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LogOnBaltic

ICT SURVEY IN POMERANIA, POLAND

Anna Trzuskawska and Tomi Solakivi

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Anna Trzuskawska
and
Tomi Solakivi

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EXECUTIVE SUMMARY

”This report is part of the cross-national European Union funded project LogOn Baltic. By means of a web-based survey – completed with personal interviews - mainly manufacturing companies, trading companies and logistics service providers were asked to answer questions regarding the use of ICT in their daily business. The aim of the survey was to identify the intensity and type of ICT utilized by companies operating in the region of Pomorskie Voivodship in Poland.

The questionnaire used in the survey covers the following fields:

- Use of ICT systems
- Use of Internet
- E-commerce and e-business
- General assessment of ICT usage

The first chapter gives information about the LogOn Baltic project and about the participating partners. In the second chapter, the surveyed companies are introduced and classified according to their size, industry and function of the contact person.

In chapter 3, the actual survey results are presented. Chapter 3.1 contains an analysis on the extent to which Internet and email are used in the companies. The administration of the ICT issues, ICT expenses, as well as security measures that are implemented with respect to ICT, are also discussed in this chapter.

Chapter 3.2 deals with the company’s Internet usage: types of connection, availability and features of the company website, purposes for the use of Internet.

Chapter 3.3 concentrates on e-commerce and e-business. In first place, the means of communication most utilized for business communication are evaluated. In second place, the future role and usage of electronic communication processes between companies and their suppliers and/or customers are assessed.

This section of the report finishes with chapter 3.4, which deals with barriers to the implementation of the Internet, e-commerce and ICT in general. The fourth and last chapter summarizes the results.”[1]

[1] W.Kersten at all: ICT Survey In The Southern Metropolitan Region Of Hamburg. LogOn Baltic, 2007, p. 3.

STRESZCZENIE

Prezentowany raport stanowi element międzynarodowego projektu, finansowanego z funduszy Unii Europejskiej, o nazwie LogOn Baltic.

W internetowych ankietach wypełnianych w sieci (tzw. on-line) oraz podczas bezpośrednich spotkań z respondentami, głównie przedsiębiorstwa produkcyjne, handlowe i logistyczne zostały poproszone o odpowiedzi na temat wykorzystywania technologii informatycznych (ang. ICT = Information and Communication Technologies) w codziennej działalności gospodarczej. Celem przeprowadzonego badania ankietowego było zidentyfikowanie: poziomu intensywności wykorzystywania technologii informatycznych oraz rodzajów stosowanych rozwiązań informatycznych w przedsiębiorstwach działających na terenie województwa pomorskiego.

Kwestionariusz zastosowany w badaniu ankietowym dotyczył następujących zagadnień:

- Zastosowanie systemów informatycznych,
- Wykorzystanie Internetu,
- Biznes elektroniczny czyli tzw. ang. e-commerce and e-business,
- Ogólna ocena stosowania technologii informatycznych.

Pierwszy rozdział przedstawia informacje dotyczące projektu LogOn Baltic oraz partnerów projektu biorących udział w badaniu. W drugim rozdziale opisano przedsiębiorstwa, które wzięły udział w badaniu ze względu na ich rozmiar i rodzaj działalności oraz funkcje jaką pełniły osoby udzielające odpowiedzi.

W rozdziale 3 prezentowane są wyniki badania. Podrozdział 3.1 zawiera analizę stopnia w jakim przedsiębiorstwa wykorzystują Internet i pocztę elektroniczną (e-mail) w swojej działalności gospodarczej. W tej części również podejmuje się dyskusję nad administrowaniem systemami informatycznymi, ich kosztami oraz działaniami związanymi z bezpieczeństwem systemów informatycznych i danych.

Podrozdział 3.2 skupia się na wykorzystaniu Internetu. Przedsiębiorstwa zostały zapytane o rodzaj stosowanych połączeń, posiadanie i wykorzystanie stron internetowych.

Podrozdział 3.3 koncentruje się na biznesie elektronicznym, czyli e-commerce i e-business. Po pierwsze na tym jakie sposoby i środki są

najczęściej stosowane w komunikacji dla celów gospodarczych. Po drugie podrozdział ten ocenia jaka jest przyszła rola komunikacji elektronicznej w procesach pomiędzy przedsiębiorstwami a ich dostawcami i klientami.

Ta część raportu kończy się podrozdziałem 3.4, który porusza zagadnienia dotyczące barier we wdrażaniu Internetu, biznesu elektronicznego i technologii informatycznych ogólnie. Czwarty i ostatni rozdział podsumowuje wyniki badania.

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1 INTRODUCTION

1.1 Project introduction – LogOn Baltic

The LogOn Baltic project was approved within the Baltic Sea Region (BSR) INTERREG III B Neighbourhood Programme, which is sponsored by the European Regional Development Fund (ERDF), as part of the Structural Funds, and co-financed by national project partners.

The purpose of LogOn Baltic is to present solutions to improve the interplay between logistics and Information and Communication Technologies (ICT) competence and spatial planning and strengthening Small and Medium-sized Enterprises (SMEs) competitiveness in the BSR. This is primarily done by the production and dissemination of information for regional development agencies on how to support enterprises in the participating regions in the field of ICT and logistics, thus improving regional development.

The following regions are participating in the project:

- South-West Finland
- Östergötland (Sweden)
- Denmark
- Southern Metropolitan Region of Hamburg (Germany)
- West-Mecklenburg (Germany)
- North-East Poland
- Lithuania
- Latvia
- Estonia
- St. Petersburg (Russia)

LogOn Baltic provides an overview of logistics efficiency and logistics information systems and their exploitation, in order to improve the interaction between SMEs and other public/private actors.

On the one hand, the empirical activities of LogOn Baltic compare the existing logistics services and infrastructure with the logistics needs in the participating regions, making it possible to develop perspectives and action plans for strengthening the logistics competence in the

regions. On the other hand it describes the existing ICT infrastructure and services, revealing up to what extent they meet with the companies' needs for further development. In this way, LogOn Baltic focuses on:

a. identifying development agencies and evaluating their performance in each region
b. evaluating the level of logistics and ICT efficiency
c. suggesting concrete actions for regional and local public sector bodies

Data are gathered in each participating region using four tools: Development Measure Impact Analysis (DEMIA), Logistics survey, ICT survey and Expert Interviews; each of these is presented in a separate report. These results together with secondary data is presented in a regional report, that will describe the state of affairs in the region, with recommendations on what and how the region needs to develop. The regional reports are used as a basis for making an interregional comparison which is reported in an inter-regional report. All reports are available on the project homepage, www.logonbaltic.info.

1.2 Regional partner introduction

The regional partner in Poland, in Pomerania, is The City of **Pruszcz Gdański.** The city of Pruszcz Gdański is situated in the South part of the conurbation formed by Gdańsk, Gdynia and Sopot, so called: the Tri-City Agglomeration. Pruszcz Gdański is only 10 km from the city centre of Gdańsk. It occupies area of 16.5 sq km, and is inhabited by 23,000 people. The city is an important node in the country road and railway transportation system. In the nearest neighbourhood there is the Tri-City ring and the newly constructed A-1 motorway.

Pruszcz Gdański is one of the most attractive cities in the Northern Poland for investors. This opinion is proven by investors directly as well as the country wide economic rankings. In the recent years the local authorities of the city of Pruszcz Gdański have been ranked in „The Gold Top 100" – the best cities for investors in Poland. Pruszcz Gdański has been awarded with the 3rd position and with the statue of the Polish King Kazimierz Wielki in the Polish cities investor ranking.

Pruszcz Gdański continuously develops: currently there is the new city centre constructed and a lot of effort and focus directed into the road system development investments. Few years ago the industrial park was created in the neighbourhood of A-1 motorway and it is still

growing - a lot of known companies located their plants there or have plans to locate soon.

The City established cooperation with the team of the **Department of Logistics, University of Gdańsk** - Faculty of Economics in order to perform the LogOn Baltic Expert Interviews. The Department of Logistics at University of Gdańsk is one of the leading academic institutions in Pomerania and in Poland in research and education within the field of logistics. Courses are given both at the bachelor and master programmes at the Faculty of Economics as well as at the International Business and Master of Business Administration programmes. The Department of Logistics gathers 7 experienced researchers engaged in government (mainly Ministry of Transportation) and business logistics projects. The team has participated in UE founded research projects such as: TEMPUS, PHARE, INTERREG II, and NELOC. Beside the research work the team concentrates on academic teaching and developing the programmes for education in logistics.

1.3 ICT survey introduction

This survey – part of the LogOn Baltic project - is one of the tools for primary data collecting. It aims at reflecting the use of ICT as interface between the private and public sector. It is also intended to describe the existing ICT infrastructure and services in the participating regions, revealing up to what extent they meet with the companies' needs for further development.

The questionnaire consists of five modules. Each region has the opportunity to add one or two questions focusing on specific regional issues. These additional questions were added in an extra module (Module F). The same questionnaire has been used in all regions.

The survey is mainly conducted as a web-based survey, but mail surveys, phone surveys and interviews have also been used as a complement in some regions.

This is by far the largest survey conducted in the Baltic Sea Region in the field of ICT. In this report, data and analysis will be presented for one region only.

The data is also used to make a cross-regional analysis, focusing on differences and similarities between the regions. The cross-regional analysis is presented in a separate report available at the project homepage, www.logonbaltic.info.

