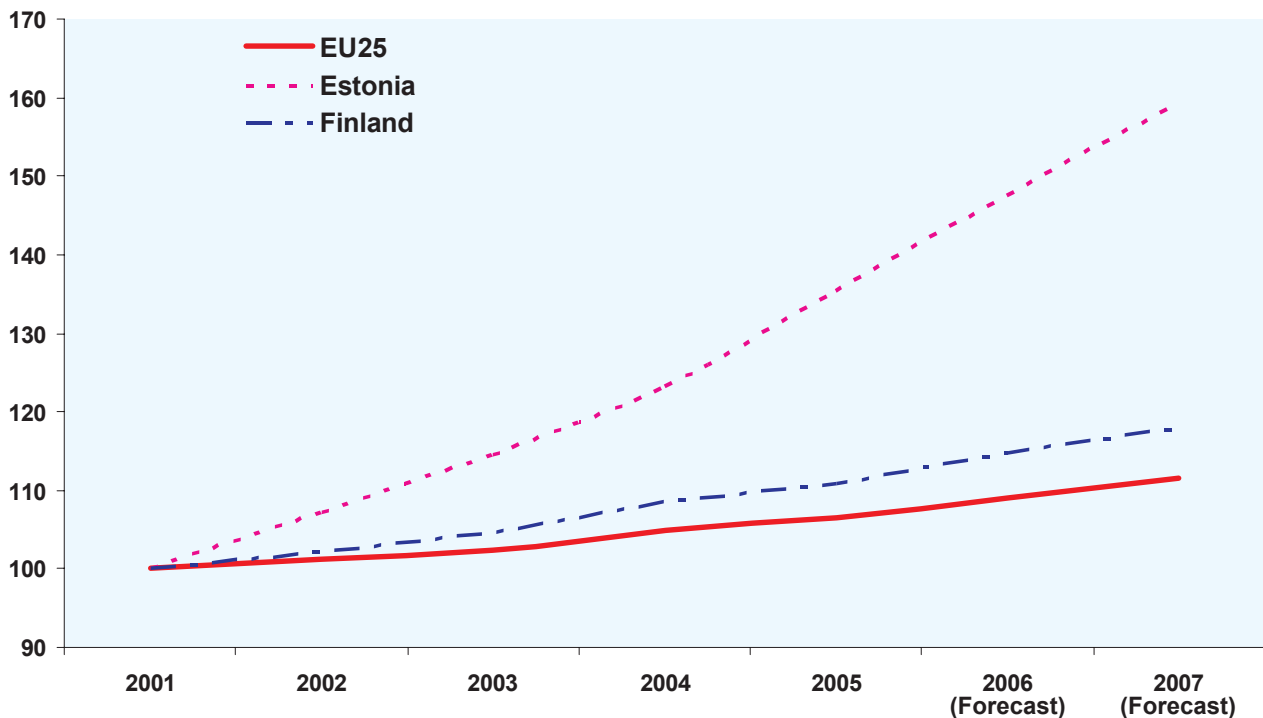
Source: Eurostat, [Economy and finance statistics](#)<sup>1</sup> (online database), 2006

The economic climate in Estonia differs from that in Finland. Since gaining its independence in 1991, Estonia has been adapting to its transition to a free market economy. Eurostat estimates that economic output per head of population in Estonia is 60% of the EU25 average. The Estonian economy has been growing rapidly, however, and since 2001 the national economy has grown at roughly three times the rate of the Finnish and the overall EU25 economies (Eurostat, 2005). Estonia is also different to many EU Member States in that it has a flat-tax structure, with a uniform rate of income tax for all workers.

Finland and Estonia have long historical ties; for example, the countries have a strong cultural and economic bond in terms of language similarities. Moreover, trade between Estonia, Finland and other Baltic and Scandinavian countries also existed long before the country gained its independence. Therefore, Finland has played and will continue to play an integral role in Estonia's economic development (Estonian Institute, 2000).

<sup>1</sup> [http://epp.eurostat.cec.eu.int/portal/page?\\_pageid=0,1136173,0\\_45570701&\\_dad=portal&\\_schema=PORTAL](http://epp.eurostat.cec.eu.int/portal/page?_pageid=0,1136173,0_45570701&_dad=portal&_schema=PORTAL)

Figure 2: Growth in economic output, GDP 1995 prices and exchange rates (Index)



Note: Index 2001=100

Source: Eurostat, [Economy and finance statistics](#) (online database), 2006

Given this political motivation for stronger connections, the objective of this cluster study is two-fold:

- to analyse activities of knowledge-intensive business services (KIBS) companies in the two locations;
- to examine the extent to which there is current, or the potential for future, linkage between KIBS providers and other economic actors operating across the two locations.

KIBS activities are expanding in both Helsinki and Tallinn and are recording rapidly increasing employment levels. However, the level of linkage and connectivity across the two clusters is weak, with little visible interaction. This implies that although there are policy efforts to produce a common branding for the two locations, in practice KIBS providers in Helsinki and Tallinn operate as part of mainly independent clusters. To a large extent, this is to be expected, since the development of the KIBS sector in Helsinki and Tallinn is new, with rapid growth only occurring in the last few years. Moreover, policies relating to cross-border cooperation between the two city regions have yet to be implemented, particularly as Estonia only officially joined the EU in 2004. As economic disparity between Helsinki/Finland and Tallinn/Estonia reduces, the long-term prospects for the creation of a functional Helsinki-Tallinn KIBS company cluster remains strong.

## Employment and productivity levels

Employment in KIBS companies in both Finland and Estonia, as a proportion of total employment in each country, is lower than the average for all EU25 Member States. Since 2003, KIBS companies accounted for 5.5% of employment in Finland, compared with almost 7.5% of employment in such companies in the EU25. Comparable data for Estonia estimates that employment in KIBS companies accounts for just 4% of total employment.

Similarly, output in the KIBS sector in Finland and Estonia is lagging behind that of the EU25 average. The sector accounts for slightly less than 4% of the total economic output of Estonia, and just over 5% of the total economic output of Finland. It is also noticeable that productivity in this sector is lagging behind the average productivity (as measured by output per worker) for both Finland and Estonia, as indicated by the fact that proportional employment is greater than proportional output.

Conversely, proportional output for KIBS providers in the EU25 as a whole exceeds proportional employment, implying that productivity is slightly higher than the average for all sectors. However, productivity is as much a result of the subsector profile of KIBS companies in Finland and Estonia, as it is an indication of the efficiency of those employed in the sector.

Table 1: *KIBS employment and productivity, 2003*

	Employment	Productivity
EU25	7.4%	7.6%
Estonia	4.0%	3.9%
Finland	5.5%	5.2%

Note: *Productivity is measured by output per worker.*

Source: **EMCC, 2006** <sup>2</sup>

Table 2 shows employment by KIBS subsectors, namely: computer and related activities; research and development (R&D); and other business services. 'Other business services' is comprised of:

- legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy; holdings;
- architectural and engineering activities and related technical consultancy; technical testing and analysis;
- advertising;
- labour recruitment and provision of personnel;
- various business activities. <sup>3</sup>

A relatively high proportion of the Finnish workforce is employed in computer and related activities, while the proportion of those employed in the same sector in Estonia is about half of the EU25 average. Employment in the R&D field in Finland mirrors the European average, while being virtually non-existent as a sector in Estonia. Neither Estonia nor Finland employs more than the EU average level of workers in other business services.

<sup>2</sup> <http://www.eurofound.eu.int/publications/htmlfiles/ef0640.htm>

<sup>3</sup> For a full definition of 'other business services', see **EMCC, 2006**.