2 SURVEY DESIGN

2.1 Target group and sample

Companies operating within Pomerania (Pomorskie Voivodship) in Poland, from several industries such as: manufacturing industry, retail industry, logistics service providers and others, form the target group of the survey. The size of the target group has been estimated based on the data published by the Central Statistical Office, based on a register called REGON where all legal entities, individual entrepreneurs and organizational entities without legal personality are registered. At the end of 2005 there were in total 226.4[2] thousand registrations in REGON for Pomerania Voivodship. According to information provided by the Statistical Office in Gdańsk, there are:[3]

- 27,702 manufacturing companies – c.a. 22%[4] of employed people,
- 61,544 trade, service and retail companies – 15%[5] of employed people,
- 15,902 logistic companies (including transport, warehousing and telecommunication services) – 7%[6] of employed people

In the Pomerania region, the majority of companies are SMEs (Small and Medium size Enterprises); there is an estimate that only c.a. 3.2%[7] of the employed people work in large companies.

Since the survey was designed as an online based questionnaire, the team consisting of representatives of City of Pruszcz Gdański and the University of Gdańsk sent e-mails to around 1,230 employees of these companies in April, May and June 2007 and asked them to take

[2] Statistical Yearbook of the Regions – Poland, Central Statistical Office, Warsaw 2006, p. 183.
[3] Information provided by Statistical Office in Gdańsk during a phone call conversation to a representative of the City of Pruszcz Gdański
[4] http://www.klastry.pl
[5] Ibid
[6] Ibid
[7] Ibid

part in the survey. The e-mails contained a link leading to a website where the participants could directly answer the questions.

Most of the e-mail addresses were gathered from Internet databases such as Panorama Firm, Polskie Książki Telefoniczne and Pomorskiefirmy.pl. Other databases with a specific focus on companies in the logistics sector were used, for instance, from the Polish Freight Forwarders Association and one database prepared by alumni and students specializing in logistics.

After sending the first e-mail, two reminders were sent in a two-week interval in order to increase the response rate. Furthermore, the survey was sent by the Chairman of the Polish Freight Forwarders Association to the members with a recommendation to participate in the survey. Additionally, during the meetings with entrepreneurs which took place in June 2007 in Pruszcz Gdański, the Mayor of the City of Pruszcz Gdański invited the participants to take part in the survey. Finally there were direct phone calls and face-to-face meetings with entrepreneurs inviting them to participate in the survey. Some of the answers were collected in a paper form and then entered to the database. Altogether more than 1,350 people were contacted via e-mail - or directly – regarding the survey, and finally, 71 participants answered the questionnaire.

In this report, the responding companies were generally categorized according to the sector or the company size. Micro, small or medium size companies, depending on the turnover, are defined by the European Commission as follows (European Commission 2003):

- Micro companies: €0-2 million
- Small companies: €2-10 million
- Medium size companies: €10-50 million

Large companies are characterized by a turnover of more than €50 million. The company size and the industrial sector they belonged to were generally used as background parameters.

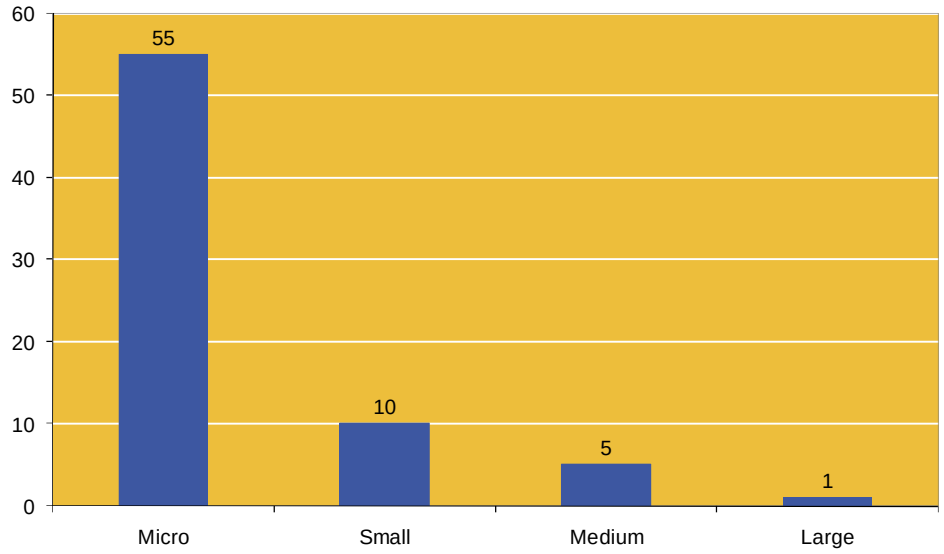

Figure 1 Number of respondents according to company size

Figure 1 shows the number of surveyed companies according to their size. From a total of 71 companies, 77% (55) represent the micro companies, 14% (10) are small companies, 7% (5) are medium-sized, and more than 1% (1) represent large companies. The distribution of companies shown in Figure 1 represents the trend in Pomerania. There are many enterprises: 103[8] per 1000 inhabitants; however, the majority of them are micro and small companies. In the year 2003, only 0.13% of all registered companies in REGON employed more than 250 employees and in the SME sector almost 95% of companies were micro companies.[9]

As a result of the survey, more than 98% of the respondents are classified as SMEs. This result slightly varies from the real market structure, but is very close and can be considered as representative.

[8] Statistical Yearbook of the Regions – Poland, Central Statistical Office, Warsaw 2006
[9] http://www.klastry.pl

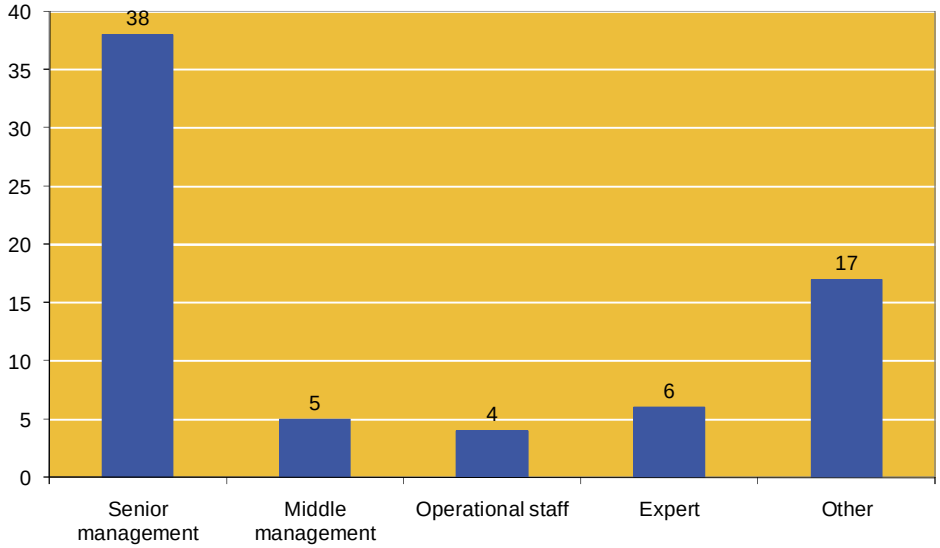

Figure 2 Number of respondents according to respondents' position in the company

The respondents were also categorized according to their position in the companies (Figure 2). 60% of the respondents either belong to the Senior- or to the Middle Management. More than half of the respondents declared they are Senior Managers. This pattern reflects the fact that the majority of the respondents were from micro and small companies, where the participants were owners or co-owners of the companies, considering themselves as Senior Managers. In most of the cases, these people are the ones authorized to speak on behalf of the companies, have access to Internet and also have a broad overview of their current situation with respect to ICT and logistics as well as their developments. The high number of Senior and Middle managers supports the credibility of the survey. Additionally, in small and micro companies, the organizational structure is very simple, flat, indicating that the management is also directly involved in operations and day-to-day activities, having the right knowledge and experience to answer the survey.

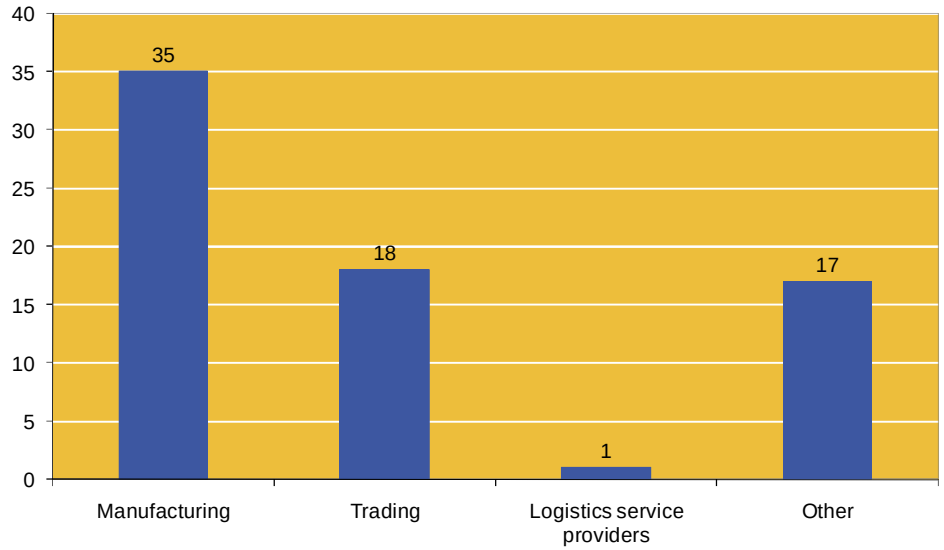

Figure 3 Number of respondents according to main industry

In addition to their size, the companies were classified according to industrial sector they belonged to (Figure 3). From the surveyed companies, 49% were representing the manufacturing industry, 25% represented the trading industry, and more than 1% represented logistics service providers. The remaining 24% were classified as “Others”, e.g. banking, health care.

These three main industries were especially defined for the purpose of the LogOn Baltic Project, since the companies belonging to these industries certainly deal with logistics. Nevertheless, since the research objective is also to mirror ICT as the interface between the public and the private sector, other companies are important for the results as well.

The distribution of companies in the Pomerania Voivodship region according to the industrial sector based on the REGON registration differs from the one presented in Figure 4. Approximately 12% of the companies are engaged in manufacturing, and 27% in trading and service. Approximately 7% of the companies offer different types of logistic services and telecommunication services. However, the criteria applied by the Polish Central Statistical Office to group and classify the companies differ from the grouping applied in the survey:

- Trade, service and retail companies in one group,
- Logistics and telecommunication in one group

Therefore, the distribution of companies according to REGON contains a bigger group of trade, service and retail companies than

manufacturing. The distribution would be better aligned with the distribution obtained from this survey if some companies from the category “Others” were considered in the trading industry. Also, the 7% of logistics and telecommunication companies differ from the 1.4% obtained from the survey because the survey captures only logistics companies without telecommunication. Notice that the real distribution of company types in Pomerania differs from the one represented in the gathered survey answers considering the analysis done above. However, the distribution of the surveyed companies still could be used for drawing conclusions regarding ICT in the companies in Pomerania region, in general.

2.2 Main themes of the survey

The ICT Survey consists of five mandatory modules (A – E), and an optional module for region-specific questions. The main themes of the survey are:

- General contact- and background information of the companies
- Use of ICT in the companies within the regions
- Use of the Internet in the companies within the regions
- E-commerce / E-business
- General assessment of the use of ICT in the regions
- Region-specific issues [optional module]

The ICT Survey is intended for the whole population of regional companies.

3 FINDINGS FROM THE SURVEYS

3.1 Use of ICT systems

The survey results show that both e-mail and the Internet are used in more than 90% of the surveyed companies. However, there are still enterprises where no employee has got an e-mail account or access to Internet as it is presented in Figure 4.

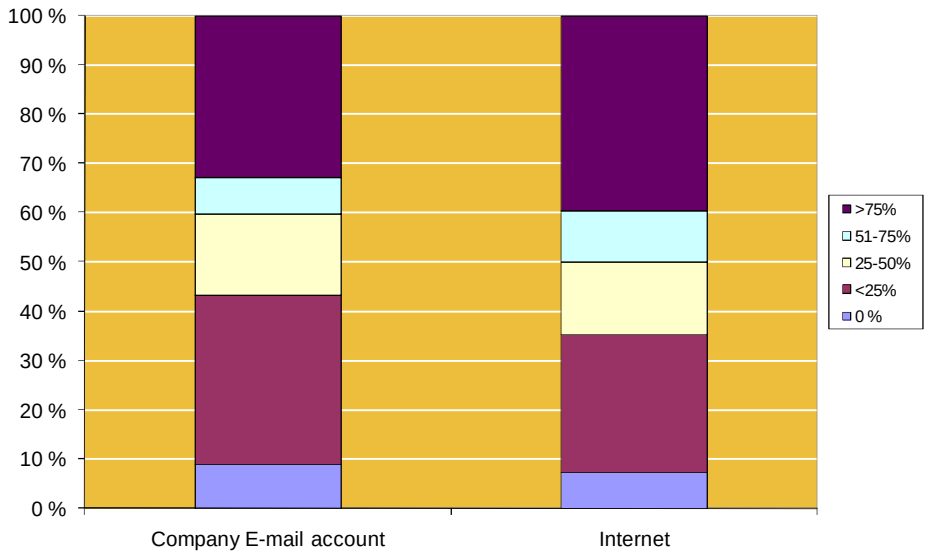

Figure 4 How many percent of employees have access to E-mail and Internet

In the companies who declare they have got e-mail accounts and Internet access only some employees have these; most of the employees do not. Only around 40% of the companies stated that over 75% of their employees had Internet access and even a few less companies agreed that their staff also had a company e-mail account.

Finance and Accounting are the areas where ICT is used most often by companies (in over 80% of surveyed companies). This fact is

related to the easy availability of simple and cheap software (often free pack sold with a magazine or book) on the market, usually used by SME companies. This trend is also driven by relatively complex requirements of the Polish tax offices. Production and Production Planning are the areas where ICT is used the least (26-36% of the companies); 49% of the surveyed companies were manufacturing companies. This could be explained by the fact that in the case of micro and small companies, the production involves a low number of employees and resources and it is manageable without any supporting software. However, there is a wider use of ICT in the business areas where companies interface with external environment: Marketing & Sales: 70% manage the relations and orders with suppliers; more than 60% use software solutions and cooperate with customers; more than 65% use software. In general there is a relatively small development expected; less than 10% - in some cases even less than 5% - of companies plan to use ICT in a certain business area in the future, where they don't use it today.

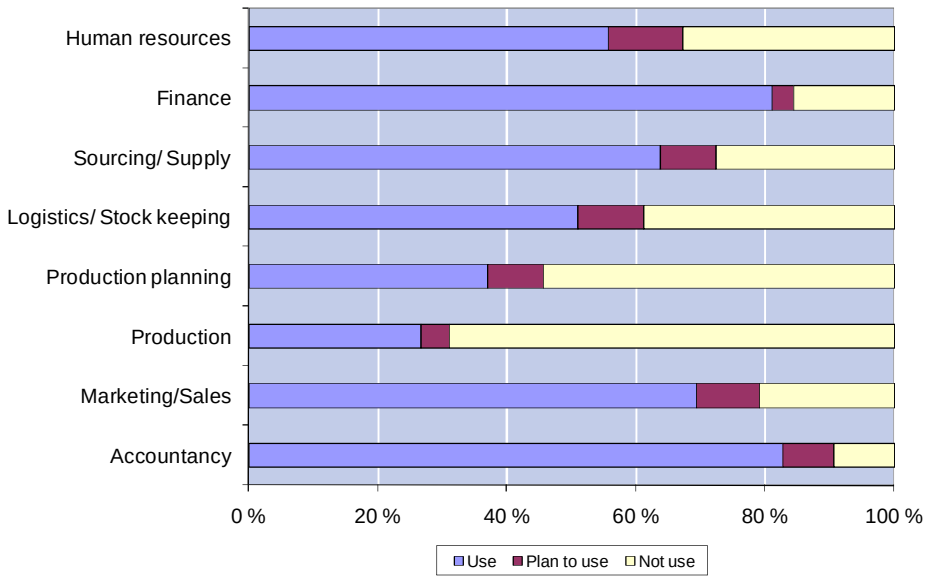

Figure 5 On which areas of business the companies are using ICT

The fact that in many cases there are not many software tools used and, when used, the software tool is usually simple, is also reflected in Figure 6, showing that almost 40% of companies do not have an own IT department, neither to they hire an IT service provider. Only around 15% organized their own IT department; most of the rest uses ad-hoc IT services from third party providers.

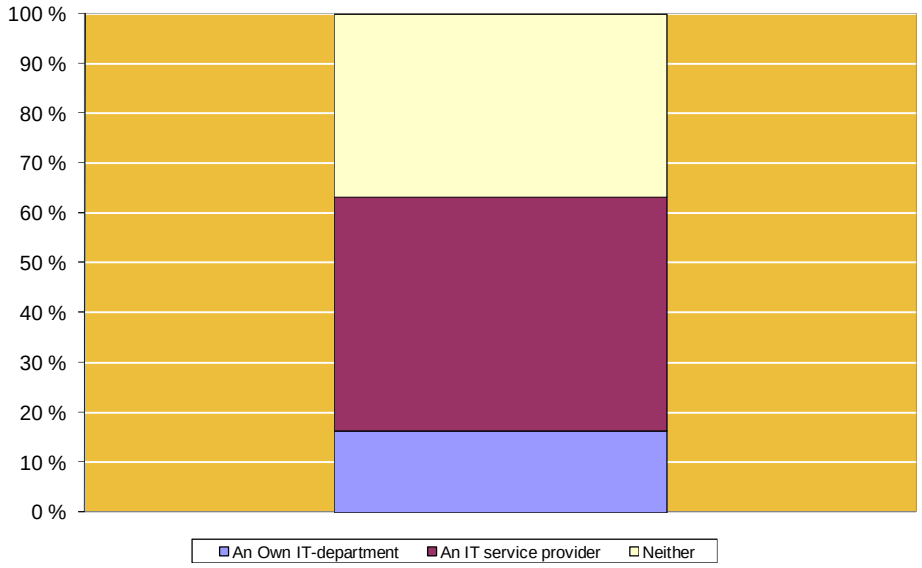

Figure 6 How the ICT administration is handled in the companies

In the next question, companies estimated their ICT expenses (IT personnel, software and hardware) for the year 2005 as a percentage of their turnover (Figure 7). In total, the structure for the two main aspects – hardware and software - is very similar. Almost 40% of the companies do not have IT personnel expenses at all, confirming the abovementioned conclusion regarding the lack of an own IT department and services from IT service providers. The results also reflect that companies spend different proportions of their turnover in IT.

There are only a few companies that did not spend money for software and hardware in 2005. This can be explained by the fact that investments are not done every year, especially in the SME sector, where very few computers are used within a company.

Figure 7 also shows a positive trend as there are between 15-20% of companies that spend more than 5% of their turnover for software and hardware. This could reflect the fact that Polish companies - challenged by the market - need to develop their IT to level their competitiveness with the companies from Western Europe. They have a lot to improve in IT. Therefore, they would need to invest a lot in the current and in coming years.