Table 2: *KIBS employment, by subsector, 2003*

	Computer and related activities	Research and development	Other business services
EU25	1.2%	0.2%	5.9%
Estonia	0.6%	0.0%	3.3%
Finland	1.6%	0.2%	3.8%

Source: EMCC, 2006

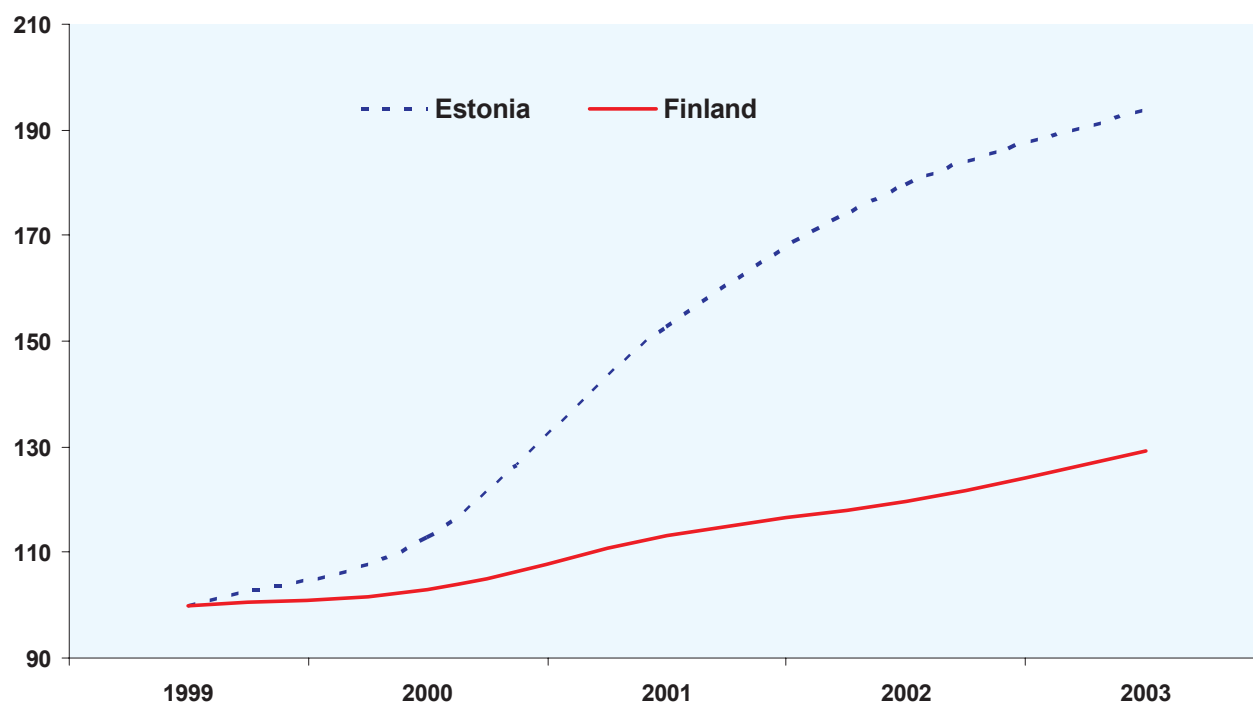
Data for production output reveal similar patterns. It is evident from the data that computer and related activities is a relatively productive sector in both Finland and Estonia in comparison with all other sectors in each country respectively; however, the other business services sector remains relatively unproductive compared with the EU25 average. It should be noted in these cases that production output is not a reflection of worker efficiency alone, but also of the subsector profile and market composition.

Table 3: *KIBS production output, by subsector, 2003*

	Computer and related activities	Research and development	Other business services
EU25	1.7%	0.2%	5.6%
Estonia	0.8%	0.0%	3.1%
Finland	1.7%	0.1%	3.3%

Source: EMCC, 2006

Production output in the KIBS sector in Estonia has increased rapidly since 2000, as illustrated in Figure 3. Growth in Finland is also strong, exceeding European-wide growth by a significant margin, although it is still lagging considerably behind the growth rate recorded in Estonia.

Figure 3: *KIBS production output, measured in value added at factor cost (Index)*


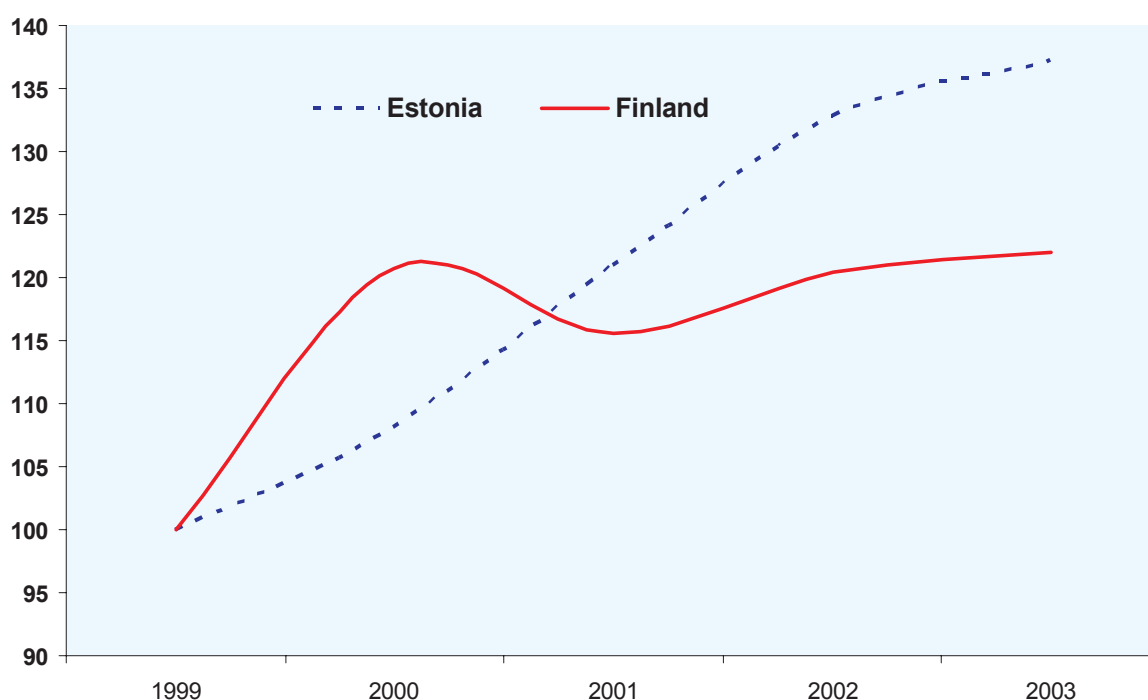
Note: 'Value added at factor cost' refers to the gross income from operating activities after adjusting for operating subsidies and indirect taxes. Index 2000=100

Source: EMCC, 2006

Employment levels have increased considerably in Finland and Estonia. Between 1999 and 2003, the number of people employed in the KIBS sector in Estonia grew by over 35%; employment in the KIBS sector in Finland grew by just over 20% over the same period. Both countries experienced significant growth in KIBS employment during a period of relatively stagnant employment growth in the sector throughout the EU25. This highlights the increasing importance of KIBS companies in both countries as they seek to strengthen their positions as knowledge-based economies.

Data from 2003 estimate that about 128,000 people are employed in the KIBS sector in Finland while 24,000 people are employed in the sector in Estonia. Despite relatively high growth rates in Finland and Estonia, it should be acknowledged that both countries have started from a relatively small employment base and production output. As noted above, employment and production output in both countries still falls short of the overall EU25 average.

Figure 4: *KIBS employment (Index)*



Note: Index 1999=100

Source: EMCC, 2006

Employment growth has been positive in all KIBS subsectors except in relation to R&D in Estonia. Between 1999 and 2003, employment levels have increased substantially in computer and related activities, averaging almost 20% growth on an annual basis in Estonia. Employment growth has also been strong in other business services in Estonia. In Finland, KIBS employment continued to grow, but at a slower rate than in Estonia, at 2.8% per year. Employment growth data for the R&D sector is more difficult to analyse due to the fact that this KIBS subsector is relatively small in both Finland and Estonia; this means that very small fluctuations in employment data can have a significant impact on overall levels of employment growth.

Table 4: Average annual employment growth, by subsector, 1999–2003

	Finland	Estonia
Computer and related activities	9.6%	18.1%
Research and development	33.3%	-7.1%
Other business services	2.8%	7.0%

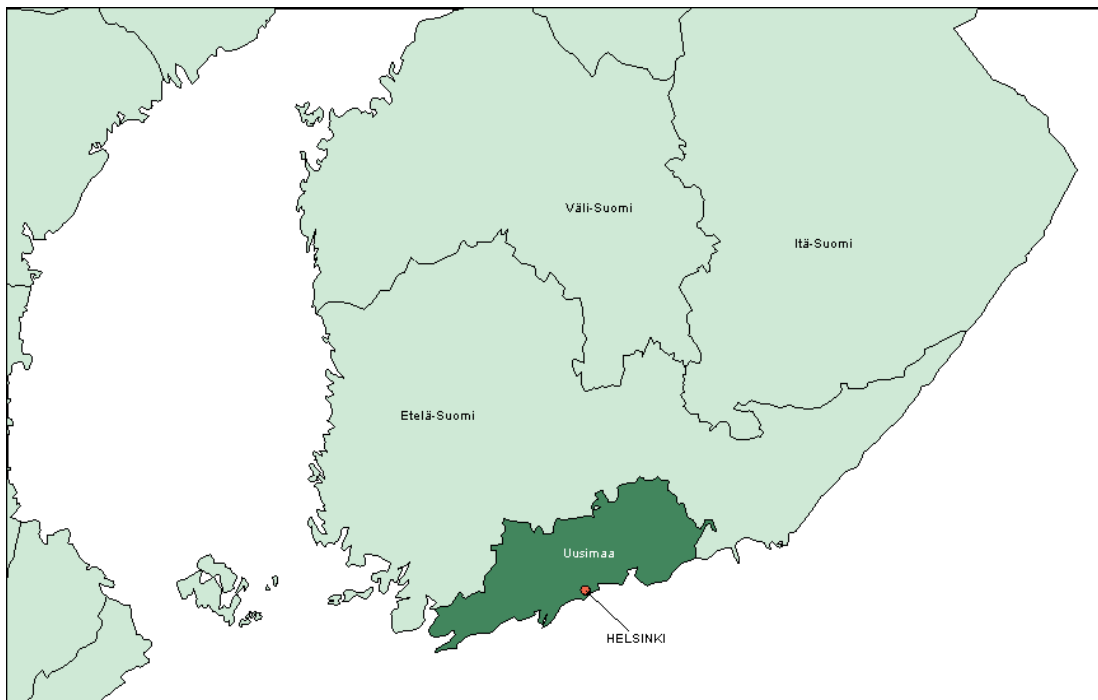
Source: EMCC, 2006

## KIBS providers in Finland and Estonia

### KIBS providers in Helsinki

Currently, just over 65,000 people are employed in the KIBS sector in the Uusimaa region of Finland, which comprises the city of Helsinki and surrounding area. This accounts for almost 15% of all employment within the capital city region. The map below highlights the geographical scope of the Uusimaa region in Finland (Figure 5).

Figure 5: Uusimaa region in Finland



In a region that is renowned for its advanced ICT manufacturing sector, employment levels are predictably high in computer and related activities. In 2004, this KIBS subsector employed almost 23,000 people, representing approximately one in every 20 workers in the region. Most of the sector's workers are employed in software consultancy and supply. The links between the needs of ICT manufacturing and software engineering are obvious, and much of the software sector will thus have links with companies operating in the advanced ICT sector.



Table 5: *KIBS employment, by subsector, 2003–2004*

	Computer and related activities	Research and development	Other business services
Uusimaa 2004	5.1%	0.2%	9.3%
Finland	1.6%	0.2%	3.8%

Source: EMCC, 2006; Statistics Finland

Proportional employment in the R&D sector in Helsinki almost mirrors the national average at 0.2%, which corresponds to only about 1,000 workers. However, this does not suggest that there is little R&D activity in Helsinki, but rather that there are relatively few businesses falling within the industrial classification of an R&D company. Interestingly, more people are employed in the other business services subsector in Helsinki than within the computer and related activities subsector. Over 42,000 (corresponding to 9.3%) of all people in employment are employed in other business services. Comparable figures for the whole of Finland stand at just 3.8% of all employees. This suggests the clustering of business activities in the capital city region which relate to: legal, accounting, business and management consultancy; architecture and engineering; and advertising and labour recruitment services.

### *History of Helsinki KIBS cluster*

The KIBS cluster in Helsinki is much more dense and mature than that found in Tallinn. Throughout much of the latter stages of the 1990s, the growth of knowledge-based ICT industries has driven the growth of the Finnish and thus the Helsinki economy. The Finnish economic recession of the early 1990s was brought under control and reversed by private and public expenditure on R&D. This helped to develop the knowledge-based sectors throughout Finland, and to drive economic growth at a regional and national level.

The Finnish Funding Agency for Technology and Innovation (Tekes) has been the driving force behind the funding of technology-driven companies throughout Finland. From as early as the 1980s, the focus on economic development has been centred around technology in Finland. While not all technology or indeed knowledge-based businesses can be classified as KIBS providers, many of the people employed in the sector in Finland will be dependent on high levels of technology and knowledge-intensive businesses. Nokia is a commonly cited anchor company for many businesses throughout Helsinki, and indeed the whole of Finland.

### *Text Box 1: Tekes funding agency*

Tekes, the Finnish Funding Agency for Technology and Innovation, is the main public financing and expert organisation for research and technological development in Finland. Tekes finances industrial R&D projects as well as projects in universities and research institutes. The agency particularly promotes innovative, risk-intensive projects.

The primary objective of Tekes is to encourage the competitiveness of Finnish industry and the services sector by assisting in the creation of world-class technology and technological know-how. In particular, Tekes' activities aim to diversify production structures, increase production and exports, and create a foundation for employment and social wellbeing.

The agency's funding comes from the state budget via the Ministry of Trade and Industry. Tekes has an annual budget of €400 million and funds 2,000 projects.

Source: TEKES online, <http://www.tekes.fi/eng/tekes/>

Tekes has also provided direct and indirect funding for many KIBS companies in Helsinki. As well as directly funding private enterprises to aid the development of the Finnish economy, many KIBS providers depend on a market that gains financial assistance from the public sector. Business consultancies are an example of such activities; the core clients of

these consultancies may not be public sector organisations, yet these customers would still be likely to receive funding to purchase services from public agencies such as Tekes.

Many of the KIBS users in Helsinki are larger companies operating in the city region. Table 6 illustrates that, apart from services such as accounting and bookkeeping, auditing, financial services and legal services, the smaller (or ‘single-plant’ as defined in the table) companies do not use KIBS providers.