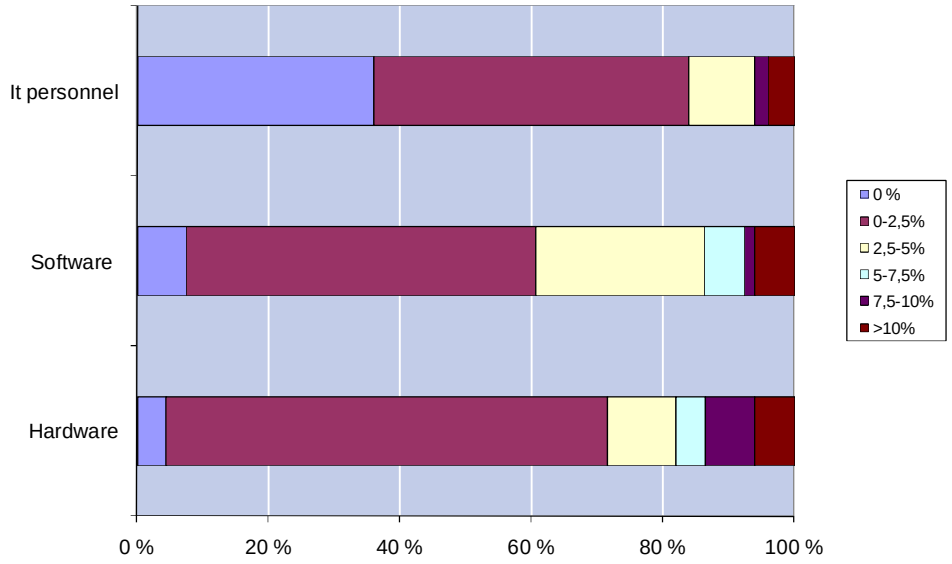

Figure 7 ICT expenses as a percentage of company turnover

The understanding of the need to develop IT in Polish companies is reflected in the results regarding the question where respondents were asked how they expected the ICT costs to develop in the next 3 years. Table 1 shows the results, whereby 32% of the companies expect the cost of hardware to increase, and 38% of the companies expect the software costs to increase. Only 6% of the respondents believe that these costs will decrease. However the understanding and plans for development are not common among all companies and the majority of them state that the costs will remain the same as they were in 2005.

For personnel, surprisingly, only 11% of the participants expected an increase in costs, while only 3% expect a decrease. This anticipated trend is in conflict with the overall market situation in Poland where - due to significant emigration of qualified personnel, mainly to Ireland and UK - there is a shortage of employees and salaries are expected to grow. This specific survey result can mainly be explained by two possible reasons:

- The investments in software and hardware are expected to be higher, and in relation to them, the expenses related to personnel seem not to be increasing
- In Pomerania there are two universities in the field of ICT, which provide every year to the market a supply of new ICT resources and professionals. Therefore the local companies might assume the costs of the personnel should not increase even the country trend is different, because they assume the

new supply of resources from local universities balances the demand, leading to stable salaries levels and the same stable costs for the companies.

Table 1 How the ICT-costs are expected to develop in the next 3 years

	Decrease	Remain constant	Increase
Hardware	4	42	23
Software	4	36	27
IT personnel	2	36	11

Table 2 indicates whether different data security measures are installed and regularly used/updated. The importance of the security of sensitive information is understood in the surveyed companies; hence, 82% of them uses password[10]. However, only 55% of them regularly uses and updates these passwords, indicating that they do not protect their data effectively.

A few more companies - 89%[11] - have virus protection applications available and only 68% of them regularly uses and updates them. Those two results and also the ones below show the awareness gap between Polish SMEs and companies from Western European countries.

Even less companies have computer firewall available (69%)[12], and much less than half of the surveyed companies uses and updates them regularly (38%). Further data insecurity situations appear when the use of documented data security programmes is analyzed: only 37% of the companies have such programmes and only 17% of the companies use and regularly update them. This poor security awareness could be explained by three reasons:

1. Low society IT awareness in general, as result of economy situation during and after communist times

[10] The results were withdrawn from a detailed data study, because it is not visible straight away in Table 2. The reason for the complex situation is the fact that the respondents interpreted the question in two different ways. 31 out of 39 understood that if they answered that they regularly used and updated password, then it automatically meant they had got password access control and they did not mark the answer ”available”. In order to come up with the final number the sum of available (27) and regularly used/updated (39) needed to be decreased by 8 cases where the answer was doubled.

[11] The calculation of the percentage was made analogically to the calculation described for password question.

[12] See above comments how the percentage was calculated.

2. Lack of capital to invest in IT in SMEs
3. Lack of employee education on data security issues (the survey data reveals that in less than half of the surveyed companies training is available, and only 15% stated the education is regular and up-to-date).

All the results presented in Table 2 clearly show that companies in Pomerania urgently need education and support in developing their data security measures, especially nowadays when business contacts via e-mail and the transfer of business data is rapidly increasing. Documents are transferred to the Internet and Intranet or they are sent by e-mail. Thus, the risks for the companies increase too, and they need protection.

Table 2 The use of different data security measures

	Available	Regularly used/ updated
Password access control	27	39
Virus protection applications	25	48
Computer firewall applications	29	27
Employee education on data security	23	11
Own documented data security program	16	12

Next, companies were asked how they monitor their ICT costs and performance (Table 3). Only 89% of the respondents answered the question. These 11% of missing answers mostly align with the 10% of companies not having e-mail account or access to Internet, and it is also within the range of companies (30%) that do not have organized IT support by internal or external department.

It can be stated that most of the respondents from companies where IT is not widely used, did not answer this question.

Table 3 How the companies monitor and evaluate their ICT costs and performance

	Disagree	Neither disagree nor agree	Agree
We regularly monitor and evaluate our IT costs and performance internally	12	22	29
We regularly monitor and evaluate IT costs and performance with selected suppliers and/ or customers	12	23	27
We regularly benchmark IT performance metrics against our competitors	22	24	16

The answers provided show that only 41% of the companies agree that they regularly monitor and evaluate their IT costs and performance internally. 17% disagree and 31% neither disagree nor agree. Even though for a company it is relatively easy to monitor its internal procedures because all data are available and transparent, there is still a lack of a widely developed business practice to control IT costs and performance in the surveyed companies. In many cases, due to the lack of control, the resources are not effectively used nor efficiently allocated. Nowadays, when competition is strong, the assignment of resources decides if a company will succeed in business or not. So it could be expected that Polish companies will be forced to develop the cost and performance control systems for IT. This kind of knowledge is now being developed in Poland; this is reflected in the number of programmes offered at Polish universities (and the attendance to these programmes). Besides, the knowledge is also transmitted through the know-how brought to Poland by foreign investors employing and training Polish managers, who later open their own businesses, or join Polish companies, or participate in education programmes and share their knowledge and experience.

Similar trend like in the internal monitoring and evaluation is observed in the business area of cooperation with selected suppliers and/or customers. 38% of the interviewed companies agreed that they regularly monitor their costs and performance with selected suppliers and/or customers, 32% neither disagree nor agree, and 17% disagree. Analyzing the detailed survey data, it can be concluded that the companies whose organization is mature enough to control internal IT costs and performance, also do it as a part of cooperation with selected suppliers and/or customers.

There is an even lower tendency to benchmark IT performance metrics against competitors. 31% of the companies do not regularly benchmark their IT performance metrics against their competitors. 34%

of the companies neither disagree nor agree and only 23% of the companies said that they performed benchmarking.

The general conclusion from the presented data above is that ICT systems are present in companies operating in Pomerania. However, there are still companies where ICT requires development. Also, the areas where ICT systems are supporting the business processes are quite narrow. The ICT awareness, especially in the areas of data security, performance and cost monitoring also requires improvement. The main factors slowing down the development are the capital and income of those companies, because when IT expenditures are analyzed as percentage of the turnover, then it is visible that the companies intend to spend money. 40% of the surveyed companies declare they spend more than 5% of their turnover for ICT expenses. However, the actual sum of the money to be spent for ICT in micro or small companies (with very small turnover) is not sufficient for any significant ICT investments.

3.2 Use of Internet

This section deals describes the use of Internet and websites, as well as with its contents. The respondents were asked if they use a modem, broadband connection or other type of connections in their day-to-day business (Figure 8). The data show that, even though the DSL has developed fast in Poland, and already 50% of the companies use it, still more than 40% of the surveyed companies use modems. Broadband connection allows to transmit data much faster than a dial-up modem, and enables people to make video and telephone conferences of good quality as well, and to send e-mails with big attachments.

However, more than 40% of the surveyed companies in Pomerania do not have:

- The connection technically available (not provided by the operator)
- A business need to use it, or
- Enough capital to install and use the broadband connection

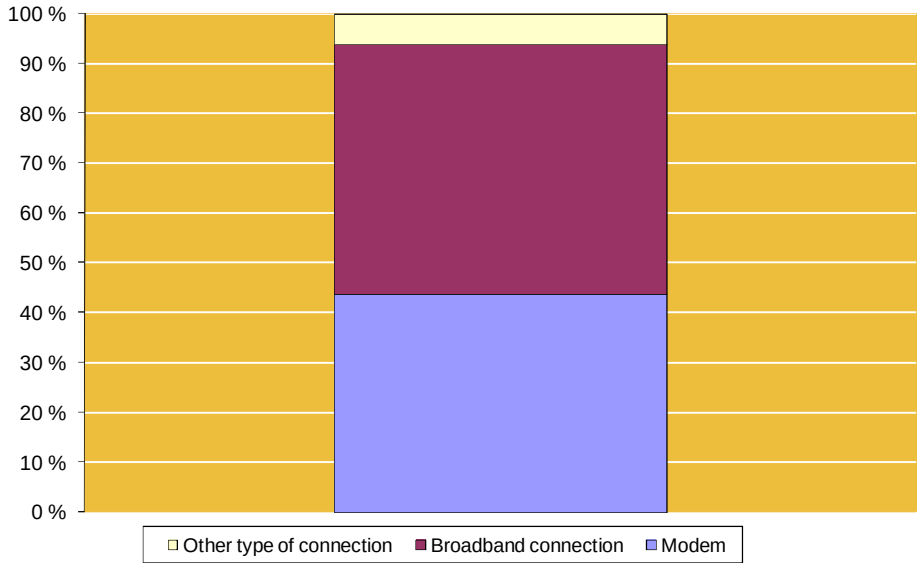

Figure 8 The type of connection companies have to the Internet

The companies were also asked if they had an own website and who is responsible for its design and administration. Here, 37 respondents - 52% of the companies - stated that they have their own website, and 46% do not have a website. The low percentage of companies having website, in the century when Internet becomes the basic mean of information exchange and business communication, confirms the still poorly developed ICT infrastructure and awareness in the SMEs sector as well as in the Polish society. The lack of a web page is not always caused by the fact the entrepreneurs do not want them, but by the fact they do not expect customers and suppliers to use it. Therefore, the market environment does not motivate entrepreneurs strongly enough to implement a web page. However, the trend is changing because more and more enterprises are gaining access to Internet. For example, in 2003 the ESPON report[13] estimated 80% of companies having access to Internet, but in 2004 there were 82%, and in 2007, the ICT survey performed for the LogOn Baltic Project shows that more than 95% of the companies have access to Internet. Regarding the enterprise's web pages, in 2004 ESPON reports that 52% of Polish companies had web pages. In this respect, Pomerania does not differ

[13] ESPON project 1.2.2 Telecommunication Services and Networks: Territorial Trends and basic Supply of Infrastructure for Territorial Cohesion, p. 140 - 144

from the rest of Poland, and has got better results than the Voivodships in the eastern part of Poland.

Among the 52% of the companies having websites, there are 78% web pages designed and maintained by an IT service provider, and 22% are designed and administered by the company's own IT department or certain employees. The trend shows the development of IT-specialized services, but also shows there are not many people with the skills to create and maintain the web page. Also, the access to software tools is limited so the service is purchased from external specialized company.

Asked about the types of features their website offers (Figure 9), more than 95% percent of the companies answered that they mainly use the website to provide general information about the company such as their history, location, general contact information etc. In most cases (more than 80 percent) this information is published together with information about the companies' products and/or services.

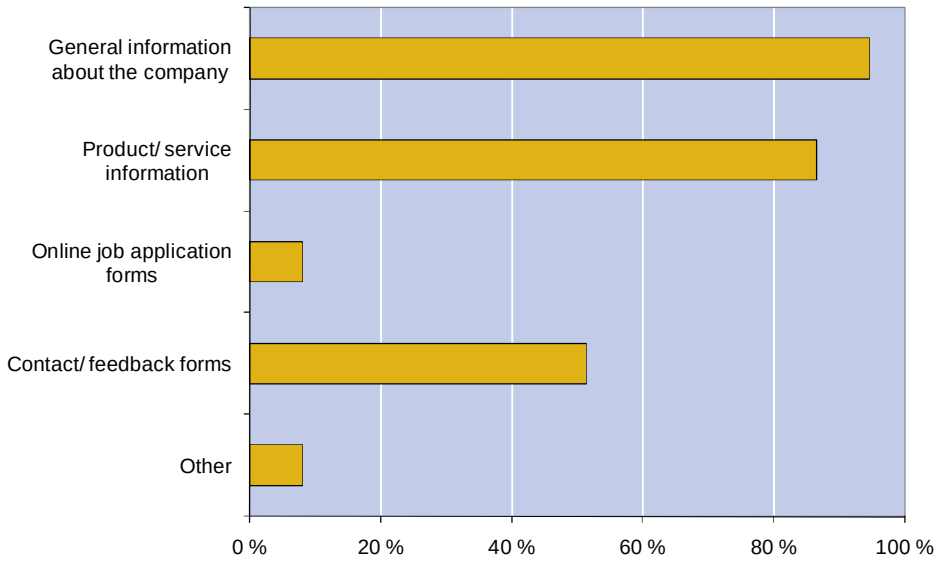

Figure 9 Different type of features that the company website includes

The feature less available on the web pages (only less than 10%) is online job application forms. It is not yet part of the Polish society's culture to apply for jobs online. Besides, the entrepreneurs prefer other classic methods in the recruitment process.

Contact and feedback forms are a bit more popular and approximately 50% of the surveyed companies declared that their web page offers this type of feature. This means that there is already a

group of companies who intend to be in close contact with their customers or suppliers, and perceive web page as a good way of performing and/or developing business. However, the group of companies is still very small – only about half of those having a web page.

The companies were also asked about the purpose of Internet use regarding interactions with public authorities and organizations. The main use of the Internet is to obtain information about public authorities and government organizations (37%) e.g. finding the right authority and contact person, addresses, opening hours etc. (Figure 10). Similar number (32%) of companies use the Internet for downloading or requesting forms, e.g. applications for licenses, bulletins, regulatory frameworks etc., and also the same number for making online payments to governmental organizations.

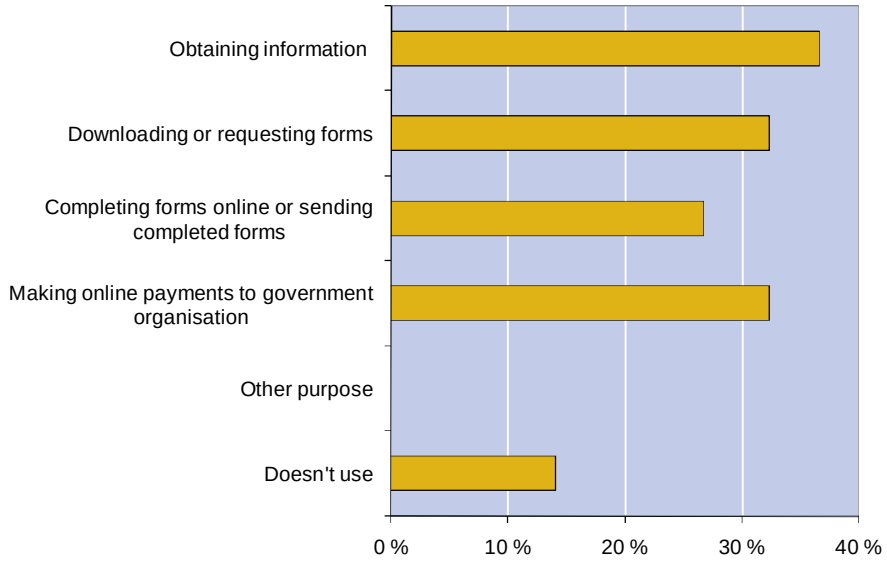

Figure 10 The different purposes companies use the Internet to interact with public authorities and government organizations

However, the Internet is no used so much for completing and sending on-line forms; only 27% of the companies declare they use this way of cooperating with public authorities and governmental organizations. There are also 14% of companies who do not use Internet for dealing with public authorities and organizations. As stated earlier, 3% do not have Internet access at all, but other who do have access, do not use it for this purpose.

The above described situation of very low usage of Internet to interact with authorities and governmental organizations is not only caused by the entrepreneurs themselves, but mainly by the fact that Polish government and authority's offices are not capable and ready to deal with an electronic version of documents. The main obstacle is the lack of electronic signature in Poland, and the lack of document control systems in the Polish administration. The area where the electronic document exchange is most developed in Poland is the Tax Office and Customs Office.

However, only 5 out of 71 surveyed companies confirmed they use the Internet for clearing goods through customs. One of the reason explaining such low percentage in this particular area might be the fact that many of those micro and small companies do not import or export, therefore, they do not have a need for clearing goods at all.

3.3 E-commerce / E-business

"E-commerce can be defined as the trading of goods and services over computer mediated networks, such as the Internet. Because e-commerce uses an electronic interface for exchanging and processing information, it offers the possibility at least of overcoming some of the geographically-defined obstacles to commerce in peripheral or low density regions. Although much of the focus of media interest in e-commerce has been on so-called 'business-to-consumer' (B2C) applications, with the on-line bookseller Amazon.com being one of the exemplars and indeed survivors from the dot.com crash of the late 1990s, it is actually in the field of 'business-to-business' (B2B) e-commerce that the most significant growth in markets has been demonstrated."[14]

The 'business-to-business' type of e-commerce is often called "e-business". Implementing e-commerce solution between two or more parties being enterprises or consumers provides the ability to perform major commerce transactions electronically. E-commerce and e-business in particular help to increase the efficiency of many business processes because they provide solutions to eliminate risks of human errors and also automate many different activities and shorten time of the entire process execution.

[14] Ibid, p. 139.

The key areas where e-commerce plays a significant role are the customer order placing, verification and acceptance including commitment. In e-business, the interfaces are also used for providing forecasts, inventory information, production schedules, confirming shipments and notifying about the shipment in advance, issuing and sending invoices and remittance messages. In general e-business enables companies to link their internal and external data processing systems more efficiently and more flexible.

The participants of the survey were asked which type of communication methods they use when communicating with customers and suppliers. As Figure 11 shows, telephone and fax are the most often used means for communication (more than 80% of the respondents indicated those methods as the one they use). These traditional methods are easily available for every company and do not require any specific skills as the modern ones do.