Table 6: *Use and production of expert services in single and multi-plant companies (N=31)*

	Single-plant companies	Multi-plant companies
Accounting and bookkeeping	+++	-
Auditing	+++	+++
Other economic services	-	+/-
Financial services	+/-	+/-
Advertising marketing and marketing communications	-	+++
Legal services	+++	+++
Business and management consultancy	-	+/-
Knowledge management consultancy	-	-
Computer services	-	+/-
Recruitment and other human resources (HR) services	-	+/-
Research and development (R&D)	-	+/-

- = service not used or produced mostly internally

+/- = service both produced internally and purchased from external producers

+++ = service mostly purchased from external producers

Note: *Client firms for this research belong to the sectors of the Helsinki region Centre of Expertise programme.*

Source: *Kautonen et al, 2005*

Overall, the KIBS sector in Helsinki has been helped by public sector intervention, as well as by a key anchor company like Nokia, and is relatively mature in comparison with Tallinn.

### KIBS providers in Tallinn

Although no official statistics are available on employment in KIBS companies in Estonia, key sector experts suggest that Tallinn forms the core of the sector in Estonia. As illustrated in Table 7, much of Estonia’s services sector (i.e. tertiary employment) is located in the capital city region. However, even if the majority of the KIBS sector was located in Tallinn, this would still only amount to roughly 20,000 employees.

Table 7: *Employed persons aged 15–74 years, 2003 (thousands)*

	All	Primary	Secondary	Tertiary
Estonia	594.3	36.7	192.9	364.6
Tallinn	199.0	-	55.5	142.1

Source: *Statistics Estonia*

National data indicate other business services as being the biggest KIBS subsector in Tallinn; similarly, national data also suggest that the computer and related activities subsector is relatively small in Tallinn. However, some anecdotal evidence reveals that there is a significant cluster of businesses providing ICT and related services in Tallinn, although clearly not to the same degree as in Helsinki. An estimated 60%–70% of ICT businesses in Estonia are based in Tallinn.

In addition, 20 to 30 bigger ICT enterprises, mostly telecommunications companies, are located in Tallinn.

The particularly high levels of employment growth in both these sectors, as outlined by the Eurostat data above, would also be expected to filter through to the economy of the capital city. As found in Helsinki, data suggest that the R&D sector in Tallinn is virtually non-existent. However, in reality (as highlighted in the case of Helsinki) it would be expected that much of the R&D activities that are carried out in Tallinn are part of the overall activities of businesses with an industrial classification other than an R&D classification.

### *History of Tallinn KIBS cluster*

In economic terms, the free market economy in Tallinn is still young, although the basis of the KIBS sector predates Estonia's independence from the former Soviet Union. Many of the 'first wave' of KIBS companies to be set up in Tallinn were the fruits of the city's university academics, many of whom were still based in the Estonian capital before the Baltic state gained its independence. Many of the individuals who started these companies possessed a strong research background and had worked on a large number of international contracts.

These new companies would typically have worked with businesses and entrepreneurs outside Estonia. The oldest of the modern information technology (IT) companies in Tallinn, Baltic Computer Systems, is one example of the early KIBS businesses. The company was set up as a joint venture in 1989 between the governments of Sweden and the Soviet Union. The development model was subsequently copied by many other companies in the area. The 'second wave' of KIBS companies, predominately focusing on computer and related activities, often came from businesses set up by the same entrepreneurs who were responsible for the first wave of KIBS business development in Estonia.

In general, KIBS providers in Estonia have good relations with Finnish companies. The Estonian market remains much smaller than in Finland, which means that it is not considered a worthwhile market to join by many companies in Helsinki. Nevertheless, Helsinki represents an obvious market to enter into for Estonian companies in terms of its geographical proximity and booming economy.

## **Key players and companies**

Many of the key players in the KIBS sector in Tallinn and Helsinki are not actually KIBS providers. Tekes is a commonly cited source of finance for companies seeking to purchase knowledge-intensive services, while Nokia has also driven demand for services from these sectors. The government sector has guided the procurement of KIBS within the Estonian capital Tallinn, especially in relation to the implementation of e-governance throughout Estonia.

Spinverse Consulting, a business and management consulting firm, is an example of a KIBS enterprise that developed through connections with Nokia and Tekes. Founded in 2004, the company currently employs three people, and its managing director has 14 years' work experience in Nokia, having also spent six years working abroad. Spinverse Consulting specialises in early stage technology commercialisation. Its clients include innovative small and medium-size enterprises (SMEs) as well as government institutions. The company assists its clients in formulating strategic and business development plans, and helps to source financing and to identify partners and strategic partnerships for new businesses.

Spinverse currently manages Finland's nanotechnology programme. Although this contract is not its only source of revenue, it does provide the background to its business operations and also plays a role in developing networks. Spinverse also organises 'Nanotechnology in northern Europe', a network which attracts over one hundred companies across Europe.

Text Box 2: *Nokia Corporation*

The company history of Nokia can be traced back to 1865 with the establishment of a forest industry enterprise in southwestern Finland by mining engineer Fredrik Idestam. In 1898, Finnish Rubber Works Ltd was founded, and some years later, in 1912, Finnish Cable Works began operations. Gradually, the ownership of these two companies and Nokia began to shift into the hands of just a few owners. Finally, in 1967 the three companies merged to form Nokia Corporation.

At the beginning of the 1980s, Nokia strengthened its position in the telecommunications and consumer electronics markets through the acquisitions of Mobira, Salora, Televa and Luxor of Sweden. In 1987, Nokia acquired the consumer electronics operations and part of the component business of the German Standard Elektrik Lorenz, as well as the French consumer electronics company Océanic. In 1987, Nokia also purchased the Swiss cable machinery company Maillefer.

In the late 1980s, Nokia became the largest Scandinavian IT company through the acquisition of Ericsson's data systems division. In 1989, Nokia conducted a significant expansion of its cable industry into mainland Europe by acquiring the Dutch cable company NKF.

Since the beginning of the 1990s, Nokia has concentrated on its core business in telecommunications by divesting its IT and basic industry operations.

Source: *Nokia online*, <http://www.nokia.com/>

Karinne, another business consulting firm in Finland, is a company that supports predominantly Finnish companies specialising in foodstuffs to export their produce. Typically, these client companies have good business ideas, but lack the skills, expertise or knowledge to put these ideas into practice. Karinne provides export and trade advice to these client companies, as well as ensuring that clients understand their wider business needs. The method of service delivery changes according to the size of the client company. For example, larger companies may require a third partner to be brought in to provide specific or technical knowledge for a particular project. Such expertise may include, for example, legal advice in relevant fields. Karinne's business clients in Finland would generally fund the services purchased from Karinne via business support grants from Tekes.

In Estonia, the role of Skype – the internet communication software company – in the development of KIBS can be traced along two separate routes. The main software engineering and development of the Skype product (see Text Box 3) was undertaken in Tallinn. The Skype brand is now available worldwide, and was recently bought by internet giant, eBay. The money from the sale of Skype is being reinvested into Tallinn in the form of venture capital. One such company that has benefited from the new venture capital finance is SmartImplant, a research company specialising in helping technology reach the marketplace. A group of engineers and medical professionals came together at the Department of Electronics of Tallinn University of Technology (TTU) to set up SmartImplant. The company received venture capital investment gained from the venture capital fund formed following the sale of Skype. Professor Martin Min, one of the founding members of SmartImplant, believes that this investment helps investors to achieve an economic return and supports the development of the Estonian economy.

### Text Box 3: *Skype internet communications*

Skype was founded in 2003 and acquired by eBay on 14 October 2005. Skype Group is headquartered in Luxembourg with offices also in London and Tallinn.

Skype is the world's fastest-growing source of internet communication, allowing people worldwide to make unlimited voice and video communication for free between the users of Skype software. Skype is available in 27 languages and is used in almost every country in the world. The company generates revenue through its premium offers such as making and receiving calls to and from landline and mobile phones, voicemail, call forwarding and personalisation including ringtones and avatars. Skype also maintains relationships with a growing network of hardware and software providers.

Source: *Skype online*, <http://www.skype.com>

Another source of financial support and funding for KIBS providers in Tallinn includes Enterprise Estonia. For instance, the SPINNO programme, which has been in operation since 2001, receives funding from Enterprise Estonia and is one such project that seeks to increase the overall level of knowledge-based companies in Estonia. TTU manages the SPINNO programme, focusing on three areas of expertise.

### Text Box 4: *SPINNO programme areas of expertise*

1. Intellectual Property (IP) aims to enhance the overall awareness of IP issues and create a support infrastructure to improve the management of the programme. SPINNO also aims to provide complementary fundamental legal acts and to develop an information system in the IP field. The project's main objective is to create a competent support organisation, which will ensure availability of necessary support services for scientists in the field of patent research, services of patent attorney and patent protection.
2. Knowledge-intensive services aim to market and design services that are more appealing to companies and to rationalise the use of TTU's resources - R&D, laboratory, consulting, human resources (HR) development services such as recruiting and specialised courses. The SPINNO team also aims to create and develop additional financing options for TTU's R&D activities as well as to establish a coherent marketing strategy for TTU's resources towards companies. To facilitate these activities, SPINNO staff will assist with tasks such as proposal preparation, project pricing and sourcing new customers. The unit also seeks to introduce a consistent pricing policy for the university's services in general, which will both maximise benefits to the university and limit the effects of the 'shadow economy'.
3. Entrepreneurial spirit of employees assists in improving the overall awareness of entrepreneurship and in fostering the ethos of the Entrepreneurial University throughout the organisation. The unit aims to expand the general awareness of science-intensive entrepreneurship and, where appropriate, encourage the formation of spin-outs or the granting of licensing agreements.

Source: *SQW Limited*, 2003

The SPINNO programme has helped numerous knowledge-based companies, such as SmartImplant, to develop operations in Tallinn.

**Text Box 5: Enterprise Estonia**

Enterprise Estonia is one of the largest institutions within the national support system for entrepreneurship in Estonia, providing financing products, advice, partnership opportunities and training for entrepreneurs, R&D institutions and the public and private sectors.

The organisation actively operates in the following areas: promoting the competitiveness of Estonian enterprises in foreign markets; attracting foreign direct investments; inbound and domestic tourism; elaborating technological and innovative products and services; developing Estonian enterprises and the entrepreneurial environment, as well as increasing general entrepreneurial awareness.

Enterprise Estonia is one of the institutions responsible for the implementation of EU structural funds in Estonia, as well as being the primary provider of support and development programmes targeted at entrepreneurs.

Founded in 2000 by the Ministry of Economic Affairs, Enterprise Estonia aims to promote the competitiveness of the Estonian entrepreneurial environment and Estonian companies, thereby increasing the country's prosperity.

Source: *Enterprise Estonia online*, <http://www.eas.ee/>

In Helsinki and Tallinn, many key players are anchored in the KIBS sector. These organisations and enterprises are both public and private sector initiatives, and provide the catalyst for developing the KIBS sector in both capital cities. Many of the enterprises providing the basis for KIBS development lie outside the KIBS sector – indeed, it is non-KIBS companies that will mostly demand the services of the sector.

As well as providing financial support to stimulate the KIBS market, companies such as Skype have also provided a focus for other KIBS providers in Tallinn and Estonia. The same can be said of the public sector institutions such as Tekes which drive development and are widely known in both the Estonian and Finnish capitals.

## **Drivers of development**

Many of the forces that have driven KIBS development in Helsinki and Tallinn in the past are still evident today and will continue to aid development in a constantly evolving way. In Helsinki, Tekes and Nokia will remain important drivers of growth for the KIBS sector for some time. However, the availability of venture capital has not recovered to the level available before the bursting of the technology bubble in 2000. As a result, there is perhaps a greater reliance on government funding since a greater proportion of business finance is coming from finance initiatives backed by the government. As well as a smaller venture capital market than that found in the late 1990s, there is no current dynamic 'business angel' market either. A number of companies have received public sector financing, but, in general, public money is not crowding out private finance.

### **Private financing**

Most private financing concentrates either on seed financing or large-scale financing. Helsinki suffers from the typical 'mid-sized' gap in business finance. There have been virtually no initial public offerings (IPOs) in Finland for a number of years. Mergers and acquisitions (M&As) have been the main exit strategy for many companies, including KIBS providers.

### **Forms of service delivery**

Other drivers of development in Finland include progress in service delivery for KIBS providers. In the legal sector, for example, Borenus and Kemppinen is developing innovative ways of providing legal services in the form of products.



The company is compelled to be innovative in this way due to changes in the way in which legal services are being sold. At their Innopolis office, many of the companies that Borenien and Kemppinen works with are relatively young and are unsure of what they require in terms of legal services, and how much they should be paying for such services. As a result, they often look for fixed-price legal services.

The development of fixed price legal services will also have an impact on other KIBS providers in Helsinki. Notably, legal firms in Finland have a reputation for being very expensive, and many KIBS providers are unlikely to approach legal firms despite the fact that it costs nothing to ask for a service quotation. Many Finnish companies typically try to do things by themselves, or they may try to find a friend who could do the work for them instead. This can, especially in legal cases, cause problems in the long run and is particularly true when dealing with issues such as IP. By providing fixed-price services, Borenien and Kemppinen expect more KIBS providers and other knowledge-based companies to be able and willing to access legal services. The development of a legal services product also helps export growth, especially to those countries with a similar legal framework.

### Technology

The rise of advanced communication technologies in Helsinki is also helping to drive growth among the more traditional sectors, such as accounting. For example, HTK Accounting and Consulting is a company based in Helsinki looking to develop IT-based accounting and consulting services. The company was founded in 1995 with the aim of building a service centre for SMEs. In 2002, it also began to develop Enterprise Resources Planning systems. Its clients come from a variety of backgrounds and the company has an international focus. The company's core business activities are accounting and administration, although it aims to provide extra services for client companies by developing its online services.

The 'digitalisation' of HTK Accounting and Consulting services means that the market in which the company operates has been extended, as it is a virtual system that does not always require face-to-face, or even telephone, contact. Language and the knowledge of local legislation are the main barriers facing HTK. However, it is relatively easy to operate across the Baltic states due to similarities in language and legislation. For instance, legislative similarities with Sweden also mean that HTK can access the Swedish market relatively easily.

### Legislative changes

Finland is soon due to adopt international accounting standards into local legislation. This will help to internationalise the services offered by Finnish accounting companies, while simultaneously making domestic accounting firms more sensitive to foreign competition. Typically, Finnish accounting companies would not want to operate on a global scale, as they are generally small, family-run enterprises that do not want to expand abroad.

For both legal and accounting companies, such legislative changes will create new business opportunities as well as increased international competition. However, issues such as language and culture will continue to play an important role, as communication, whether electronic or direct, constitutes an important element of KIBS providers.

### Competition

While the international market for KIBS providers will clearly have an impact on companies in Tallinn as well as Helsinki, enterprises based in the Estonian capital city will experience a slightly different evolutionary path than those based in Helsinki. There are major opportunities for growth for Tallinn-based KIBS providers, both in terms of servicing domestic companies in a fast-growing economy, as well as by becoming more competitive in international markets. High growth levels in both computer and related activities as well as in other business services have been experienced in recent years, and both KIBS subsectors remain cost competitive in terms of pricing and investment opportunity. However, as the KIBS economy develops in Tallinn, it can be expected that cost competitiveness will fall, and the cluster of companies will be required to increasingly rely on the quality of their products and services.