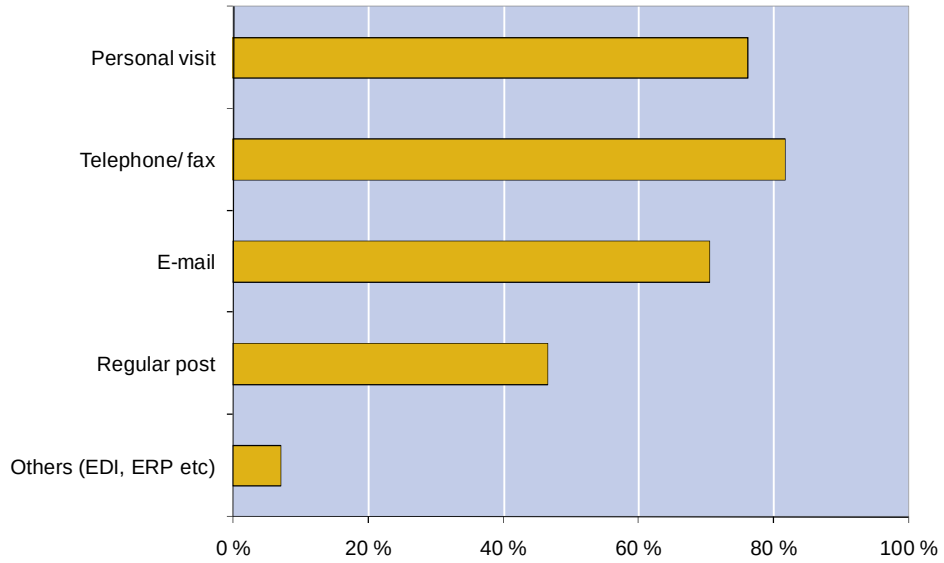

Figure 11 The type of communication methods the organizations use when communicating with customers and suppliers

Additionally, those methods allow to talk about issues directly as they arise, and get the response straight away. People do feel more comfortable and confident having contact with a person rather than with a computer system or post office box.

Also the personal visits are of great importance for the business. About 76% of the companies mentioned that they visit their customers and suppliers personally. A reason for this high number can be that the

respondents are mainly SMEs and in their cases the number of customers and suppliers is still manageable. Additionally, it is part of Polish culture – people believe they could achieve more when talking face to face with the partner in business.

As the ICT, especially electronic interfaces are not well developed in Poland (only less than 10% uses them). The e-mail is an important mean in communication – 70% of companies indicated they use e-mail for communicating with suppliers and customers.

The traditional post for sending messages is still a common method for communicating. More than 40% of the companies use traditional post mainly for the paper version of documents, where electronic versions are not sufficient in a business process – especially where a signature is required (e.g. for legal contracts, original invoices, etc.), because the electronic signature has not been implemented yet in Poland.

Table 4 shows the different types of business processes between the companies and their customers and/or suppliers which are actually handled electronically. Also, if the respondents thought rather those processes will continue being handled electronically or not.

Electronic orders and payments are the processes mostly handled electronically. However, in the case of orders, it is not always a B2B type of interface; it is rather an e-mail message where the order is sent in an attachment file. In case of payments, the banks widely implemented the electronic bank accounts so the payments are done electronically. On the one hand it is more common for the companies to send electronic orders to suppliers than receiving them electronically from customers, but on the other hand they make use more often of electronic means to pay than to receive payments from their suppliers. However, the companies plan to change this situation in order to start receiving more electronic payments from their suppliers. There is an 11% of expected increase in the use of electronic means of communication alone in this area - from 52% up to 63%.

Other areas between companies and their customers where a significant growth is expected in next 3 years are: tracing order and service status (from 24% up to 48%) and after sales support (from 20% up to 45%).

Companies in Pomerania - and in Poland in general - recognize that information for customers gives a competitive advantage. They also see that having information from suppliers is also critical for running business; therefore, they also expect an increase of electronic communication in the cooperation with their suppliers.

Table 4 The type of business processes between the companies and their customers/ suppliers that are handled electronically

	Customers		Suppliers	
	Now	In 3 Years	Now	In 3 Years
Order placement for products/ services	32	39	43	48
Order tracking/ service status available online	17	34	23	37
Payment possibilities	45	46	37	45
After sales support	14	25	16	26

Table 5 confirms that the participating companies have a higher tendency to do business electronically with their suppliers than with their customers. 59% of the respondents handle a certain part of their business interactions electronically with their suppliers, and only 46%, with customers.

Rarely, the companies handle the majority of their business electronically. None of the surveyed companies handles over 60% of the business transactions with customers electronically.

Only 4 companies (almost 6%) handle over 60% of the business transactions with suppliers electronically. (Most often they are companies with foreign investor capital that adopted the business procedures and standards from global corporations and their customers and suppliers are localized mainly outside of Poland). It is worth mentioning that there are single, new, 100% Polish capital companies appearing on the market, who do implement very high quality management systems including e-commerce.

There are also 18% of companies with no electronic business with their customers and 15% of companies with no electronic business with their suppliers. Those data correspond with the earlier presented statements regarding ICT systems, Internet and web pages, and confirm that there is still a group of companies in Pomerania who are “disconnected” from ICT technologies in their business operations.

Table 5 The share of companies business that is handled electronically

	0 %	1-19%	20-39%	40-59%	60-79%	80-100%	Total
Customers	13	19	5	9	0	0	46
Suppliers	11	19	6	13	2	2	53

The numbers in Table 6 reflect that the companies do understand that e-commerce is a fixed element of future business cooperation; none of the companies expects a decrease of e-commerce transactions. Most of them believe it will increase and less than half believe it will remain the same.

Table 6 The companies' opinion on what the development of the share e-commerce will be in their business operations

	Decrease	Remain the same	Increase
Customers	0	22	28
Suppliers	0	18	34

The surveyed companies were also asked about their view concerning the importance of e-commerce for their business. Figure 12 shows that between 60-80% of the respondents assure that e-commerce helps their business.

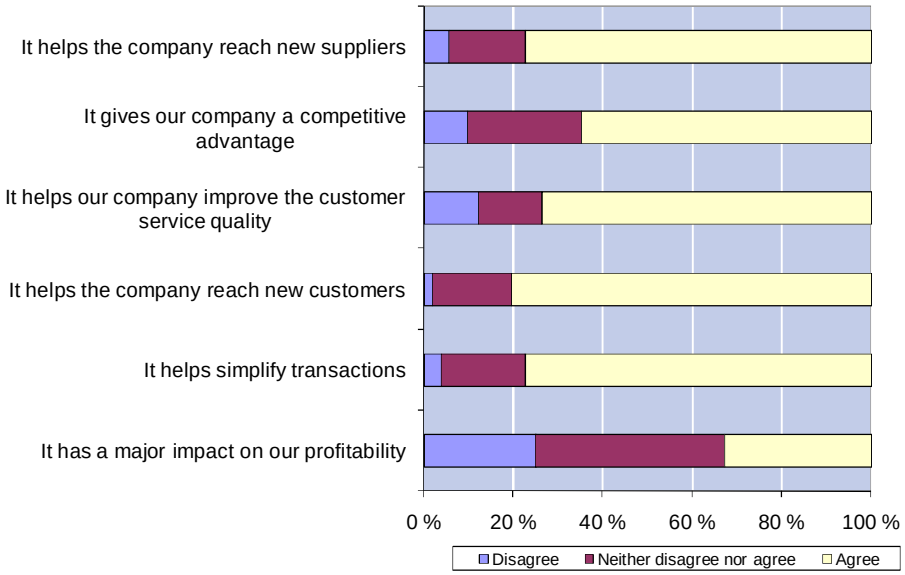

Figure 12 Companies views on the importance of E-commerce

However, at the same time most of them do not recognize that e-commerce can have a major impact on their profitability; only about one third of them agreed it could. This confirms the low ICT awareness and is also linked to the fact that SMEs scale of business is usually

relatively small. Therefore, the cost reductions due to e-commerce compared to other costs are relatively very small. So they do not perceive e-commerce impacting the profitability.

E-commerce is mainly recognized as a tool that helps reach new business partners: customers and suppliers (80% of the respondents agree with this statement). Approximately 15% less respondents agree that it gives the company a competitive advantage. There is still a relatively low confidence in ICT in Poland; the answers reflect it. The companies do recognize that e-commerce can simplify the transactions.

3.4 General assessment of ICT usage

In the last question the companies were asked to assess the effects of different barriers on the use of Internet, e-commerce and ICT in general. Participants could choose between a negative effect, a neutral and a non-negative effect.

Security concerns are the most important barrier for the use of Internet. The second most mentioned concern is the lost working time because of Internet surfing, and third, the low data communication. Regardless the low ICT awareness and lack of capital to invest in ICT, in the case of Internet use, the expenses and complicated technology are not mentioned as key barriers. Technology is not considered as a barrier at all. There is no barrier related to the lack of perceived benefits from the use of Internet.

Companies implementing e-commerce see the main barriers in the logistical problems and uncertainty concerning payments, but no barrier when the contractual issues are considered. Also, they see the costs of maintaining e-commerce systems as a bigger barrier than the use if Internet. While Internet technology seems to be very familiar and uncomplicated for the companies, the e-commerce still requires additional skills and special maintenance of the systems, leading to higher expenses.

The positive impact for future development of e-commerce in Pomeranian companies could come from their confidence that the product and services they offer are applicable for e-commerce and they are not a barrier for implementing such systems. The same applies to the companies' opinion that the readiness of suppliers and customers for using Internet is not a barrier. Considering the fact that the data presented in Figure 11 show that only less than 10% of the companies

use solutions such as e.g. EDI or ERP for communicating with suppliers and customers, it could be expected that a general readiness for e-commerce is a barrier from a technical point of view. Therefore, the answers stating that the customer's and supplier's readiness for using e-commerce and e-business is not a barrier for the development, could be a consequence of one of the following:

- Using Internet for gathering product information and e-mail is considered as e-commerce (without advanced e-commerce systems)
- The openness of customers and suppliers to use e-commerce in the future is considered by the surveyed companies as their partner's readiness
- The respondents are not fully aware about what is required to be ready for e-commerce and they only consider the wish of being ready as being ready – this hypothesis could be supported by the fact that out of 20 companies who stated this, only 4 of them use EDI or ERP solutions
- There is a general understanding that sooner or later most of the companies will adopt e-commerce.

In the section regarding the use of ICT in general, the main barrier pointed out was the lack of perceived benefits for the company. The high ICT expenditure was mentioned by very few respondents as a barrier.

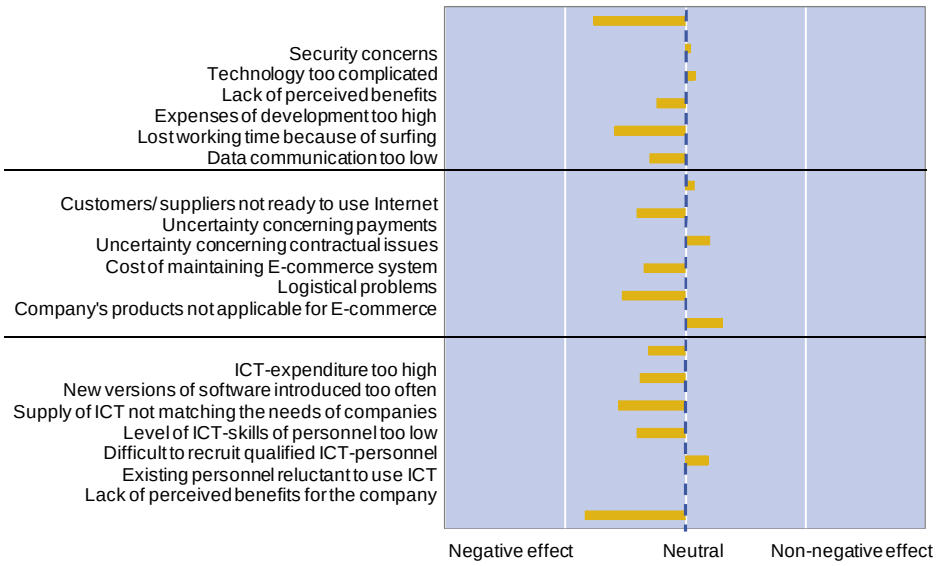

Figure 13 The effect of different barriers on the use of Internet, e-commerce and ICT in general

Also, the supply of ICT not matching the company needs was considered as a barrier by many of the respondents, together with barriers such as: too low level of personnel ICT skills and new version of software implemented too often.

4 SUMMARY AND CONCLUSIONS

The purpose of this report is to present the results of the ICT survey conducted in Pomerania (The Pomorskie Voivodship), Poland from April to October 2007. Different topics were covered in the survey, such as the usage of ICT systems, ICT administration and costs, and barriers to the usage and the future development of ICT. 71 respondents took part in the survey, 98% of which represent SMEs. This supports the objective of the LogOn Baltic to evaluate the needs and to strengthen the competitiveness mainly of SMEs.

Regarding the industrial sectors, 49% of the respondents represented the manufacturing industry, 25% belonged to the trading industry, more than 1% represented logistic service providers, and 24% represented “other” industries. The results of the survey show that in the majority of the companies some of the employees have access to Internet and e-mail, but usually only small groups of employees. Approximately 40% of the companies claim that over 75% of their employees have access to Internet, and even less companies claim that their employees also have a company e-mail account.

Finance and Accounting, Marketing/Sales and Sourcing are the business areas where ICT systems are used the most. The ICT systems are administered either by own employees or an own IT department in more than 60% of the companies. In almost 40% of the companies there is no regular IT support arranged. In most cases, the estimated costs for personnel, software and hardware account for 0 - 2.5% of the turnover, in each case. Although, almost 40% of the companies stated that their IT personnel cost is zero. In the next three years, however, an increase of these costs is expected.

Regarding the analysis of data security measures, it can be stated that a number of measures such as the usage of passwords, virus protection applications, firewalls and employee training regarding data security are already implemented in the companies, but the usage rate can be further improved, because only 55% of the respondents said they regularly use password control access to their systems and regularly update it; the virus protection applications are regularly used and updated by only 68% of companies.

Between 39-41% of the companies use the possibility of monitoring and evaluating their ICT costs and performance internally and together with their suppliers and/or customers in order to identify areas for improvements and cost savings. There is an even lower tendency to benchmark IT performance metrics against competitors. 31% of the companies do not regularly benchmark their IT performance metrics against their competitors.

52% of the companies stated they have an own website. The majority of those companies use the website to present information about the company and the products/services offered. About half of them also offer contact and feedback forms, which allow their clients to directly communicate with them. Websites of public organizations and institutions are mostly used for the retrieval of information and the download of forms. The possibility of making payments online is also adopted by more and more companies. The analysis of the usage of communication methods shows that a big number (80% of the companies) use traditional methods such as fax and telephone to communicate, but e-mail is becoming very common too and is used by more than 70% of the companies. Personal visits, however, still have the highest priority in order to stay in contact with customers, suppliers and other business partners.

The results of the survey indicate that e-commerce is used by the companies in Pomerania. However, it is not widely implemented, and the main barriers are related to the fact that companies do not perceive it as something impacting their profitability or giving them competitive advantage.

In summary, the LogOn Baltic survey results show, that information and communication technologies are present in the business processes of companies operating in Pomerania and the situation is improving in Poland. The development can be visible when the results of this report are compared with the ESPON-report regarding ICT and also when analyzing the ICT market indicators published by the Central Statistical Office showing an increase from 10% in 2003 up to 31% in June 2007[15]. There is an expectation of further development reflected in the answers provided to the LogOn Baltic survey e.g.:

- Future spending on ICT as percentage of turnover
- Planned usage of ICT applications in new business areas by 10% of the companies

[15] Koniunktura gospodarcza. Usługi. Czerwiec 2007. nr 6/2007, Główny Urząd Statystyczny, Warszawa, 2007.

- 100% growth in handling business electronically for tracing orders and service status or after sales support
- Planned increase of e-commerce usage in cooperation with suppliers and customers (including increased share of e-commerce in their business operations)
- Products considered as applicable for e-commerce

Despite the trend for ICT development, the micro and small companies consider their scale of business as not supporting a great necessity of using ICT to be able to operate. They also indicate that their scale of business does not support recognition of significant benefits for cost reductions and profitability as results of ICT usage in business processes. Therefore the main barrier to use ICT pointed out by the surveyed companies was the lack of perceived benefits for the company and also supply of ICT not matching company needs. As a result, there are still almost 10% of companies having no access to Internet or e-mail, half of the companies use low performance modems to connect to the network, and almost 40% do not have regular IT support solutions implemented. Approximately 46% does not have an own website. Data security requires improvement, especially since the increase of electronic data exchange brings rapid growth of risks.

From the survey results that there is a need to further support the ICT development within the SME sector by increasing the awareness as well as developing skills and triggering the investments in hardware and software by attractive programmes.

While the aim of this report was to present the results of the ICT survey in the Pomerania Voivodship, further research on this topic will be done in the future.

5 REFERENCES

Central Statistical Office: Statistical Yearbook of the Regions – Poland, Central Statistical Office, Warsaw 2006

ESPON: ESPON project 1.2.2 Telecommunication Services and Networks: Territorial Trends and basic Supply of Infrastructure for Territorial Cohesion

Główny Urząd Statystyczny: Koniunktura gospodarcza. Usługi. Czerwiec 2007, Nr 6/2007, Główny Urząd Statystyczny, Warszawa, 2007

http://www.klastry.pl

W.Kersten, M.Schröder, M.Böger, C.Singer and T.Solakivi: ICT Survey In The Southern Metropolitan Region Of Hamburg. LogOn Baltic, 2007

APPENDIX

Appendix 1 Interview guideline

Module A Contact- and background information

1. Contact information

a) Company Name/Business Unit: [Open field]

b) Postal Code: [Open field]

c) Contact e-mail: [Open field]

(Provide this information if you wish to receive the customised survey report)

d) Respondent's position in the company [Drop-down menu]

[ ] Senior management
[ ] Middle management
[ ] Operational staff
[ ] Expert
[ ] Other

e) Please choose whether you wish to respond on behalf of the whole firm or a group of companies OR an individual business unit [Drop-down menu]

[ ] I wish to respond on behalf of the whole firm or a group of companies
[ ] I wish to respond on behalf of an individual business unit.

2. Please indicate the current number of employed people: [Drop-down menu]

[ ] 1 -9
[ ] 10 – 49
[ ] 50 – 249
[ ] 250 – 499
[ ] 500 – 999
[ ] 1000 – 1999
[ ] 2000 – 4999
[ ] 5000 – 10000
[ ] Over 10000

In the next 3 years, do you expect the number of employees to … [Drop-down menu]

[ ] decrease
[ ] remain constant
[ ] increase

3. What activity best classifies your company? [Drop-down menu]

[ ] Automotive industry
[ ] Manufacturing of textiles and textile products
[ ] Financing / Banking / Insurance
[ ] Publishing and printing

[ ] Manufacturing of electrical and optical equipment
[ ] Manufacturing of basic metals and fabricated metal products
[ ] Manufacturing of pulp, paper and paper products
[ ] Manufacturing of wood and wood products
[ ] Manufacturing of chemicals, chemical products, and man-made fibres
[ ] Manufacturing of food products and tobacco
[ ] Wholesale Trade
[ ] Retail Trade
[ ] Government, Public Administration
[ ] Energy Supply
[ ] Construction
[ ] Transport, Distribution and Logistics
[ ] Health and Human Services
[ ] Tourism and Leisure Industry
[ ] ICT / Telecommunication
[ ] Maritime Industry
[ ] Other

4. Please indicate the total turnover of your company in the past year

[Drop-down menu]

[ ]	0 – 2 M EUR	[ ]	50.1 – 100 M EUR
[ ]	2.1 – 5 M EUR	[ ]	100.1 – 500 M EUR
[ ]	5.1 – 10 M EUR	[ ]	500.1 – 1000 M EUR
[ ]	10.1 – 25 M EUR	[ ]	1.1 – 5 billion EUR
[ ]	25.1 – 50 M EUR	[ ]	over 5 billion EUR

How do you expect the company's turnover to develop in the next 3 years?