KIBS businesses will also become more important in the economy as it develops. The problems associated with sustaining a large traditional industry are driving the need for more sophisticated KIBS providers throughout Europe. High-income European economies find it difficult to compete on cost terms with the Baltic states; as a result, growth in the KIBS sector is seen as a catalyst for development.

### **Investment**

One example of ‘cut price’ investment proposals taking place in Tallinn was given by Professor Martin Min of SmartImplant. A British venture capital firm was interested in investing in the company, but only at an extremely low level of investment – one which was of little benefit to SmartImplant. Anecdotal evidence suggested that some venture capital firms were ‘trawling’ the Baltic states for ‘cut-price’ investment opportunities, and it would appear that this was the motive of the British company in question. Naturally, SmartImplant refused the offer of the British venture capital firm.

### **Types of development paths**

Overall, KIBS providers are taking two separate paths of development – in Helsinki, development is being driven by changes in service delivery. The digitisation and commoditisation of KIBS providers is not only opening up new markets, but is resulting in collaboration between KIBS subsectors, such as accounting and software services.

In Tallinn, while international demand is still important, a growing domestic economy encourages the development of the KIBS sector. Economic growth in Estonia has surpassed most of its European neighbours, and provides a strong basis for economic growth for sectors such as KIBS. This will help increase the productivity of these growing sectors.

## **Benefits and advantages**

### **Labour market**

Helsinki and Tallinn companies encounter difficulties in recruiting skilled workers. However, the situation is slightly worse for companies in Tallinn because of the relatively easy flow of labour between Tallinn and Helsinki, and the more competitive wages and opportunities offered in this sector by companies in Finland.

Many of the problems faced by companies in the KIBS sector in Helsinki and Tallinn are global issues. One problem is that staff often need both specialist and generic business skills. This is especially true in many of the companies in other business services, such as business consulting. Spinverse, for example, find that recruiting staff is a difficult task. Since Spinverse is a business consultancy company that deals mostly with high technology manufacturing enterprises, it is unable to employ people who just have one skill set. The company needs to attract people who have a wider range of generic business skills, as well as skills that fit in with the needs of their client companies. For example, one employee at Spinverse has a physics background, but is also doing a masters degree in industrial economics. Moreover, there is a need for people with financial and venture capital expertise. Spinverse considers that it is often easier for companies such as nanotechnology enterprises to recruit staff than it is for companies in the services sector. The needs of a company providing services are much more abstract than those required in the manufacturing sector. TEKES is, however, beginning to develop support in this field.

Bayesian Information Technology is another Helsinki-based company experiencing particular problems recruiting skilled staff. The company has developed an innovative analytical tool providing dynamic business reports. The company often encounters difficulties to recruit skilled programmers, partly because it is difficult to assess the quality of a programmer in a selection procedure, and partly because only a reduced number of high quality programmers are seeking work in Helsinki. In addition, there can be important differentials in programmer performance. Ralf Ekholm of



Bayesian Information Technology asserted, however, that there is a surplus of programmers in Tallinn and St Petersburg in Russia, although these programmers would still need to be 'tested' before being offered employment.

Many of the new KIBS providers also need a mixture of specific skills. For example, HTK Accounting and Consulting find it difficult to retain skilled personnel, who should have both accounting and IT knowledge. As authorised public auditors are ageing, and young people view accounting as an unattractive occupation, the company often has to train young people into the job.

There is also evidence in Helsinki that the competitive labour market is proving detrimental to the wider KIBS cluster. Internal competition for skilled workers in the Finnish capital is normal and there may be a case to improve cooperation among companies and to curb the extensive poaching of employees between companies. Due to the threat of employees being poached, there is a disincentive for many KIBS businesses to provide specialist training for staff.

Alongside the internal competition for skilled workers, in Tallinn there is also competition for these workers from other European countries. Helsinki, in particular, is a popular destination for many Estonians with KIBS-related skills. Analysis of the KIBS subsectors reveals that software development in Estonia suffers from serious human capital constraints. ICT is not as popular among students today as it was five years ago in Tallinn. In some circumstances, software companies are employing over 100 people each month. This high staff turnover represents a serious problem for the computer and related activities sector in Tallinn. However, special projects are being developed which will hopefully raise again the popularity of ICT as a career for students in Estonia.

Inbio, a business consultancy company operating in the biotechnology field in Estonia, found that it was particularly difficult to find suitable employees. In order to find suitable staff, the company needed to invite a large number of candidates for interview. The company also found that those in the services branch of the KIBS sector are in high demand and can attract quite high wage premiums.

Recruitment was a problem experienced by companies in Helsinki and Tallinn; however, companies in Tallinn had more difficulties because of the competitive higher wage rates on offer in other EU Member States. Many of the KIBS providers, such as those providing ICT and accounting services, were often viewed as unfashionable by employees; this, in turn, also had an adverse effect on recruitment issues. As a result of these recruitment difficulties, there has been an upward pressure on wage rates.

As a result, employees in Helsinki and Tallinn are currently benefiting from higher wage rates. However, in many circumstances, employers are demanding more than just specific KIBS skills. Companies often require employees to have a range of skills, embracing in many cases a mix of specific skills, such as scientific expertise as well as generic business services skills. This requirement may make it more difficult for new graduates and other people entering the labour market to gain employment in the KIBS sector.

### Networks

Networking is an important element of the KIBS cluster in Helsinki and Tallinn. KIBS providers, by their very nature, serve predominately other businesses, and hence developing contacts, clients, partners and a good business reputation will always be an integral element of the business model of any KIBS enterprise.

Most large companies in Finland are located within a five kilometre radius of Helsinki, as are the majority of Finnish KIBS providers (Kautonen et al, 2005). Moreover, a wide variety of networks and business intermediaries exist in Helsinki. Indeed, the number of business support and network groups was seen by some enterprises in the city as detrimental to development, and was even regarded as an inefficient use of resources. For example, there are at least 70

different sources of funding or advice services available to new companies. Nobody has an understanding of the availability and services of all these support organisations, and there is a real need for rationalisation.

Culminatum is an example of an organisation that is interested in the development of KIBS in Helsinki. Culminatum is a development company and works with a variety of partners, including innovation institutes, public and private partnerships, public organisations, and universities. The company is currently participating in the EU's 'Lokomotiv' project, undertaking analysis on incentives for international investment between countries. It is also managing Centres of Excellence within various sectors such as nanotechnology.

Culminatum has undertaken a study assessing the concentration and the role of the KIBS sector in Finland. As a result of this study, the company is looking at a development project to understand how the KIBS sector supports technology-based companies. Culminatum is mostly concerned with addressing the needs of SMEs – some 90–95% of KIBS providers employ less than five people, and while there are some large companies, there are few medium-sized enterprises in the KIBS sector in Helsinki.

Text Box 6: *Culminatum Ltd*

Culminatum Ltd Oy is a development company owned by the Uusimaa Regional Council, the cities of Helsinki, Espoo and Vantaa, and the universities, polytechnics, research institutes and business community of the Helsinki region.

The main function of Culminatum is to manage the Centre of Expertise programme in the Helsinki region over the second programme period from 1999 to 2006. This programme promotes the use of the highest international standard of knowledge and expertise in business, job creation and regional development.