[Drop-down menu]

[ ]	decrease	[ ]	increase
[ ]	remain constant		

5. Does the company have other subsidiaries? [Separate tick box for each]

[ ]	Yes, but only in (the home country)		
[ ]	Yes, also abroad:	In the Baltic Sea Region[1]	[ ]
		Rest of Europe	[ ]
		Other	[ ]
[ ]	No		

[1] South-West Finland, Östergötland, Denmark, Hamburg, West-Mecklenburg, North-East Poland, Lithuania, Latvia, Estonia, St. Petersburg

Module B Use of ICT systems

6. What percentage of your employees has access to…? [Separate tick box for each]

	0%	< 25%	25-50%	51-75%	> 75%
Company E-mail account	[ ]	[ ]	[ ]	[ ]	[ ]
Internet	[ ]	[ ]	[ ]	[ ]	[ ]

a. If any option was answered with '0%':

Does the company plan to give access to company E-mail account/Internet to the employees in the future? [Drop-down menu]

[ ] Yes

[ ] No

7. Does the company use (or plan to use) ICT technology in following areas?

[Separate tick box for each]

	Use	Plan to use	Not use
Accountancy	[ ]	[ ]	[ ]
Marketing/Sales	[ ]	[ ]	[ ]
Production	[ ]	[ ]	[ ]
Production Planning	[ ]	[ ]	[ ]
Logistics/Stock keeping	[ ]	[ ]	[ ]
Sourcing/Supply	[ ]	[ ]	[ ]
Finance	[ ]	[ ]	[ ]
Human Resources	[ ]	[ ]	[ ]
Other: _____	[ ]	[ ]	[ ]

8. The company has … (check both options if they apply to your company)

[Separate tick box for each]

[ ] an own IT department. With approximately _____ employees.

[ ] an IT service provider (IT outsourcing)

[ ] none of the above mentioned

How do you expect the outsourcing of IT services in your company to develop in the next three years? [Drop-down menu]

[ ] decrease

[ ] remain constant

[ ] increase

9. Please estimate the following ICT expenses expressed as % of company turnover in the past year. [Drop-down menu]

	0%	02-5%	2,5-5%	5-7,5%	7,5-10%	> 10%
Hardware	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Software	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
IT Personnel	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

b. How do you expect these expenses to develop in the next 3 years?
[Separate tick box for each]

	decrease	**remain constant**	**increase**
Hardware	[ ]	[ ]	[ ]
Software	[ ]	[ ]	[ ]
IT Personnel	[ ]	[ ]	[ ]

10. Does your company have – and actively use/update – the following data security measures? [Drop-down menu]

	available	**regularly used/updated**
Password access control	[ ]	[ ]
Virus protection applications	[ ]	[ ]
Computer firewall applications	[ ]	[ ]
Employee education on data security	[ ]	[ ]
Own documented data security program	[ ]	[ ]

11. Please indicate the extent to which you agree or disagree with the following statements regarding "IT performance evaluation" from the perspective of your company (where: -2 = strongly disagree, -1 = disagree, 0 = neither disagree nor agree, +1 = agree, +2 = strongly agree, NR = no response)

	- 2	**- 1**	**0**	**+ 1**	**+ 2**
We regularly monitor and evaluate our IT costs and performance internally	[ ]	[ ]	[ ]	[ ]	[ ]
We regularly monitor and evaluate IT costs and performance with selected suppliers and/or customers	[ ]	[ ]	[ ]	[ ]	[ ]
We regularly benchmark IT performance metrics against our competitors	[ ]	[ ]	[ ]	[ ]	[ ]

Module C Use of Internet

12. What type of connection to the Internet does your company use? [Drop-down menu]

[ ] Modem (via standard phone line)
[ ] Broadband connection
[ ] Other type of connection: _____

13. Does your company have a website. [Drop-down menu]

[ ] Yes
[ ] No *(Go to question 16)*

14. About the company's website…

a) Who designed and administers the website? [Separate tick box for each]

[ ] an IT service provider

[ ] the company's own IT department/special employees

b) Which of the following features does the website include? (Please check all that apply) [Separate tick box for each]

[ ] general information about the company

[ ] product/service information

[ ] online job application forms

[ ] contact/feedback forms

[ ] others: _____

15. Does your company use the Internet for interacting on a regular basis with public authorities/government organisations (Ministries, local governmental departments, Customs, etc)? [Separate tick box for each]

[ ] Yes, the company interacts with public authorities/government organisations for…

[ ] obtaining information (i.e. from websites or via e-mail)

[ ] downloading or requesting forms

[ ] completing forms online or sending completed forms

[ ] making online payments to government organisations

[ ] other (please specify) _____

[ ] No

16. Does your company use the Internet for clearing goods through Customs?

[ ] Yes

[ ] No

Module D E-commerce/E-business

17. Which of the following methods does your company use on a regular basis to contact customers/suppliers? [Separate tick box for each]

[ ] personal visit

[ ] telephone/fax

[ ] e-mail

[ ] regular post

[ ] Others (EDI, ERP, etc):_____

18. Which of the following business processes between your company and your customer/supplier are handled electronically (i.e. Internet, EDI, ERP)?

[Separate tick box for each]

	Customers	**Suppliers**
- order placement for products/services	[ ]	[ ]

- order tracking / service status available online	[ ]	[ ]
- payment possibilities	[ ]	[ ]
- after-sales support	[ ]	[ ]

How do you think the situation would look like in 3 years?

	Customers	Suppliers
- order placement for products/services	[ ]	[ ]
- order tracking / service status available online	[ ]	[ ]
- payment possibilities	[ ]	[ ]
- after sales support	[ ]	[ ]

19. Please indicate the approximate percentage of the company's commerce/business handled electronically (i.e. Internet, EDI, ERP) during the past year:

[Separate tick box for each]

	Customers	Suppliers
0%	[ ]	[ ]
1 – 9%	[ ]	[ ]
10 – 19%	[ ]	[ ]
20 – 29%	[ ]	[ ]
30 – 39%	[ ]	[ ]
40 – 49%	[ ]	[ ]
50 – 59%	[ ]	[ ]
60 - 69%	[ ]	[ ]
70 - 79%	[ ]	[ ]
80 - 89%	[ ]	[ ]
90 - 100%	[ ]	[ ]
doesn't know	[ ]	[ ]

In the next 3 years, do you expect this percentage to …

decrease	[ ]	[ ]
remain constant	[ ]	[ ]
increase	[ ]	[ ]

20. Please indicate the extent to which you agree or disagree with the following statements regarding the "importance of E-commerce/E-business" from the perspective of your company (5-point scale, where -2 = strongly disagree, -1 = disagree, 0 = neither disagree nor agree, +1 = agree, + 2 = strongly agree, NR = no response) [Separate tick box for each]

	- 2	- 1	0	+ 1	+ 2	NR
It has a major impact on our profitability	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
It helps simplify transactions	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

It helps the company reach new customers	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
It helps our company improve the customer service quality	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
It gives our company a competitive advantage	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
It helps the company reach new suppliers	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Module E General assessment of ICT usage

21. Please assess the significance of following barriers for the present or future use of Internet, E-commerce and ICT in general in your company. Indicate your opinion on the effect of each issue in your company by selecting between – 2 – + 2 (where: -2 = very negative, -1 = negative, 0 = doesn't know, +1 = positive, +2 = very positive, NR = no response). [Separate tick box for each]

	- 2	**- 1**	**0**	**+ 1**	**+ 2**	**NR**
Barriers on use of Internet						
Security concerns (i.e. hacking, viruses)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Technology is too complicated	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Lack of perceived benefits for the company	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Expenses of development and maintenance of website are too high	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Lost working time because of irrelevant surfing	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Data communication is too low or unstable	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Barriers on use of E-commerce						
Customers/suppliers not ready to use Internet Commerce	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Uncertainty/security problems concerning payments	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Uncertainty concerning contracts, terms of delivery and guarantees	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Cost of developing and maintaining an E-commerce system	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Logistical problems	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Company's products/services not applicable for Internet sales	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Barriers on use of ICT in general						
ICT expenditure too high	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
New versions of existing software are introduced too often	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Supply of ICT technology not matching the ICT needs of the companies	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The level of ICT skills is too low among the employed personnel	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Difficult to recruit qualified ICT personnel	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Existing personnel reluctant to use ICT	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Lack of perceived benefits for the company	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

(where: -2 = strongly disagree, -1 = disagree, 0 = neither disagree nor agree, +1 = agree, +2 = strongly agree, NR = no response)

	- 2	**- 1**	**0**	**+ 1**	**+ 2**	**NR**
Regional e-Government activities						
I'm satisfied with the existing e-Government offers	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
I'd appreciate more and better e-Government offers	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

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1:2007 Developing Regions through Spatial Planning and Logistics & ICT competence - Final report
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2:2007 Analytical Framework for the LogOn Baltic Project
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