Source: *Culminatum online*, <http://www.culminatum.fi/english/>

Many networks in Helsinki are built informally by using common locations. The Innopolis incubator-like building which is based in the Espoo area of Helsinki is an example of such a network. Informal social networks within the Innopolis building have arisen simply by workers of the various companies meeting for lunch in the building's canteen. These social networks are an important link for KIBS companies; for example, it is often easier to recruit from such networks than through more formal recruitment procedures.

Most Helsinki KIBS companies also tend to use suppliers based within the local area. If a service was sourced from outside the wider Helsinki region it was either because such a service was not available within the local region, or because a company may have relocated to the Helsinki region and maintained a relationship with suppliers from their original base (Kautonen et al, 2005).

The Kautonen study (2005) cites a number of reasons for companies using suppliers outside Finland, namely that:

- an equivalent service is not supplied anywhere in Finland;
- the service is considered to be of premium quality;
- a foreign producer has more substantial business references;
- domestic supply is underdeveloped and there is not much competition between potential producers;
- a client company aims to use a specific expertise in establishing a business in the country where a producer is located, thus being in need of knowledge related to those specific markets (institutions, regulation, contacts, etc).

Many KIBS enterprises in Helsinki are conservative in the development of their networks. They often adopt a different networking model from the traditional technology-based business networks model. In this case, power struggles and a lack of trust are two of the main deterrents for the development of the KIBS network in Helsinki.

The development of networks in Tallinn has been different to that in Helsinki. The first and most obvious element of networks having the greatest impact on the Estonian KIBS sector is the development of supplier links. Many KIBS providers are developing in Tallinn as a result of the fast-paced Estonian economy. The development of supplier networks is important, particularly given the international competition that already exists for many KIBS subsectors. Many networks will also be based around academia for the KIBS sector in Tallinn; most of the KIBS entrepreneurs can be traced back to a university.

In terms of supplier networks, very good relations exist with Finnish companies. The Estonian market is still much smaller than in Finland; thus, it is not worthwhile for some Finnish companies to concentrate on the Estonian market. Helsinki, however, is a clearly advantageous market for Estonian businesses.

Nevertheless, Tallinn companies are also finding that links with Helsinki companies are detrimental in areas such as employment. Finnish companies are employing many Estonian ICT workers as the wages of software development jobs in Helsinki are twice the amount of those in Tallinn.

### **Cluster image**

Helsinki's reputation as a world-class, knowledge-based, highly-competitive economy is widely accepted and deserved. Companies in the Helsinki region consider that they are part of a distinct 'high-tech cluster'. However, Helsinki's reputation also provides some problems – its high quality, high value-added goods and services also have a reputation for being expensive. This is especially true in the legal services sector.

In Tallinn, where there is a less developed KIBS sector, the cluster is understandably viewed less prominently than the Helsinki cluster. However, there is a clear high-tech KIBS cluster image in Tallinn. For example, of the total university spin-out businesses existing in Tallinn, many are in the KIBS sector, especially in sectors relating to ICT.

Many other differences exist between the KIBS clusters in Finland and Estonia. Finland has more industrial pull factors than Tallinn, although the global emergence of Skype is a major advantage for Estonia. The focus on ICT is also different in Estonia, with e-governance playing a much larger role than in Finland.

### **University influence**

Many KIBS businesses in both Tallinn and Helsinki have obvious links with universities. This is more true in computer and related activities sectors than in the other business services sectors. Bayesian Information Technology is one such example of a company in the computer and related activities sector that has emerged from a university, which produces a virtually accessible analytical tool for businesses. The company has been operating for about seven years and is owned by a relatively large number of people, many of whom come from the University of Helsinki's Department of Computer Science. Many of those who are currently employed by Bayesian Information Technology also work part-time for the University of Helsinki.

In Helsinki, universities are also considered by some enterprises to be harmful to the development of KIBS companies. Universities themselves are under pressure to generate income from services. However, universities will often have an advantage over small consultancies, simply because of the resources at their disposal as well as the possibility of 'subsidised' employment. Small enterprises are often reluctant to complain about this situation.

For instance, Testonica is an ICT services company which provides and produces software for testing electronic circuitry and microchips. It is a KIBS company that has emerged from Estonian academia. The company was formed by a mixed group of software engineers and staff of the Tallinn University of Technology. The core members of the business all have a share in the company and currently split their time between Testonica and the university. Staff at Testonica consider that there could be improvements in working relationships between industry and academia. Academics often work in isolation in Estonia, particularly when compared with Germany and the US.

Some Tallinn companies also considered that the university environment was holding back the development of KIBS. Indeed, in the case of SmartImplant, the company itself had to overcome some of the barriers to growth caused by the Tallinn University of Technology. Such barriers included excessive bureaucracy, inefficiency, and a lack of understanding of the international business environment. More recently, the Tallinn University of Technology has started to take enterprise more seriously, but there is still evidence to suggest that some start-ups emerging from the university are reluctant to develop formal links between the spin-off company and the university.

### **Regulatory environment**

One of the key advantages for KIBS providers in Tallinn is the regulatory environment. It is easier to set up a spin-off company in Estonia than it is in Finland. The enterprise climate is good in Estonia, taxation is lower for businesses and there is also generally less bureaucracy. At the University of Technology, many academics own their own small company, such as a consultancy, software company or design business. Many of these companies are simply an extra revenue resource for the university staff members in question. Some of these enterprises, however, are genuinely growing enterprises.

In Tallinn, European Structural Funds are being used to assist in developing enterprises. Some KIBS providers in the Estonian capital are also likely to benefit from the policy of the Estonian government to try to raise R&D spending from 0.9% of gross domestic product (GDP) to 1.5% of GDP by 2010.

Both Helsinki and Tallinn will also be affected by changes in the regulatory environment in the accounting and legal sectors. Movements to align accounting procedures with international standards will provide both an opportunity, in terms of a wider market for KIBS companies in Tallinn and Helsinki, as well as a greater threat in terms of increased competition.

### **Finance**

Accessing finance is a big issue for KIBS providers based in Tallinn and Helsinki, particularly since the dot.com boom and bust. In 1999, the marketplace was different and gaining finance was a relatively easy process. The market conditions are slowly improving and there is a renewed accumulation of both funds and companies. The strategies of investors, however, are that they want to acquire companies 'on the cheap'. Many prospective financiers are approaching companies with disturbingly low investment offers.

Nevertheless, the lack of available finance for KIBS providers cannot be totally attributed to venture capitalists having their fingers burnt by the dotcom experience. Among KIBS providers, there is usually no such physical capital, but it is rather human capital which is being invested in. It is very difficult to measure these intangible assets, and it can therefore be difficult to gain investment. Some companies are attempting to elaborate ways of analysing and measuring these intangible assets, although incremental growth is slow in this respect.

In Tallinn, there are also issues relating to how finance is being used. Finance is typically used to fund capital or bureaucracy, but very little money would be spent on technology or innovation. According to Marius Kuningas, a technology transfer officer at a Tallinn university: 'In most EU countries, where there is a gap between industry and academics, you try to provide a bridge. In Estonia they throw money at it.'

There is also evidence to suggest that many KIBS providers in Tallinn exist purely to access government finance. The objective for these companies is to acquire government money, and not to generate wealth and innovation themselves. It is estimated that four fifths of proposals seeking government finance are designed purely to access these funds.

It is not all bad news for KIBS providers trying to gain financing for their companies. In the case of SmartImplant, several international investors were interested in investing in the company, and while some investment proposals were derisory, some (including offers from US-based venture capitalists) will provide significant investment for the company.

### Threats of outsourcing and offshoring

The threats and opportunities of outsourcing and offshoring in Tallinn and Helsinki understandably vary between sectors. A highly-specialised business consultancy such as Spinverse, or a focused software development company such as Testonica or Bayesian Information Technology would have very little to gain from outsourcing or offshoring business activities. However, larger companies in the computer and related activities sector may clearly benefit from offshoring programming functions to lower cost economies.

For many KIBS companies in Helsinki, there will be continued growth as a result of outsourcing. Outsourcing is becoming more popular, although some barriers still exist, such as language and knowledge of local customs and legislation.

In Tallinn, where labour costs are relatively low in comparison with many other EU Member States, there is a comparatively small threat of job losses due to offshoring. Indeed, recruitment is more of a problem, with many of those working in the ICT sector finding higher-paid employment in Helsinki preferable to working in Tallinn. However, the growth of KIBS providers in the Estonian capital will ultimately lead to an increase in outsourcing. Celecure, an R&D-based medical company in Tallinn, already outsources a significant degree of business activities in cooperation with other service sector companies. Most outsourcing can be undertaken by local companies, for example IT and accounting firms.

### Links between Helsinki and Tallinn

The links between Helsinki and Tallinn go beyond economic connections. In comparison with many other European countries, Finland and Estonia have relatively close cultural and linguistic links. There is evidence to suggest that some businesses operating throughout the KIBS sector will access markets in both Tallinn and Helsinki, while it has already been noted that there has been a flow of labour from the Estonian capital to Helsinki.

Borenus and Kemppinen, a legal firm based in Helsinki, have a close working relationship with partners in Tallinn. Legal services have found a sizable market in the Baltic states, which is expected to grow in the future. The Baltic states are currently trying to implement EU legislation and this is creating demand for legal services, although there is still a long way to go in terms of implementing EU law. However, the Estonian economy is a very fast growing economy and the opportunities in Tallinn will presumably enlarge further.

Similarly, there are major opportunities for Tallinn-based enterprises to penetrate markets in Helsinki. Relatively low labour costs in comparison with the Finnish capital mean that Tallinn benefits from cost competitiveness in comparison with Helsinki-based enterprises. Although cheap labour costs should not form the basis of a sustainable economic development programme, in the case of the Helsinki-Tallinn cluster it will help to foster and create closer links between companies on either side of the Gulf of Finland.

Many companies in the two cities, however, consider that there is not a particularly dense cluster linking business activities in Helsinki and Tallinn. The relatively strong KIBS cluster in Helsinki has negatively affected the cluster in Tallinn to a certain degree. Many of the KIBS providers operating in an international market would not differentiate between Finland, Estonia or any other Baltic or Nordic countries. One company in Tallinn considered that the city lacked, in comparison with Helsinki, a critical mass of ICT and KIBS companies.

Despite some local enterprises emphasising relatively close links between the two cities in terms of culture and language, there was some evidence to suggest that working practices remained different in Finland and Estonia.

Having local knowledge is an important asset for any company entering a market in the Baltic states. There is a long way to go until there are similar understandings in terms of labour between Finland and the Baltic states, although the situation is improving. For example, Finnish companies would usually have hired employees in Estonia through a middleman and would rarely hire directly. This trend has changed and workers in Tallinn are regularly hired directly by companies based in Helsinki. It is expected that Tallinn will be much closer economically to Helsinki in five to 10 years.

Some Estonians are suspicious of 'money-making ventures', a remnant of the previous regime that was once responsible for the economic system in Estonia. This cultural difference will change as the Estonian economy develops, but it remains a barrier to development and investment for some companies in the Estonian capital.

Formal projects have been developed to help create bonds between Helsinki and Tallinn. The 'Euregio' initiative started in 1999 to foster more cooperation between Estonia and Finland; the initiative aims to create a real cluster between businesses in Tallinn and Helsinki.



### Text Box 7: Euregio association

The objective of the Euregio association is to promote cooperation inside the region and to enhance regional integration. Euregio's role is to act as:

- a political discussion forum;
- an initiator of cross-border and inter-regional cooperation projects;
- a forum for sharing experiences;
- a mediator in the dissemination of know-how and information.

Integration within the twin-region is strengthening through social and economic interaction. The fact that Estonia and Finland are equal partners within the EU increases their mutual dependence. Euregio acts as a catalyst by initiating activities in the areas of common interest for all parties involved. The association also acts as a mediator and facilitator, bringing together stakeholders and paving the way for further cooperation inside the region.

Partners of the Euregio association include the following:

- City of Helsinki (<http://www.hel.fi/wps/portal/Helsinki/>)
- City of Tallinn (<http://www.tallinn.ee/>)
- Republic of Estonia (<http://www.riik.ee/>) represented by Harju County Government (<http://www.harju.ee/>)
- Uusimaa Regional Council (<http://www.uudenmaanliitto.fi/>)
- Union of Harju County Municipalities (<http://www.hol.ee/>)

Source: *Euregio online*, <http://www.euregio-heltal.org/>

Overall, however, there would appear to be no natural KIBS cluster that exists encompassing both Helsinki and Tallinn. Many of the links are simple purchasing networks, and there is little evidence of collaboration between the Estonian and Finnish capitals.

## Future perspectives

Businesses and those working in the KIBS cluster in Helsinki and Tallinn will continue to face similar challenges in forthcoming years. There are a number of potential growth routes for KIBS enterprises. The most probable outcome will be continuous growth, which will be at least partly due to increased outsourcing of business activities. There are also likely to be new markets emerging to provide new solutions for new requirements from businesses. However, the possibility of 'insourcing' also exists – some companies may begin to insource functions that are currently outsourced.

In Tallinn, it is also expected that employment growth will continue in KIBS providers, as a result of the fast-paced growth of the Estonian economy, creating demand for knowledge-intensive business services. Emerging markets in other Baltic states, as well as in the St Petersburg area will also provide new opportunities for KIBS enterprises based in Tallinn.

The future of the business consultancy sector in Finland still depends on government policy – it appears possible that the government in Finland will be less willing to provide consultancy funding in the future. Many KIBS companies in Estonia are also reliant on government policy, especially in the computer and related activities sector.

Traditional KIBS, such as accounting, are expected to see a change in methods of delivery in the future. For example, at HTK Accounting and Consulting, it is envisaged that in the long term there will be major changes in the world of accounting. For example, invoices will move from a paper-based to electronic system of invoicing, which can be integrated within the overall accounting system. An example of such a system is that developed by the Finnish Post Office, which now issues invoices electronically.

The biggest challenge for many enterprises in the KIBS sector is to ensure that their client companies continue to be innovative. Organisations need to understand what new initiatives and developments in the KIBS sector can offer to them. If company development is to continue, knowledge should also continue to develop on an ongoing basis.

Generally, KIBS providers in Finland and Estonia will need to address a number of issues in the near future, namely:

- greater cross-disciplinary collaboration and cooperation;
- a need to recognise that the disciplinary background is just one element of their work;
- a need to be able to apply knowledge in the clients' situation.

In other words, KIBS businesses will need to constantly evolve in the future. As demand for KIBS services will always come from other businesses, it is the needs of these other businesses that will form the basis of development for the KIBS sector.

Finally, it is important to reiterate the possibility of a future evolution of a Helsinki-Tallinn KIBS cluster. Although there is currently a partially connected Helsinki-Tallinn cluster, with both locations largely operating independently, there is considerable political will in both city regions to establish further links. The key to the success of this political development will clearly depend on further involvement in cross-border interaction and cooperation of the corporate sector in both cities. Such involvement can be anticipated to increase as economic disparities between the two city regions narrow. Providing this continues to happen, and the current political will is maintained, the outlook for a functional connected KIBS cluster developing in the future is bright.

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